PHASE I A ARCHAEOLOGICAL EVALUATION OF THE PROPOSED SR 1060 A20 SALINA BRIDGE PROJECT, BELL AND EDMON TOWNSHIPS, WESTMORELAND AND ARMSTRONG COUNTIES, PENNSYLVANIA

ER # 2016-8167-129

January 2016

Prepared For
Pennsylvania Department of Transportation
Engineering District 12-0
P.O. Box 459
Uniontown, PA  15401

Prepared By
Michael Baker International
Airside Business Park
100 Airside Drive
Moon Township, Pennsylvania 15108
PHASE IA ARCHAEOLOGICAL EVALUATION OF THE PROPOSED SR 1060 A20 SALINA BRIDGE PROJECT, BELL AND EDMON TOWNSHIPS, WESTMORELAND AND ARMSTRONG COUNTIES, PENNSYLVANIA
ER # 2016-8167-129

by
Kathryn M. Lombardi
Brian R. Seymour
And
Eric Filkins

Submitted by
Michael Baker International
Airside Business Park
100 Airside Drive
Moon Township, PA 15108
(412) 269-6300

Report prepared for
Pennsylvania Department of Transportation
Engineering District 12-0
P.O. Box 459
Uniontown, PA 15401

Principal Investigator

Kathryn M. Lombardi, M.A., RPA

January 2016
ABSTRACT

This report presents the results of a Phase Ia archaeological evaluation and geomorphological assessment conducted within the proposed SR 1060 A20 Salina Bridge Project Area, Bell and Edmon Townships, Westmoreland and Armstrong Counties, Pennsylvania. The survey was conducted by Michael Baker International (Michael Baker), for the Pennsylvania Department of Transportation (PennDOT). Proposed project activities include rehabilitation or replacement of the existing three-span historic bridge that carries SR 1060 over the Kiskiminetas River and the Norfolk Southern Railway.

A Phase Ia investigation, consisting of historic background research, pedestrian reconnaissance, and a geomorphological assessment was conducted on September 28, 2015. The Project Area is located within the Pittsburgh Low Plateau Section of the Appalachian Plateaus Physiographic Province (Sevon, 2000), in the valley of the Kiskiminetas River. The preliminary Area of Potential Effects measures approximately 2.19 ha (5.42 ac) in size, 0.6 ha (1.45 ac), or 27%, of which has been previously disturbed. The Project Area was divided into two test areas divided by the Kiskiminetas River. The northern portion of the Project Area has been heavily disturbed by modern landscaping activities, however, based on the presence of two early twentieth century houses and associated outbuildings, as well as remnants of the Western Division of the Pennsylvania Canal, subsurface archaeological testing is recommended. The southern portion of the Project Area has been heavily disturbed by industrial activity, including the Kier Refractory Brick Works site and the existing Norfolk Southern Railroad and no additional subsurface archaeological work is recommended at this time.

As part of the design process, an Area of Potential Effects (APE) will be established based upon proposed subsurface impacts within permanent and required right-of-way (ROW), as well as those within Temporary Construction Easements (TCEs). Supplemental archaeological investigations to facilitate project design will include mapping and recording the remnants of the Western Division of the Pennsylvania Canal in an Industrial Resource Form and a geophysical survey of the southern project area to determine the potential for intact historic deposits beneath the modern disturbances potentially related to the 19th/20th century Kier Refractory Brick Works and the 19th century saltworks.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>i</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF PHOTOGRAPHS</td>
<td>v</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td> Project Description</td>
<td>1</td>
</tr>
<tr>
<td> Preliminary Area of Potential Effect</td>
<td>1</td>
</tr>
<tr>
<td>ENVIRONMENTAL CONTEXT</td>
<td>3</td>
</tr>
<tr>
<td>BACKGROUND RESEARCH</td>
<td>7</td>
</tr>
<tr>
<td> Prehistoric Land-Use</td>
<td>7</td>
</tr>
<tr>
<td> Historic Land-Use</td>
<td>13</td>
</tr>
<tr>
<td>RESULTS</td>
<td>25</td>
</tr>
<tr>
<td> Archaeological Field View</td>
<td>25</td>
</tr>
<tr>
<td> Geomorphological Analysis</td>
<td>29</td>
</tr>
<tr>
<td>SUMMARY AND RECOMMENDATIONS</td>
<td>33</td>
</tr>
<tr>
<td> Northern Study Area</td>
<td>33</td>
</tr>
<tr>
<td> Southern Study Area</td>
<td>33</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>35</td>
</tr>
<tr>
<td>APPENDIX I: QUALIFICATIONS</td>
<td></td>
</tr>
<tr>
<td>APPENDIX II: AGENCY CORRESPONDENCE</td>
<td></td>
</tr>
<tr>
<td>APPENDIX III: GEOMORPHOLOGY AUGER PROBE PROFILES</td>
<td></td>
</tr>
<tr>
<td>APPENDIX IV: PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE</td>
<td></td>
</tr>
<tr>
<td> ARCHAEOLOGICAL REPORT SUMMARY FORM</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1: Location of Salina Bridge Project Area as shown on the Avonmore, PA USGS 7.5” topographic quadrangle. ........................................................................................................2

Figure 2: Project Area shown on the 1857 Map of Westmoreland County ..................................14

Figure 3: Project Area shown on the 1867 Atlas of Westmoreland County. ..................................15

Figure 4: Southern portion of the Project Area shown on the 1876 New Illustrated Atlas of Westmoreland County, Pennsylvania ....................................................................................16

Figure 5: Northern portion of the Project Area shown on the 1876 Atlas of Armstrong County. ..........................................................................................................................................17

Figure 6: Preliminary APE shown on the 1902 Elder’s Ridge, Pennsylvania 15-minute quadrangle. ........................................................................................................................................18

Figure 7: Preliminary APE shown on a 1938 aerial photograph of the Project Area........................19

Figure 8: Preliminary APE shown on a 1957 aerial photograph of the Project Area........................20

Figure 9: Preliminary APE shown on a 1967 aerial photograph of the Project Area........................21

Figure 10: Detail of 1829 map of Pennsylvania showing the approximate location of the Project Area and the canal..................................................................................................................22

Figure 11: Location of geomorphological auger bores within the Salina Bridge Project APE.........27
LIST OF PHOTOGRAPHS

Photograph 1: General view of the Kiskiminetas River, facing west (downstream) from bridge deck .......................................................... 4

Photograph 2: Steep rise from the south edge of the river up to the terrace of abandoned industrial development, facing south .......................................................... 4

Photograph 3: Abandoned industrial development covering southwest quadrant of study area, facing south .......................................................... 5

Photograph 4: Abandoned industrial development covering southeast quadrant of study area, facing northeast .......................................................... 5

Photograph 5: Steep escarpment from the north bank of the river within the northeast quadrant, facing east .......................................................... 6

Photograph 6: Residential development on the footslope at the top of the steep escarpment within the northwest quadrant, facing north .......................................................... 6

Photograph 7: Cut stone wall on northern bank of Kiskiminetas River, likely a remnant of the Western Division of the Pennsylvania Canal .......................................................... 23

Photograph 8: Railroad line that travels east-west through the Project Area, facing southwest .................................................. 25

Photograph 9: Steep slope observed in the southern portion of the Project Area, facing south .................................................. 26

Photograph 10: Brick factory lot in southern portion of the Project Area, facing west .................................................. 26

Photograph 11: Northeastern portion of the APE, facing south .......................................................... 28

Photograph 12: Northwestern portion of the APE, facing south .......................................................... 28

Photograph 13: General view of the portion of the northeast quadrant immediately adjacent to the bridge abutment and fill bed for the existing roadway, facing north .................................................. 30

Photograph 14: Residence, outbuilding, and landscaping within the northeast quadrant, facing north .......................................................... 30

Photograph 15: General view of the northwest quadrant, facing south. Photo left is the fill bed for the existing roadway .......................................................... 31
INTRODUCTION

Project Description

The proposed SR 1060 A20 Salina Bridge Replacement Project Area spans the boundary between Westmoreland County and Armstrong County, Pennsylvania, crossing the Kiskiminetas River (Figure 1). The Project Area is located in the town of Salina in Bell Township, on the southern side of the bridge and in the town of Edmon in Kiskiminetas Township, on the northern side. It is shown on the Avonmore, Pennsylvania 7.5-minute quadrangle (USGS 1998). Project activities include the rehabilitation or replacement of the existing three-span historic bridge that carries SR 1060 over the Kiskiminetas River and the Norfolk Southern Railway.

Michael Baker International (Michael Baker) conducted an archaeological assessment of the preliminary archaeological Area of Potential Effects (APE) for the Pennsylvania Department of Transportation (PennDOT) and the Federal Highway Administration (FHWA). The assessment, conducted on September 28, 2015, included a field view and geomorphological survey of the proposed Project Area and background research to determine the potential for encountering archaeological deposits within the preliminary archaeological area of potential effect (APE).

The cultural resource efforts for the archaeological investigation described within this report were conducted pursuant to the instructions and intents set forth in Section 106 of the National Historic Preservation Act, as amended; Executive Order 11593; the regulations of the Advisory Council on Historic Preservation (36 CFR §800, as amended January 11, 2001); Secretary of the Interior's Standards and Guidelines (48 FR 44716-44742); Environmental Rights Amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Sections 507 and 508 (1988) and the Guidelines for Archaeological Investigations in Pennsylvania prepared by the Pennsylvania State Historic Preservation Office.

Preliminary Area of Potential Effect

Design activities for the project are still under consideration and an archaeological APE), as per federal guidelines (36 CFR §800.16(d)), cannot be definitively defined at this time. Based upon initial engineering assumptions, a preliminary APE was developed that consists of the presumed limits of disturbance encompassing the proposed bridge replacement and associated road improvement activities, an area of approximately 2.19 ha (5.42 ac) (Figure 1). The preliminary APE extends approximately 43 m (140 ft) to the east and west sides of the bridge, and extends north to High Street and south to Main Street. The northern portion of the preliminary APE includes residential properties with landscaped lawns, two parcels to the west and two to the east. The southern portion is within an abandoned industrial area. An active Norfolk Southern rail line travels east-west through the preliminary APE and the remnants of the Kier Firebrick Factory, later the General Refractories plant, comprise the southernmost area. Once the project design is decided upon and an APE is defined by the District 12-0 Cultural Resources Professional (CRP), further assessment may be required.

Once the project design is complete, the APE will be finalized by the District 12-0 CRP, using the data presented in this report, possibly resulting in the need for further cultural resource assessments (Jaillet-Wentling 2016) (Appendix I).
Figure 1: Location of Salina Bridge Project Area as shown on the *Avonmore, PA USGS 7.5" topographic quadrangle* (USGS 1998).
ENVIRONMENTAL CONTEXT

The Project Area lies within the Pittsburgh Low Plateau Section of the Appalachian Plateaus Physiographic Province (Sevon, 2000), in the valley of the Kiskiminetas River. The river is flowing east to west through the Project Area, toward its confluence with the Allegheny River approximately 33 kilometers (21 miles) downstream, near Freeport, Pennsylvania. The area is underlain by Pennsylvanian-aged bedrock from the Glenshaw and Allegheny Formations (Berg, et al., 1980). The Glenshaw Formation, consisting of layers of shale, sandstone, red beds, limestone, and coal, overlies the Allegheny Formation, which is composed of sequences of sandstone, shale, limestone, clay, and coal.

The approximate elevation of the water surface of the Kiskiminetas River (Photograph 1) at the point of the Project Area is 245.4 m (805 ft) above mean sea level (msl). The south bank of the river consists of a steep rise from the river edge (Photograph 2) up to a relatively level terrace entirely covered with abandoned industrial development (Photograph 3), at an elevation range from 254.2 to 255.4 meters (834 to 838 feet) msl. An active railroad bed is situated at the top of the bank, along the proximal edge of the terrace (Photograph 4). South of the terrace is a steep escarpment leading from the terrace surface up to the small town of Salina. The road bed of Main Street was excavated into this escarpment, exposing bedrock strata. North of the river, a steep sideslope (Photographs 5 - 6) rises from the river edge up to a footslope with residential development along High Street. North of the footslope is a steep, rocky escarpment matching that of the south wall of the valley. The elevation of the footslope ranges from to 253.0 to 262.4 m (830 to 861 ft) msl. A narrow bench lies at the base of the sideslope, approximately 2 m (7 ft) higher than the normal water level of the river.

According to the online Web Soil Survey (USDA-NRCS 2015), the soils occurring over the southern quadrants of the Project Area are Urban land, 0 to 3 percent slopes, over the terrace tread, and Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded, along the base of the escarpment down to the river edge. The Urban land designation is assigned to areas covered predominantly by structures or pavement, and/or areas which have been extensively disturbed by large-scale excavation and grading. The Lobdell silt loam is a moderately well-drained soil forming in loamy alluvium on Holocene floodplains. North of the river, the entire Project Area consists of the Gilpin-Weikert channery silt loams, 25 to 60 percent slopes. The Gilpin soil is a well-drained and well-developed soil forming in residuum from the weathering of siltstone, sandstone, and shale. The Weikert soil is similar, but is relatively shallow to bedrock.

Flood Insurance Rate Mapping (United States Department of Homeland Security, Federal Emergency Management Agency, 2011) of the Project Area indicates that the land with a 1 percent annual chance of inundation (commonly known as the one hundred year floodplain) south of the river extends from the river edge up more than half of the rise to the surface of the level terrace. The railroad bed at the top of the rise is not within the floodplain zone. North of the river, the floodplain with a 1 percent annual chance of inundation extends approximately three quarters of the way up the rise to the footslope landform. The mapping indicates that the distal margin of this floodplain lies at an elevation of 250.8 m (823 ft) msl.
Photograph 1: General view of the Kiskiminetas River, facing west (downstream) from bridge deck.

Photograph 2: Steep rise from the south edge of the river up to the terrace of abandoned industrial development, facing south.
Photograph 3: Abandoned industrial development covering southwest quadrant of study area, facing south.

Photograph 4: Abandoned industrial development covering southeast quadrant of study area, facing northeast.
Photograph 5: Steep escarpment from the north bank of the river within the northeast quadrant, facing east.

Photograph 6: Residential development on the footslope at the top of the steep escarpment within the northwest quadrant, facing north.
BACKGROUND RESEARCH

A file search for previously identified archaeological sites and previous cultural resource surveys within a 1.6 km (1.0 mi) radius of the current archaeological APE was conducted using the Pennsylvania Historic and Museum Commission’s (PHMC) Cultural Resource Geographic Information System (CRGIS) in order to assess the probability for identifying archaeological sites during current investigations. One Phase I archaeological survey has been conducted within the 1.6 km (1.0 m) radius of the APE. No archaeological sites have been identified within the current archaeological APE, however two sites have been recorded within the 1.6 km (1.0 mi) radius of the APE. The Ramsey Iron Furnace Site (36WM0556) is located about 1,250 m (4,100 ft) northeast of the APE, and the Maysville Site (36WM0732), which does not have an exact location plotted on CRGIS, however, it is noted as being within a 1.6 km (1.0 mi) radius of the APE. The two previously recorded archaeological sites within a 1.6 km (1.0 mi) radius of the project area are recorded as having “Insufficient Information to Evaluate” for National Register of Historic Places eligibility status.

C. Hay’s (1989) Phase I Archaeological Investigations for the Proposed Relocation of L.R. 64261, Westmoreland County, Pennsylvania surveyed 44.47 ha (110 ac) of roadway corridor approximately 730 m (2400 ft) south of the Salina Bridge Project Area. No archaeological sites were identified during this survey.

Four historic structures have been recorded in the immediate vicinity of the bridge. Though unrecorded in this area, remnants of the Pennsylvania Canal-Western Division can be seen on the northern bank of the river. Portions of a cut stone canal wall are visible under the bridge and extending both east and west along the northern bank. In the southern portion of the Project Area, the NRHP eligible (3/9/2000) Western Pennsylvania Railroad (Key # 097496) travels under the bridge along the river north of the remains of the Salina Brick Works (Key# 047503). The bridge itself (Key# 100349) was determined NRHP eligible on March 5, 2007.

Prehistoric Land-Use

Early Man and Paleoindian Periods (15,000-8500 B.C.)

The Early Man, or Pre-Clovis, and Paleoindian periods encompass the end of the Pleistocene and include the waning stadia of the Late Wisconsinan glaciation. This was a time of full glacial climate characterized by a cold, dry, and windy environment (Watts 1979:458-459). A grassy tundra was in place in southeastern Pennsylvania at Longswamp on the edge of the Great Valley in Berks County, ca. 60 km (37.3 mi) south of the ice front, as late as ca. 13,000 B.C. The climate in southwestern Pennsylvania can be seen as approximating that in eastern Pennsylvania. The fauna present during the Paleoindian period was dominated by a mosaic community of boreal and temperate species that appears to have developed in response to the moderate but somewhat cooler climate that characterized the terminal Pleistocene (Guilday et al. 1964:174-180). Although megafauna such as mammoths and mastodons were available to be hunted, evidence gathered from settlement pattern studies and projectile point distributions in the northern part of the Midwest and Northeast, as well as ethnographic analogs, suggest an overwhelming dependence on caribou in the subsistence activities of the Paleoindian peoples. This posited dependence on caribou may have been augmented to some extent by the taking of white-tailed deer in what appear to have been more temperate locales, such as the Upper and Middle Ohio River Valley and the environs of Chesapeake Bay. However, the most distinct diagnostic tool of the Paleoindian tool kit, the fluted lanceolate projectile point/knife (pp/k), appears to have been hafted and used as a bayonet, and as such this unbarbed projectile would have been particularly unsuited for the efficient ambushing and taking of the characteristically solitary white-tailed deer. Conversely, this projectile point is most efficacious for bringing down gregarious
herd ungulates, like caribou, wherein a premium is placed on the number of animals that can be rapidly wounded with the smallest expenditure of energy (Caldwell 1958).

Evidence from Meadowcroft Rockshelter (36WH297) in the Cross Creek Valley, Washington County, Pennsylvania, suggests that early hunters and foragers may have been present in this portion of the Upper Ohio River Valley by 17,650 B.C., although the date has a large sigma of error of 2,400 years (Adovasio and Carlisle 1986:7). A series of sequential dates from higher levels in lower Stratum IIa at Meadowcroft Rockshelter range from 14,225 B.C. (in direct association with lithic tools and debitage) to 10,850 B.C. (Adovasio and Carlisle 1986:9). Although still considered to be controversial, these dates continue to represent the best evidence for the presence of "Pre-Clovis" populations in the eastern United States following the Woodfordian maximum.

Few sites, attributable to pioneering hunting groups, are known, however. In the formerly glaciated Northeast, Paleoindians apparently favored outwash terraces in valleys of second-, third- and fourth-order streams for the location of habitation sites, seemingly ignoring flood plains of streams and larger rivers. Major fluted pp/k sites tend to occur on riverine terraces but usually in areas on or south of the terminal Wisconsinan moraine. Gramly and Funk (1990:13-16) recognize five types of Paleoindian sites in the Northeast including quarry-workshops, habitations, kill-butchering sites, burials or caches, and isolated/stray finds.

Carr and Adovasio’s (2002:5) map of published Paleoindian sites shows three major occupation loci within the Appalachian Plateaus province: Meadowcroft Rockshelter, Russo, and Kellogg. Radiocarbon data from Meadowcroft Rockshelter (36WH297), located in the Cross Creek Drainage near Avella, in Washington County, provide evidence for human populations in Pennsylvania as early as ca. 14,000 B.C. and as late as 9350 B.C. (Carr and Adovasio 2002:7). The Russo Farm site (36AL39) consists of an artifact assemblage of 725 items that were surface collected and recovered from one test unit, including the midsection of a fluted point, an unfinished fluted point, three small gravers, and two beaks (George 1976). Based on the chert varieties represented, George (1976) concluded that the Paleoindian pattern of wide-ranging nomadic travel was not apparent from the lithic analysis at Russo Farm. The Kellogg Farm (36BT7) assemblage contains two finished Clovis points, two Clovis preforms, and a Mungai knife (McConaughy et al. 1977). Additional finds included two plano-convex end and side scrapers, one of which exhibited two graver spurs, and two large bifacially flaked knives or choppers which could have been Clovis point preforms. Based on the described artifact assemblage, which suggests that one of the activities conducted at the site was the production of fluted points, McConaughy et al. (1977) believe that the Kellogg Farm site may represent a Clovis manufacturing station and campsite.

To date, CRGIS data reveal nine previously recorded sites within Westmoreland County with Paleoindian components, all located at least 14.4 km (9 mi) east of the current Project Area. All but one of these sites are documented on floodplains or stream bench/terrace settings. Clovis points were recovered at three of the sites, unspecified fluted points were collected at eight sites; and a Folsom point was recovered at one of the sites. All but two of the sites are recorded as having “insufficient information to evaluate National Register eligibility. The Cross Rockshelter (36AR0040) and the Gerald Kimmel #1 site (36AR 121) have been completely excavated and recorded as having been destroyed.
Archaic Period (8500-1000 B.C.)

During the Archaic Period the hunter-gatherers adapted to a warmer and more diverse environment, exploiting forest mammals such as the white-tailed deer, fish, mollusks, nuts and a variety of plant foods (Fagan 1995:349). Projectile points changed, becoming more variable in size, and with stems and notching as the hafting devices (Dragoo 1993:1). Stone tools such as gouges, axes and adzes were made by pecking, grinding, and polishing (Mayer-Oakes 1955:19). The Archaic Period is divided into the Early (8500-6000 B.C.), Middle (6000-4000 B.C.), and Late/Terminal (4000-1000 B.C.) sub-periods.

At the beginning of the Early Archaic, ca. 8500 B.C., the Laurentide ice sheet retreated to an area north of the Great Lakes and St. Lawrence River, therefore reducing its effect on the climate of the Middle Atlantic region (Custer 1996:97). Between 8500 and 6000 B.C. there was a transition during which changes in vegetation occurred, including a reduction in open grasslands and a spread of woodland settings dominated by pine and spruce with some oak (Davis 1983; Webb 1987; Sirkin 1977, in Custer 1996). Within the Appalachian Plateaus region, the Early Archaic is considered to be a continuation of mobility patterns associated with Paleoindians, involving the selective usage of the surrounding habitat (Adovasio et al 1998; Stewart and Kratzer 1989, in Raber et al. 1998).

The Middle Archaic corresponds to the early portion of the Atlantic episode, a time of moist, warm climatic conditions when the temperature was warmer than at present. In the Upper Ohio River Valley the initial Middle Archaic period is represented by the Stanly Stemmed form, representing the end of the bifurcated base continuum, and the late Kirk Serrated form. Due to the environmental changes, interior areas became more attractive during the Middle Archaic, resulting in a proliferation of small procurement and base camp sites. Also, many technological changes appear to be related to a greater availability of edible plant species (Custer 1996:160-161). Middle and Late Archaic resource and procurement sites are found in upland settings with base camps usually situated on post-Pleistocene terraces (Cowin 1991) and small camps located near lithic sources (Raber et al. 1998).

During the Late Archaic, settlement loci were established to minimize the expenditure of energy necessary for food procurement (Miller 1993 in Raber et al. 1998). There is evidence for base camps that have a riverine orientation during the Late Archaic (Johnson et al. 1979; Stewart and Kratzer 1989, in Raber et al. 1998). Custer (1996:183) notes that an important technological change during the Late Archaic was an increase in the variety and number of groundstone tools. During the Terminal Archaic new pp/k forms appear in the broadspear/Susquehanna tradition and the descendant fishtail tradition. Carved stone bowls of steatite (and, occasionally, sandstone in the Ohio River Drainage) first appear. A steatite bowl fragment is recorded from site 36AL5, situated on the mainstem of the Ohio River (Mayer-Oakes 1955:145, Plate 84).

Woodland Period (1000 B.C.-A.D. 1050)

The Woodland Period is characterized by the introduction of fired clay pottery imitating stone vessel forms previously utilized during the Archaic Period, mortuary ceremonialism associated with the Adena-related occupation of the lower Upper Ohio Valley; long distance trade networks; population growth, an increase in sedentary behavior, the rise of agriculture, and the use of storage facilities (Mayer-Oakes 1955; Custer 1996). The Woodland Period is typically divided into Early (1000 B.C.-A.D. 1), Middle (A.D. 1-400), and Late (A.D. 400-1050) sub-periods. A variety of notched and stemmed projectile point types arose during the Early and Middle Woodland periods while large bifaces have been found in burial or cache contexts (Custer 1996). By ca 500 B.C., an essentially modern climate and environment emerged in Pennsylvania (Custer 1996:232). With the advent of an Oak-Hickory forest came a diverse assemblage of plant food sources that included acorns, chestnuts, hickory nuts, wild cherries, mulberries, and hackberries (Custer 1996:234). There was also an abundance of other wild food sources including goosefoot and pigweed.
By the Late Woodland Period most of Pennsylvania was covered with deciduous forests.

**Early Woodland (A.D. 1-400)**

During the Early Woodland, the ceramic vessel forms often reflected the sub-rectangular shape and flat bottoms of the antecedent carved steatite pots and frequently included opposed lugs, as did the earlier stone bowls (Egloff and Potter 1982:95, 97). There were also innovations in the shape of the vessels with concoidal bases, out-sloping walls, and more-or-less round orifices replacing the flat-bottomed "bathtub-shaped" initial form. Although Mayer-Oakes (1955:184, 189-190) included a single example of a concoidal base in his Half-Moon Cordmarked type, this form is exceedingly rare in the Upper Ohio River Valley. Half-Moon Cordmarked ware was a common ceramic form in the Upper Ohio River Valley during the Early Woodland period. It was coil-constructed and characterized by an eclectic variety of temper types, including pulverized igneous rock, sandstone, shale, chert, ironstone, fire clay, limestone, and various combinations of these clastic materials. Temper selection seems to have been opportunistic and was probably governed by available surficial rock sources. Vessel exterior and, frequently, interior surfaces exhibit prominent, coarse cord or twined textile impressions.

The earliest dated ceramics in the Upper Ohio River Valley were recovered from a terminal Archaic context at Meadowcroft Rockshelter (36WH297) in the Cross Creek drainage. Here, a large underfired sherd tempered with pulverized ironstone was recovered from the bottom lens in a large fire pit, significantly in association with a single squash (*Cucurbita pepo*) seed and wood charcoal radiometrically assayed at 1115 B.C. ± 80. A rim sherd from a second, technically more sophisticated Half-Moon Cordmarked vessel, was recovered from a stratigraphically higher lens in the same fire feature at Meadowcroft Rockshelter, and is dated by a second assay of 865 B.C. ± 85 (Johnson 1982:154). A more recent radiocarbon assay of 420±55 B.C. was assigned to a large concentration of Half-Moon Cordmarked sherds, some with lug handles, found at the base of a large, cobble-lined hearth deeply buried at site 36WM601 located approximately 4.2 km (2.6 mi) south of the current Project Area, along the Youghiogheny River in Westmoreland County, (Michael et al. 1984-85:131-207; Ballweber 1989:86-97).

Diagnostic pp/k forms of the late Early Woodland Adena culture include the Cresap, the Adena Ovate Base, the straight base Adena Stemmed, and Robbins types. The straight stemmed, square-based Adena form seems to persist along with the Adena Ovate Base type until very late to terminal Adena times, when both are replaced by the Robbins form. The Cresap variety seems to have declined in popularity at an earlier time. The various Adena stemmed pp/ks are associated with coil-constructed, flat-bottomed, flower pot/barrel-shaped Adena Plain ceramics in the Upper Ohio River Valley. Adena Plain ceramics normally exhibit a thickened rim strip and, not infrequently, opposed lugs. In the Ohio River drainage they are also associated with Half-Moon Cordmarked ceramics, such as at 36WM601 and the Crawford-Grist Site #2 (36FA262) in neighboring Fayette County (Grantz 1986:11-19).

A number of burial mounds are associated with the Adena-related occupation of the lower Upper Ohio Valley. Although most Early Woodland mounds are of modest proportions, several, including the Natrium (46MR2), Cresap (46MR7), McKees Rocks (36Al4), and Grave Creek (46MR1) mounds are quite large (Carpenter 1951; Dragoo 1963; Hemmings 1977; Mayer-Oakes 1955; Solecki 1952). The Grave Creek Mound in Moundville, West Virginia, is the largest Adena mortuary site recorded in the Ohio River Valley, while the McKees Rocks Mound (36Al6) represents the largest earth mound upstream from the Grave Creek Mound.
**Middle Woodland (A.D. 1-400)**

The Middle Woodland period is regionally defined by the rise and fall of the Scioto tradition Hopewell culture of the Middle Ohio River Valley. The transition of local Adena-influenced groups to ones displaying evidence of Hopewell interaction is not easily perceived. This is perhaps a function of the fact that the Scioto tradition late Adena culture simply evolved directly into early Hopewell (see Greber 1991). Physical evidence in the form of mortuary mounds and exotic artifacts and raw materials suggests a less intensive interaction with the Hopewell core than with the preceding Adena. A few low earth and stone slab burial mounds in the Upper Ohio River Valley can be associated with the Middle Woodland interlude. Compared to the earlier late Early Woodland and contemporary Hopewell tumuli in the Middle Ohio Valley, burial modes are bland and undistinguished, at least outside the terminal Wisconsinan moraine. The collapse of the Hopewell Interaction Sphere is hard to precisely fix archaeologically in western Pennsylvania. Several late Middle Woodland pp/k styles and other diagnostic lithics persist into the early Late Woodland period, e.g., Chesser Notched pp/ks and lamellar blades struck from polyhedral cores. Mortuary ceremonialism and burial mound construction also continue well into the Late Woodland period. In spite of these problems, the close of the Middle Woodland period is arbitrarily set at A.D. 400.

Projectile point/knives diagnostic of the Middle Woodland are generally rare (though present) in the region, characterized by a number of corner-notched and expanding stemmed pp/k forms, derived directly from Ohio Scioto and Illinois Havana tradition Hopewell sources or inspired by these prototypes, as well as by lamellar bladelets struck from prepared polyhedral cores of multi-colored Vanport (Flint Ridge) chert from central Ohio. These pp/k forms include Snyders, Manker Corner-Notched, Gibson, Norton, so-called "Hopewell", Manker Stemmed, and Lowe Flared Base/Steuben Expanding Stem forms. Locally, particularly in the Allegheny and Lower Youghiogheny river valleys, the later part of the Middle Woodland and the succeeding early Late Woodland period are represented by a series of relatively small corner-notched pp/k forms, including the Kiski-Notched, Garvers Ferry Corner-Notched, Murphys Stemmed (George 1982). Watson and Mahoning ware are the two dominant ceramic series of the Middle and Late Woodland interludes in the Upper Ohio River Valley. They are almost exclusively pedestrian, cord-marked, and undecorated for essentially all but the last few centuries of the first millennium A.D.

**Late Woodland (A.D. 400-1050)**

The Late Woodland period extends from A.D. 400, an arbitrarily selected date for the end of Middle Woodland Hopewellian influence, until the appearance of the Late Prehistoric period Monongahela culture village-dwelling horticulturists. The upper end of this interlude is more securely fixed at ca. A.D. 1050. In the Upper Ohio River Valley, particularly along the mainstem Ohio, Lower and Middle Monongahela, and Lower Allegheny river valleys, the entire Late Woodland interlude seems to be characterized first by the presence of the Chesser Notched pp/k form. This type has been considered to be related in a descendant and apparent degenerate fashion to the terminal Middle Woodland Early Late Woodland Middle Ohio Valley Lowe Flared Base/Steuben Expanding Stem pp/k continuum. Chesser Notched pp/ks are dated generally between ca. A.D. 300 and A.D. 1000 by a large number of acceptable radiocarbon assays from sites in the Middle Ohio River Valley. The dominant Late Woodland pp/k forms on the Glaciated Allegheny Plateau and in the Upper Allegheny River Valley, however are the closely related Jack's Reef Corner-Notched, Jack's Reef Pentagonal, Raccoon Notched, and Levanna forms, which have been included within Lantz's (1989) Raccoon Notched point assemblage and Seeman's (1992) Jack's Reef horizon/Intrusive Mound complex. The Jack's Reef varieties and the Raccoon Notched form are gradually supplanted by the Levanna triangle form during the ninth century A.D. (Funk 1976:283, Figure 25). This complex of related pp/k and distinctively decorated ceramics is generally dated to the sixth through ninth centuries A.D. on the Glaciated Allegheny Plateau and in the Upper Allegheny River Valley. Although many have speculated that these four related and often co-occurring forms mark the initial appearance of the bow and arrow complex in the Middle and Upper Ohio River Valley, Lower Great Lakes and Northeast,
Seeman (1992:41-42) seems to have demonstrated this fact. Undecorated and undistinguished limestone-tempered Watson Cordmarked ware is the predominant ceramic type. Sandstone-tempered cord-marked ware is also characteristically recovered from some terminal Late Woodland components along the Lower Allegheny River (George 1964).

Burial ceremonialism in the form of mounds with largely stone slab-lined and covered cists and stone slab matrices continues through the Late Woodland period at least in the lower Upper Ohio River Valley. Burial furniture is usually minimal and reflects a pattern evident in the Middle Woodland period in the same area. Late Prehistoric (A.D. 1050-1580) and Protohistoric (A.D. 1580-1635) Periods.

During the Late Prehistoric and Protohistoric periods, the Upper Ohio River Valley experienced a dramatic population explosion that is manifested in numerous large and visible village sites, which not infrequently served as the focus for several successive reoccupations. Accompanying this population expansion was a change in emphasis in settlement location along with an apparently radical shift in subsistence strategy away from the prevailing Woodland pattern to one that emphasized the occupation of interior upland locales (Johnson et al. 1989). In these two time periods, the lower reaches of the Upper Ohio River drainage were occupied by people of the Monongahela culture.

The Monongahela people lived in planned, nucleated, normally stockaded villages. The preferred loci for Monongahela villages include upland benches, saddles, and knobs, in descending order of frequency, located either on or directly adjacent to the drainage divides of tributary streams of the Monongahela, Youghiogheny, Allegheny, Kiskiminetas and Ohio rivers. Their subsistence base emphasized maize horticulture, hunting, and fishing with the harvesting of nuts as a minor focus. The rapid population expansion at the beginning of the Late Prehistoric period was undoubtedly the result of a reorientation of their subsistence economy toward a dependence on maize, which was of particular value as a storuable resource. The frequency of charred nut shells on Monongahela sites (usually far outnumbering charred maize kernel and cob remains), however, suggests that the older Woodland economic base was not totally abandoned.

In the material culture of the Monongahela, the most obvious change from earlier Woodland manifestations appears with the introduction of a new ceramic manufacturing technology accompanied by new vessel forms and decorative modes. The various changes in ceramic tradition, subsistence economy, and pp/k forms appear to have diffused piecemeal from the Middle Ohio River and were subsequently grafted onto an in situ Woodland base. Final twist direction studies of cordage impressions preserved on the exterior surfaces of Middle-Late Woodland and Monongahela culture ceramic sherds (Johnson and Speedy 1993) indicate that probably no appreciable population replacement occurred in the Upper Ohio River Valley between the Late Woodland and Late Prehistoric periods. The mainstem of the Allegheny and Ohio rivers appears to form the effective northern boundary of Monongahela culture territory.

Mary Butler (1936) was the first person to use the term Monongahela Woodland Culture. This was based on three archaeological sites (Clouse, Hanna, and Montague) excavated during the mid-1930s in Somerset County as part of a Works Progress Administration (WPA) archaeological project. The Clouse (36SO3) and Montague (36SO4) sites are located on the Youghiogheny River, while the Hanna site (36SO5) is situated on the Casselman River. In Westmoreland County, the Consol site (36WM100) is a Monongahela double stockaded village located above the eastern banks of the Youghiogheny River and is surrounded by the current Project Area. The site was first recorded in 1960 and was excavated by the Westmoreland Archaeological Society between 200 and 2015 (WAS 2001-2008).

Twenty-one prehistoric sites have been identified within a 3 mile radius of the Project Area, all but one within 551 m (1,811 ft) of the Kiskiminetas River. This site is the Indian Mill Stone Pictograph site (36 AR0326) and is located approximately 2.8 km (1.7 mi) north of the Project Area. The remaining sites are
concentrated in a portion of the river beginning 3.5 km (2.2 mi) east of the Project Area and extending south 4.1 km (2.5 mi). All of these sites are recorded as having “insufficient information to evaluate” their eligibility to be nominated to the NRHP.

Based on the background research and environmental information, the archaeological APE is considered to have a high potential for containing prehistoric archaeological sites. However, industrial development within the APE likely destroyed any intact prehistoric archaeological sites within the APE.

**Historic Land-Use**

The southern end of the APE is located in the town of Salina, Bell Township, Westmoreland County. This portion of Salina was not developed until the middle of the nineteenth century, when first the salt works and then the brick works were constructed. The Western Pennsylvania Railroad line that passes through the Project Area first appears on the 1902 USGS *Elders Ridge, Pennsylvania* 15-minute quadrangle (USGS 1902). It was first constructed much further from the river in the 1860s and moved to the river bank in the 1880s to better accommodate the industries in the area.

The northern end of the APE is located in the village of Edmon, within Kiskiminetas Township, Armstrong County. Edmon does not appear on available mapping until the 1902, when it is depicted on the *Elders Ridge, Pennsylvania* 15-minute quadrangle (USGS 1902). Edmon was a coal company town that was established sometime before 1891. The majority of the residents worked in the mines as late as 1940. However, by that time, several were working for the Works Progress Administration and in the brick factory and its associated industries in Salina across the Salina Bridge (U.S. Census 1940).

Historic maps and aerial imagery depict the Project Area as early as 1816. The Melish-Whiteside maps of Westmoreland and Armstrong Counties show no structures or notations at the location of the bridge (Melish and Whiteside 1816-1822). The 1857 map of Westmoreland County shows a salt works, likely Samuel Kier’s, in the southwest portion of the Project Area (Lake and Ames 1857) (Figure 2). The 1867 map of Westmoreland County also shows the salt works (Beers 1867) (Figure 3). The Kier Brothers Brick Works, constructed in 1874, first appears on the 1876 map, near where the salt works was located (Figure 4). The Map of Armstrong County shows a road to the bridge location but no structures in the vicinity of the Project Area (Figure 5).

A bridge is first shown at this location on the 1876 Atlas of Armstrong County (Davis 1876) (see Figure 5). No structures are shown until 1902, when structures are depicted adjacent to the bridge on the north side of the river and the railroad is shown on the south side. The towns of Salina and Edmon first appear on the 1902 topographic quadrangle (Figure 6).

Aerial photographs showing the development of the Project Area are available beginning with the 1938 series (USDA 1938, 1957, 1967). The Project Area appears much as it does today in these early photographs, with the exception of the brick works which was razed in January 2013 (Thomas 2013). The north side of the river, in Edmon, contains residential structures while the south shows the brick plant and the railroad (Figures 7-9).

The APE is considered to have a high potential for containing historic archaeological deposits. The northern portion of the APE includes backyards of two houses that are greater than 100 years old and remnants of the Western Division of the Pennsylvania Canal. The southern portion of the APE contains portions of the former historic Kier Fire Brick works and a historic Western Pennsylvania Railroad line that is still in use. While this area is highly disturbed, there is a potential for the southern portion of the APE to contain historic archaeological materials or subsurface cultural features.
Figure 2: Project Area shown on the 1857 *Map of Westmoreland County* (Lake and Ames 1857). Note the salt works located immediately southwest of the Project Area.
Figure 3: Project Area shown on the 1867 Atlas of Westmoreland County (Beers 1867).

Note the salt works located immediately southwest of the Project Area.
Figure 4: Southern portion of the Project Area shown on the 1876 New Illustrated Atlas of Westmoreland County, Pennsylvania (Davis 1876).
Figure 5: Northern portion of the Project Area shown on the 1876 Atlas of Armstrong County (Beers 1876).
Figure 6: Preliminary APE shown on the 1902 Elder’s Ridge, Pennsylvania 15-minute quadrangle (USGS 1902).
Figure 7: Preliminary APE shown on a 1938 aerial photograph of the Project Area (USDA 1938).
Figure 8: Preliminary APE shown on a 1957 aerial photograph of the Project Area (USDA 1957).
Figure 9: Preliminary APE shown on a 1967 aerial photograph of the Project Area (USDA 1967).
The Western Division of the Pennsylvania Canal paralleled the Kiskiminetas River through the Project Area. The canal, which was active ca. 1829-1857, extended along the northern bank of the river for most of its length through Armstrong County (Figure 10) (Hazard 1829 and 1935; Beers 1914:31; Rhoads 1960). The dimensions for the canal were 40 feet in width at the top, 28 feet at the base, with a depth of 4 feet. The inner banks of the canal had a slope of 67%. The towpath was generally built on the riverside of the canal and measured at least 11 feet in width. The opposite berm measured 7 feet in width for a total minimum width of 64 feet (Fritz and Clemenson 1992:5-6).

After showing little profit for the canal, the State tried to sell the canal as early as 1842 (Fritz and Clemenson 1992:16). It was finally purchased by the Pennsylvania Railroad in 1857 for $7.5 million, with the intent to abandon the portage railroad and the Western Division. The canal was totally abandoned by 1864 (Fritz and Clemenson 1992:16-18). Portions of the cut stone towpath revetment wall are still visible along the river bank through the Project Area (Photograph 7). Canal ruins in the vicinity of the Project Area are documented on the website Old Industry of Southwestern Pennsylvania.
Photograph 7: Cut stone wall on northern bank of Kiskiminetas River, likely a remnant of the Western Division of the Pennsylvania Canal.

Kier Fire Brick Works

In 1874, Samuel Kier began construction of the Kier Fire Brick Works at this location along the Kiskiminetas River. The plant, as well as the adjacent coal and clay mines operated until 1979, when General Refractories, owners of the factory since 1930, “ceased operations, citing industry pressures” (Wallace 1993:75). The factory buildings were torn down on January 22, 2013 (Thomas 2013). The area is currently vacant.

In addition to the brick works, Kier operated a coal mine and a clay mine approximately 229 m (750 ft) west of the current bridge location. These mines supplied the brick works. In 1876, the clay mine was operated “by eight men who mined about twenty-two tons in a nine hour day” (Wallace 1993:65).

The town of Salina was constructed to serve as housing for the workers at the Kier Fire Brick works. A June 1876 article in the Saltsburg Press described it as:

A fifty-nine lot town had been plotted on the hill above the plant. It was described as “beautifully situated on the table land west of the railroad track and presents an inviting appearance to those who desire a healthy and convenient location for a rural home.” In February 1876 fifteen to twenty of the lots had been sole “upon some of which improvements have been made.” The houses were individually owned, but the Kier Company sponsored a general store. The manager of the brickworks, R.A. Paul, also managed the store and kept “a large and varied stock [of] goods, suitable to the wants of the people of Salina and the surrounding county (Wallace 1993:64).
RESULTS

Archaeological Field View

Michael Baker conducted an archaeological field view and geomorphological assessment in the preliminary Salina Bridge APE on September 28th, 2015. The work was conducted by Michael Baker archaeologist Eric Filkins, B.A., under the direction of Principal Investigator Kathryn M. Lombardi, M.A., R.P.A., and the project geomorphologist, Margaret G. Sams, CPSS, who provided guidance on the placement and depth of subsurface testing.

To facilitate the survey, the preliminary APE was divided into two survey areas, north and south. The southern survey area was characterized by railway disturbance, precipitous slope and industrial disturbances related to the relict General Refractories and Kier Fire Brick Company brickyard facilities (Photographs 8 - 10). No suitable area for geomorphological or subsurface archaeological shovel testing was identified.

The northern survey area consists of residential properties bounded by Edmon Road to the north and the Kiskiminetas River to the south. Many auger borings were attempted in the northern quadrants, all but two of the borings were refused at less than 10 cm (4 in) in depth (Figure 11, Photographs 11 - 12). These probes are described in detail in the following Geomorphological Analysis section. Profiles of each boring are located in Appendix II. The APE is located within two residential parcels that have contained a structure since at least ca. 1902.

The northern portion of the Project Area also contains purported remnants of the Western Division of the Pennsylvania Canal. A cut stone wall was observed along the northern bank of the Kiskiminetas River, corresponding with the location of the canal as described in several historic sources (see Figure 10) (Hazard 1829 and 1935; Beers 1914; Rhoads 1960). The portion of this wall west of the bridge is shown in Photographs 6 and 7.

Photograph 8: Railroad line that travels east-west through the Project Area, facing southwest.
Photograph 9: Steep slope observed in the southern portion of the Project Area, facing south.

Photograph 10: Brick factory lot in southern portion of the Project Area, facing west.
Figure 11: Location of geomorphological auger bores within the Salina Bridge Project APE.
Photograph 11: Northeastern portion of the APE, facing south.

Photograph 12: Northwestern portion of the APE, facing south.
Geomorphological Analysis

Methodology

The landforms and soils of the Project Area were assessed for the potential to contain intact archaeological resources. The Project Area extended approximately 43 m (140 ft) in all directions from the existing bridge structure. The area was visually inspected, and no locations with soils to sample were encountered within the southern quadrants. Many auger borings were attempted in the northern quadrants, but all but two of the borings were refused at less than 10 cm (4 in) in depth. The two successful borings extended to 55 and 48 cm (22 and 19 in) below the ground surface. The soil profiles of these two borings were examined and described according to the methods and nomenclature prescribed by the USDA-NRCS (Schoenberger, et al., 2002). The locations of these borings are shown in Figure 11.

Results and Conclusions

The channel of the Kiskiminetas River is incising a deep valley into residual strata without creating a significant floodplain landform on either bank. The soil survey mapping (USDA-NRCS, 2015) indicates that only a few isolated, narrow areas with Holocene alluvial soils occur along the river bank for more than 20 kilometers (10 miles) upstream or downstream from the Project Area. Sideslopes and footslopes forming in residual or colluvial soils predominate within the river valley. Pleistocene alluvial terraces are present on the broad ridgetops outside of the valley, at elevations above 286.5 m (940 ft).

The terrace south of the river, covered with abandoned industrial development, was most likely a footslope similar to that present on the north bank. The slight slope of the original landform appears to have been excavated and graded to level before the industrial development and use of the area. The distal portion of the footslope was excavated into the underlying bedrock to maintain grade with the more proximal portion of the landform. No benches are present into the escarpment from the railroad bed down to the edge of the river. No original ground surface was encountered from which to sample a soil profile. This area has been extensively and deeply disturbed by past industrial development.

North of the river, a narrow discontinuous bench is present in the escarpment up to the footslope. Auger Boring 1 was taken into this bench. The profile was of 55 cm (22 in) of modern coal sands over impenetrable rock. This narrow bench may be the remnant of an access road through the area, on which modern alluvium is alternatively scoured away and deposited during periods of high flow.

The footslope on the northeast quadrant has been excavated and graded for the construction of a residence, outbuildings, and landscaping (Photographs 13 and 14). Rock features have been incorporated into the landscaping where it appears that intact bedrock had either previously outcropped, or is close to the ground surface. Many auger borings were attempted across this footslope, and all were rejected by impenetrable rock below a 10-cm (4-in) veneer of graded topsoil graded over the area for lawn growth. In one small area (center of Photograph 13), predominantly sandstone, coal, and cinders were exposed where concentrated erosion had removed the graded topsoil.
Photograph 13: General view of the portion of the northeast quadrant immediately adjacent to the bridge abutment and fill bed for the existing roadway, facing north.

Photograph 14: Residence, outbuilding, and landscaping within the northeast quadrant, facing north.
A residence with outbuildings is also present within the northwest quadrant (Photograph 15). Many auger borings were also attempted within this quadrant, and refused by rock fragments at a depth of 10 cm (4 in) or less. Auger Boring 2 was the deepest to auger refusal, at 48 cm (19 in) in depth. This profile was of fill (CA horizon) over the subsoil (2Bt horizon) of a well-developed soil forming in weathered sandstone and shale residuum. The continuous clay films of medium thickness covering peds within the subsoil indicate that this lower portion of the soil is intact and of significant age, but the original surface and upper subsoil are no longer present. This area was scalped or severely eroded, and covered with fill to smooth the ground surface for lawn maintenance.

Because no soils or sediments with the potential to contain intact prehistoric archaeological resources was encountered within the Project Area, no testing to detect the presence of prehistoric archaeological resources is recommended.

Photograph 15: General view of the northwest quadrant, facing south. Photo left is the fill bed for the existing roadway.
SUMMARY AND RECOMMENDATIONS

An archaeological field view and geomorphological assessment were conducted within the Salina Bridge Replacement Project preliminary APE on September 28, 2015. Michael Baker archaeologist Eric Filkins, B.A., under the direction of Principal Investigator, Kathryn M. Lombardi, M.A., R.P.A., examined the APE for archaeological potential and surface features. Margaret Sams, CPSS, assessed the preliminary APE for the potential for deeply buried culture bearing soils. The preliminary APE was divided into two study areas, north and south.

Northern Study Area

The northern study area is comprised of residential lots. The area has been heavily modified and auger probes in this portion of the Project Area encountered fill and impenetrable rock in each of the probes. Two probes extended beyond 10 cm (4 in). Both encountered impenetrable rock at 48 cm (19 in) and 55 cm (22 in). The area has been heavily disturbed by landscaping activity, scouring during periods of high river flow, and the placement of fill in areas of lawn that had been scoured in the past. Based on the field view observations and the geomorphological assessment, there is no potential for intact prehistoric archaeological sites.

The parcels on which the preliminary APE is situated have contained structures for over 100 years. These parcels may contain historic archaeological sites. The northern bank of the Kiskiminetas River, within the archaeological APE, also contains remnants of a cut stone wall that is likely a portion of a revetment wall for the towpath of the Western Division of the Pennsylvania Canal. The canal paralleled the Kiskiminetas for most of its path through Armstrong County but most of the evidence has been destroyed by historic and modern development. Additional historic research of the canal and detailed recordation of the cut stone wall in an Industrial Resource form is recommended to document the wall and its relationship to the canal. It is also recommended that this cut stone wall be avoided by proposed construction activity.

Southern Study Area

The southern study area is located within the former location of the Kier Refractory Brick Works and is not considered suitable for subsurface shovel testing. The preliminary APE is located on a terrace within the General Refractories industrial area and prior to the industrial development likely resembled the northern bank of the river. The geomorphological assessment concluded that: “No original ground surface was encountered from which to sample a soil profile. The area has been extensively and deeply disturbed by past industrial development.” Based on the field view observations and the geomorphological assessment, there is no potential for intact prehistoric sites. The potential for historic archaeological sites is limited to those related to the industrial activity of the brickworks and the railroad. Due to the condition of the ground surface, the majority of the APE is paved with concrete or asphalt, intensive background research is recommended in lieu of subsurface archaeological testing within the southern portion of the APE. Additionally, once the final APE is determined, it is recommended that a geophysical survey be conducted to determine the potential for intact subsurface historic-era cultural resources below the surface disturbances.
THIS PAGE INTENTIONALLY LEFT BLANK
REFERENCES

Adovasio, J. M., and R. C. Carlisle

Adovasio, J.M., R. Fryman, A.G., Quinn, D.C. Dirkmaat, and D.R. Pedler

Ballweber, Hettie L.

Beers, S. N. and D.G. Beers

Beers, J.H. and Company
1914 *Armstrong County, Pennsylvania; Her People, Past and Present, a Genealogical and Biographical Record of Representative Families, in Two Volumes*. J.H. Beers and Company, Chicago.


Butler, Mary

Caldwell, Joseph R.

Carpenter, Edmund S.

Carr, K. W., and J. M. Adovasio

Coke Oven Mike

Cowin, Verna L.

Custer, Jay F.

Davis, F.A.

Davis, M. B.

Dragoo, Don


Egloff, Keith T., and Stephen R. Potter

Fagan, Brian M.

Fenneman, N. M. and D. W. Johnson

Finley, Anthony

Fritz, David and A. Berle Clemenson

Funk, Robert E.

George, Richard L.


Gramly, Richard Michael, and Robert E. Funk


Grantz, Denise L.


Greber, N'omi B.


Guilday, John E., Paul S. Martin, and Allen D. McCrady


Hay, Conrad


Hazard, Samuel


Hemmings, E. Thomas

1977 The Core Drilling Project at Grave Creek Mound: Preliminary Results and Radiocarbon Date. *West Virginia Archeologist* 26:59-68.

Jaillet-Wentling, Angela


Johnson, William C.


Johnson, William C., and D. Scott Speedy

1993 Cordage Twist Direction as a Tool in Delineating Territorial Boundaries and Demonstrating Population Continuity During the Late Woodland and Late Prehistoric Periods in the Upper Ohio River Valley. Paper presented at the 5th Monongahela Conference, California University of Pennsylvania, California, Pennsylvania.
Johnson, W.C., J.B. Richardson III, and A.S. Bohnert


Johnson, William C., William P. Athens, Martin Fuess, L. Gonzalo Jaramillo, and Elizabeth Ramos

1989  *Late Prehistoric Monongahela Culture Site and Cultural Inventory.*  Cultural Resource Management Program, Department of Anthropology, University of Pittsburgh, in Fulfillment of a Survey and Planning Grant from the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation, Harrisburg.

Lake, D.J. and N.S. Ames


Lantz, Stanley W.


Mayer-Oakes, William J.


Michael, Ronald L., Denise L. Grantz, and Hettie L. Boyce


Miller, Patricia E.


Moeller, Roger W.


Pennsylvania Department of Conservation and Natural Resources (PA DCNR)

Pirkle, E. C., and W. Herbert Yoho

Raber, Paul A., Patricia E. Miller, and Sarah M. Neusius

Rhoads, Willard R.

Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors)

Seeman, M. F.

Sévon, W. D.

Sirkin, L.

Solecki, Ralph

Stewart, R. M. and J. Kratzer

Tantaquidgeon, G.

Thomas, Mary Ann
2013 “Historic Brick Factory Leveled, but Salina’s Foundation Endures,” article in *TribLive.* Accessed online at:

United States Bureau of the Census
1940 *Sixteenth Census of the United States, Population Schedule.*
United States Department of Agriculture (USDA)


United States Department of Agriculture, Natural Resources Conservation Service,


United States Geological Survey (USGS)


Wallace, Kim E.


Watts, W. A.


Webb, T.

APPENDIX I: QUALIFICATIONS
Kathryn M. Lombardi
Archaeologist

General Qualifications

Ms. Lombardi is an archaeologist with years of experience in the Mid-Atlantic and Greater Northeast regions, having worked in West Virginia, Pennsylvania, Ohio, Indiana, Virginia, Maryland, New York, New Jersey, Massachusetts, New Hampshire, and Rhode Island. Ms. Lombardi has actively worked in all phases of cultural resources management where she has acted as principal investigator, field supervisor, historic artifact analyst, field crew member, and report author or co-author on numerous project-related documents. In addition to her supervisory roles, Ms. Lombardi’s experience has expanded to include historic architectural survey as well as computer-assisted graphic design. Personal research interests include historical research and archaeology of the coal mining industry in West Virginia and southwestern Pennsylvania. Ms. Lombardi meets the Secretary of the Interior’s professional Standards for Archaeological Investigators (36 CFR 61).

Experience

Design and Construction Phase Services for S.R. 202, Section 300, Chester County, Pennsylvania. Pennsylvania Department of Transportation, District 6-0. Principal Investigator. Responsibilities included serving as archaeological Principal Investigator for Phase I archaeological survey during the Cultural Resources investigation. Michael Baker is performing preliminary and final design and construction phase services for the reconstruction and widening of S.R. 202, Section 300 from four lanes to six lanes. In addition, a 2.4-mile-long collector-distributor road is proposed at the S.R. 29 (Great Valley) Interchange, and new traffic signals are proposed at the S.R. 401 (Conestoga Road) Interchange.

E02721, W04, S.R. 422 Culvert Replacement Preliminary Design, Indiana County, Pennsylvania. Pennsylvania Department of Transportation, Central Office. Archaeologist. Responsibilities included serving as Principal Investigator for the Phase I archaeological survey and co-authoring the Phase I report and three addendum reports. Michael Baker provided engineering services for the replacement of two bridges on S.R. 422 over Curry Run and a tributary to Curry Run, and evaluated the need for a turning lane at the Cunningham Road intersection. Michael Baker’s services included project management; alternatives development and evaluation; a Level 1B categorical exclusion; surveying; preliminary stream relocation, drainage, and stormwater management design; preliminary cross sections, horizontal and vertical geometry; typical sections; preliminary pavement and subbase types; a preliminary geotechnical investigation; right-of-way investigation; preliminary type, size, and location studies; preliminary maintenance and protection of traffic plan; a safety review submission; and coordination with utilities throughout the design process.

N-E-01625, Lehigh County Bridge Replacements. Pennsylvania Department of Transportation, Central Office. Archaeologist. Responsibilities included reviewing the geomorphology portion of the Phase I archaeology report. The projects involve preliminary engineering, plan and bid package preparation. Michael Baker is
performing an alternatives study, preliminary design and a design build bid package for several bridge
replacements located throughout Lehigh County.

S.R. 28 Improvement Project, Allegheny County, Pennsylvania. Pennsylvania Department of Transportation, District 11-0. Archaeologist. Responsibilities included supervising Phase II archaeological field work, historic artifact analysis, and authoring sections of the report. Michael Baker provided environmental and engineering services to upgrade a two-mile, four-lane section of S.R. 0028 between the Chestnut Street Ramps and the Millvale Interchange to a limited-access expressway. S.R. 0028 was characterized by narrow lanes, proximity of fixed objects, lack of a median barrier, heavy traffic congestion, and insufficient sight distances. The project challenges included minimizing hillside impacts, maintaining current railroad capacity, constructing within a tight corridor, and accommodating historic structures, while enhancing safety, improving traffic flow, and providing pleasing aesthetics. The project includes the addition of median barrier on S.R. 0028, a grade-separated interchange at 31st Street, and new southbound on and off ramps at 40th Street to allow continuous mainline flow. The design team worked closely with the project stakeholders and the public to develop a design alternative that meets the project’s purpose and needs, addresses challenges, meets stakeholder and public desires, is constructible, and is affordable. Michael Baker’s services included project management; environmental compliance services; value engineering; roadway, bridge, interchange, retaining wall, and multiuse trail design; utility coordination and relocation design; stormwater management design; aesthetic design; complex construction sequencing and traffic control plans; intelligent transportation system design; and construction consultation.

On-Call Contract for Engineering and Environmental Services, Crawford, Erie, Forest, Mercer, Venango, and Warren Counties, Pennsylvania. Pennsylvania Department of Transportation, District 11-0. Archaeologist. Responsibilities included serving as Principal Investigator for archaeological investigations. Michael Baker provided highway, environmental, structural, and traffic engineering services under an on-call agreement. Michael Baker’s tasks included performing highway and bridge design, cultural resource investigation, geotechnical engineering, and hydraulic and hydrologic analysis, and serving as an extension of the client’s staff.

Phase I and II Archaeological Investigations for S.R. 28, Sections A09 and A10, Pittsburgh, Pennsylvania. Pennsylvania Department of Transportation, District 11-0. Archaeologist. Responsibilities included field supervisor for Phase II archaeology, historic artifacts analysis, and authoring sections of the report. Michael Baker conducted Phase I and II archaeological investigations for the rehabilitation of a narrow, heavily congested two-mile, four-lane section of S.R. 0028 within the City of Pittsburgh. Michael Baker’s tasks included performing historic background research, conducting a field survey, performing shovel test probes and deep trench excavations, providing programmatic agreement assistance, evaluating the National Register eligibility of two historic archaeological sites, and preparing Phase I and Phase II reports.

Design and Construction-Phase Services for Replacement of the West Maple Avenue Bridge, Bucks County, Pennsylvania. Pennsylvania Department of Transportation, District 6-0. Archaeologist. Responsibilities included serving as Principal Investigator for the Phase I archaeological survey. Michael Baker performed preliminary and final design and provided construction-phase services for replacement of the bridge that carries S.R. 0213 (West Maple Avenue) over Nesbitt Creek. Michael Baker’s tasks include overseeing environmental, geotechnical, hydraulics and hydrology, and utility investigations; preparing permit applications; performing cultural resource investigations; developing replacement bridge designs; preparing traffic control plans; conducting a final constructibility review; preparing construction documents and the construction schedule; and providing construction support services. Michael Baker designed a concrete replacement structure that incorporates an innovative, three-span prefabricated concrete arch system with flared wingwalls. In addition to expediting construction, the concrete arch system reduces future maintenance requirements.
Brian Seymour
Archaeologist and Field Supervisor

General Qualifications

Mr. Seymour is a field supervisor experienced in all phases of archaeological excavation, both historic and prehistoric, throughout Pennsylvania, West Virginia, Virginia, and Texas. With an MA in maritime archaeology from the University of Southampton, his specialization in the field allows him to work on projects both on land and underwater. His background of prehistoric knowledge comes from surveys and excavations of projects ranging from large land parcels to narrow corridors. He has excavated sites as shallow as few centimeters in rural uplands up to tens of meters deep in highly urbanized environments. Mr. Seymour is also well acquainted with 3D computer modeling, comparative mapping, CAD, GIS, Photogrammetry while also having a background in historic structures surveying, historic background research, and archival research. In addition to his US experience, Mr. Seymour has worked both professionally and voluntarily on archaeological projects in four countries both on land and underwater. Throughout his graduate studies and professional experience he has presented original work in both academic and industry settings. Mr. Seymour is also certified in American Heart Association CPR and Automated External Defibrillator (AED).

Experience

Derry Borough Bridge Design, Derry, Pennsylvania. Pennsylvania Department of Transportation, District 12-0. Field Supervisor. Supervised Phase I archaeological testing. Michael Baker is providing preliminary and final design for the replacement of the 12-span Derry Borough Bridge carrying S.R. 217 over the Norfolk Southern railroad. A new four-span structure will be constructed while maintaining traffic over the existing bridge to accommodate local businesses. Michael Baker will develop a project schedule, facilitate public meetings, assemble a categorical exclusion (CE) document, and perform topographical surveys and geotechnical engineering. Michael Baker will develop alternatives to minimize right-of-way impacts, reduce impacts to pedestrian movements and traffic, and minimize the roadway approach work. Design elements will include structure and roadway approach plans; cross sections; type, size, and location (TS&L) studies; drainage plans; hydrology and hydraulics; right-of-way plans; maintenance and protection of traffic plans; pavement marking and signing plans; erosion and sedimentation control plans; highway lighting plans; and traffic signal plans. Michael Baker will also provide topographical surveys, geotechnical engineering, utility and railroad coordination, and subsurface utility engineering (SUE).

E02721, WO4, S.R. 422 Culvert Replacement Preliminary Design, Indiana County, Pennsylvania. Pennsylvania Department of Transportation, Central Office. Archaeologist. Provided Phase I archaeological services. Michael Baker provided engineering services for the replacement of two bridges on S.R. 422 over Curry Run and a tributary to Curry Run, and evaluated the need for a turning lane at the Cunningham Road intersection. Michael Baker’s services included project management; alternatives development and evaluation; a Level 1B categorical exclusion; surveying; preliminary stream relocation, drainage, and stormwater management design; preliminary cross...
sections, horizontal and vertical geometry; typical sections; preliminary pavement and subbase types; a preliminary geotechnical investigation; right-of-way investigation; preliminary type, size, and location studies; preliminary maintenance and protection of traffic plan; a safety review submission; and coordination with utilities throughout the design process.

E02871, WO #2, Downingtown Station Environmental Assessment, Chester County, Pennsylvania. Pennsylvania Department of Transportation, District 6-0. Field Archaeologist. Conducted archaeological field view of project area. Michael Baker is conducting a pedestrian reconnaissance and background research to complete a request to initiate consultation in compliance with the Pennsylvania History Code and Section 106 of the National Historic Preservation Act for the proposed Downingtown Train Station Relocation Project. Michael Baker submitted the form to the state historic preservation office on behalf of the district and Southeastern Pennsylvania Transportation Authority. The coordination effort obtained Section 106 clearance for the proposed project area without the need for archaeological subsurface testing.

N-358R10, Multimodal Public Transportation Open-End Agreement, Statewide, Pennsylvania. Pennsylvania Department of Transportation, Central Office. Cultural Resources Specialist. Provided documentary background research of existing cultural resources at a New Castle Area Transit Authority construction/demolition site. Michael Baker provided services for public transportation planning throughout the state under an open-end agreement for multimodal public transportation planning. Services included planning, architecture and engineering design, design management, financial assessments, quality assurance and quality control, policy development, construction management and inspection, agency coordination, budget and schedule monitoring, and grant administration services.

S.R. 0019 Scholars Run Bridge Replacement Project, Jackson Township, Butler County, Pennsylvania. Pennsylvania Department of Transportation, District 10-0. Field Archaeologist. Responsible for Phase I archaeological testing. Michael Baker is providing preliminary engineering and final design services for the replacement of the bridge carrying S.R. 19 over Scholars Run in Jackson Township. Michael Baker's services include surveying, geotechnical investigations, preparation of maintenance and protection of traffic plans, structure design, roadway design, erosion and sedimentation control plans, permitting, temporary bridge design, temporary roadway design, dam removal and stream restoration, and construction consultation.

Millfair Road Bridge Preliminary Engineering and Environmental Studies, Erie County, Pennsylvania. Pennsylvania Department of Transportation, District 10. Field Supervisor. Responsible for reconnaissance of proposed roadway re-alignment right-of-way near the town of Erie, Pennsylvania and coordination with Pennsylvania Department of Transportation. This task was aimed at assessing the potential for impacting cultural resources possibly located within the project area. Michael Baker provided preliminary engineering and environmental studies for the elimination of two at-grade railroad crossings and construction of two new bridges carrying Millfair Road over the Norfolk Southern and CSX railroads. The project also included roadway and intersection improvements along Millfair Road from S.R. 20 to S.R. 5. Michael Baker provided project management, prepared a purpose and need statement, and developed and analyzed preliminary alternatives. Michael Baker also performed wetland delineation, performed a Phase I environmental site assessment of a known dump site in the project area, prepared a detailed noise study, identified coastal zones and historic architectural or archaeological resources that could be impacted by the project, prepared a Level 2 categorical exclusion document, and identified any potential Section 4(f) resources in the project area. Michael Baker prepared a line and grade submission for the preferred alternative, developed a preliminary right-of-way plan, collected and analyzed traffic data, and facilitated one general public meeting.

Brian Seymour
Eric J. Filkins
Cultural Resources Specialist

General Qualifications

Mr. Filkins has served as a field technician and also as a crew chief for numerous Phase I, Phase II and Phase III archaeological investigations in the Northeastern and Midwestern United States. Mr. Filkins has co-authored more than 20 Phase I cultural resource compliance reports while enrolled in graduate studies at Ball State University. He specializes in lithic analysis, with emphasis on macro and low level magnification analysis of flaked stone debitage.

Experience

Derry Borough Bridge Design, Derry, Pennsylvania. Pennsylvania Department of Transportation, District 12-0. Field Archaeologist. Field crew member. Michael Baker is providing preliminary and final design for the replacement of the 12-span Derry Borough Bridge carrying S.R. 217 over the Norfolk Southern railroad. A new four-span structure will be constructed while maintaining traffic over the existing bridge to accommodate local businesses. Michael Baker will develop a project schedule, facilitate public meetings, assemble a categorical exclusion (CE) document, and perform topographical surveys and geotechnical engineering. Michael Baker will develop alternatives to minimize right-of-way impacts, reduce impacts to pedestrian movements and traffic, and minimize the roadway approach work. Design elements will include structure and roadway approach plans; cross sections; type, size, and location (TS&L) studies; drainage plans; hydrology and hydraulics; right-of-way plans; maintenance and protection of traffic plans; pavement marking and signing plans; erosion and sedimentation pollution control plans; highway lighting plans; and traffic signal plans. Michael Baker will also provide topographical surveys, geotechnical engineering, utility and railroad coordination, and subsurface utility engineering (SUE).

Design and Construction Phase Services for S.R. 202, Section 300, Chester County, Pennsylvania. Pennsylvania Department of Transportation, District 6-0. Field Archaeologist. Responsible for the archaeological survey of the project area. Michael Baker is performing preliminary and final design and construction phase services for the reconstruction and widening of S.R. 202, Section 300 from four lanes to six lanes. In addition, a 2.4-mile-long collector-distributor road is proposed at the S.R. 29 (Great Valley) Interchange, and new traffic signals are proposed at the S.R. 401 (Conestoga Road) Interchange.

S.R. 0028, Sections A09 and A10, Final Design (East Ohio Street Improvement Project), Pittsburgh, Pennsylvania. Pennsylvania Department of Transportation, District 11-0. Field Archaeologist. Responsibilities included testing project area for archaeological remains. Michael Baker provided environmental and engineering services to rehabilitate a two-mile, four-lane section of S.R. 0028 characterized by narrow lanes, proximity of fixed objects, lack of a median barrier, heavy traffic congestion, and insufficient sight distances. The project challenges included minimizing hillside impacts, maintaining current railroad capacity, constructing within a tight corridor, and accommodating historic structures, while enhancing safety, improving traffic flow, and providing pleasing aesthetics. The project includes the addition of median barrier on S.R. 0028, a grade-separated interchange at 31st Street, and new southbound on and off ramps at 40th Street to allow continuous mainline flow. The elimination of mainline traffic signals contributes to the goal of promoting uninterrupted flow along the corridor. The design team
worked closely with the project stakeholders and the public to develop a design alternative that meets the project’s purpose and needs, addresses challenges, meets stakeholder and public desires, is constructible, and is affordable.

**S.R. 28 Improvement Project, Allegheny County, Pennsylvania.** *Pennsylvania Department of Transportation, District 11-0.* Field Archaeologist. Field Crew member. Michael Baker provided environmental and engineering services to upgrade a two-mile, four-lane section of S.R. 0028 between the Chestnut Street Ramps and the Millvale Interchange to a limited-access expressway. S.R. 0028 was characterized by narrow lanes, proximity of fixed objects, lack of a median barrier, heavy traffic congestion, and insufficient sight distances. The project challenges included minimizing hillside impacts, maintaining current railroad capacity, constructing within a tight corridor, and accommodating historic structures, while enhancing safety, improving traffic flow, and providing pleasing aesthetics. The project includes the addition of median barrier on S.R. 0028, a grade-separated interchange at 31st Street, and new southbound on and off ramps at 40th Street to allow continuous mainline flow. The design team worked closely with the project stakeholders and the public to develop a design alternative that meets the project’s purpose and needs, addresses challenges, meets stakeholder and public desires, is constructible, and is affordable. Michael Baker’s services included project management; environmental compliance services; value engineering; roadway, bridge, interchange, retaining wall, and multiuse trail design; utility coordination and relocation design; stormwater management design; aesthetic design; complex construction sequencing and traffic control plans; intelligent transportation system design; and construction consultation.

**West Maple Ave/Salford Station Road Preliminary and Final Design, SR 0213 (West Maple Ave) over Neshaminy Creek, SR 1024 (Salford Station Rd) over Perkiomen Creek, Bucks and Montgomery Counties, Pennsylvania.** *Pennsylvania Department of Transportation, District 6-0.* Field Archaeologist. Field Crew member. This project involved the replacement of the bridge that carries SR 0213 (West Maple Avenue) over Neshaminy Creek in Middletown Township, Bucks County, Pennsylvania. This project also involved the replacement of the bridges that carry SR 1024 (Salford Station Road) over Perkiomen Creek and Mill Race in Upper Salford Township, Montgomery County, Pennsylvania.

**Petersburg Bridge and McAlevy’s Bridges 1 and 2, S.R. 305 and S.R. 26, Petersburg and McAlevy’s Fort, Pennsylvania.** *Pennsylvania Department of Transportation, District 9-0.* Analyst. Responsibilities included analysis of lithic artifacts. Michael Baker provided preliminary and final engineering design and environmental studies for the replacement of Petersburg Bridge, McAlevy’s Bridge No. 1 and McAlevy’s Bridge No. 2. Michael Baker’s environmental services included Level 2 categorical exclusion evaluations, wetland identification and delineation, Phase I archaeological surveys, historic resources surveys, and Phase I environmental site assessments. Design services included field surveys, utilities investigations, roadway design, right-of-way plans, traffic control plans, subsurface investigation, geotechnical engineering, foundation design, hydrologic and hydraulic analyses, structure design, and preparation of final construction plans, specifications and cost estimates.

**Design and Construction-Phase Services for Replacement of the West Maple Avenue Bridge, Bucks County, Pennsylvania.** *Pennsylvania Department of Transportation, District 6-0.* Field Archaeologist. Field crew member. Michael Baker performed preliminary and final design and provided construction-phase services for replacement of the bridge that carries S.R. 0213 (West Maple Avenue) over Neshaminy Creek. Michael Baker’s tasks includes overseeing environmental, geotechnical, hydraulics and hydrology, and utility investigations; preparing permit applications; performing cultural resource investigations; developing replacement bridge designs; preparing traffic control plans; conducting a final constructibility review; preparing construction documents and the construction schedule; and providing construction support services. Michael Baker designed a concrete replacement structure that incorporates an innovative, three-span prefabricated concrete arch system with flared wingwalls. In addition to expediting construction, the concrete arch system reduces future maintenance requirements.
APPENDIX II: AGENCY CORRESPONDENCE
### MEMO

**SUBJECT:** MPMS 81747/SR 1060 Section A20 Salina Bridge (Review of Submission to PHMC Dated 11-25-15), Westmoreland County, District 12-0

<table>
<thead>
<tr>
<th>TO:</th>
<th>FROM:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Troy Pritts, Project Manager; Kimberly Ansell, Environmental Manager (District 12-0)</td>
<td>Angela Jailet-Wentling, Archaeologist BOPD/EPDS (CRP Districts 11-0 and 12-0)</td>
</tr>
</tbody>
</table>

**DATE SENT:** January 4, 2016  
**DATE NEEDED:**

<table>
<thead>
<tr>
<th>PLEASE CALL</th>
<th>APPROVAL</th>
<th>SEE ME</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETURNED YOUR CALL</td>
<td>AS REQUESTED</td>
<td>COMMENT</td>
</tr>
<tr>
<td>X INFORMATION &amp; FILE</td>
<td>PREPARE REPLY</td>
<td>NOTE AND RETURN</td>
</tr>
<tr>
<td>X NECESSARY ACTION</td>
<td>SIGNATURE</td>
<td></td>
</tr>
</tbody>
</table>

Based on the “Salina Bridge Submission to PHMC 11-25-15” draft document prepared by Michael Baker International and received on December 3, 2015, the following comments are forwarded to the District and include archaeological recommendations only. Upon review of the draft document, several issues quickly became apparent. Please refer to the PennDOT Publication No. 689 – *The Transportation Project Development Process: Cultural Resources Handbook* (Revised 2013) for questions regarding procedures for conducting cultural resources survey on behalf of PennDOT and for use in the discussion below.

Firstly, the overall intent of the document – to submit to the Pennsylvania Historical and Museum Commission (PHMC) - is unnecessary. As indicated in Chapter III Early Coordination (PennDOT 2013: III-1-2), project early notification is conducted by the Cultural Resource Professional (CRP) through a form (the Project Early Notification/Scoping Results Form) submitted to the PHMC via the Project PATH system. Project early notification was initiated on December 2, 2015 by PennDOT CRP, David Anthony.

1. Please remove the cover letter and the Project Review Form (not used for PennDOT projects).

The remainder of the document represents a description of the project, definition of the project Area of Potential Effect (APE), background research, results of a geomorphological and pedestrian investigation. All of these activities should be conducted in coordination with the District CRP (PennDOT 2013: VII-23-24); however, none of these activities were conducted in coordination with a qualified CRP. Ms. Susanne Haney, the District 12-0 interim CRP archaeologist at the time of the investigations was not contacted, nor was she notified of the planned investigations. As stipulated in the technical approach, Task 2.2.29,

Baker will conduct a pedestrian reconnaissance of the project area with the District CRP and the Project Geomorphologist to determine current land use, degree of slope, degree of disturbance and the availability of areas suitable for geomorphological testing. The probable location and condition of prehistoric or historic archaeological sites identified during the background research will be assessed and identified, and suspected resources will be plotted on project maps. Documentation will include, where appropriate, field notes, sketches, drawings and color digital photography. Baker will prepare a brief Preliminary Reconnaissance for Archaeological Resources Report.

Baker, with the services of a Geomorphologist, proposes a limited geomorphological investigation...
utilizing hand-placed auger borings. No mechanically assisted excavations are planned. The Project Geomorphologist will prepare an assessment that will show the locations of all subsurface geomorphological tests and stratigraphic soil profiles, discuss the age of soils encountered as well as soil formation processes and make recommendations for additional archaeological studies, if appropriate. This information will be incorporated into the Preliminary Reconnaissance for Archaeological Resources Report to be prepared by Baker.

If the remainder of the document (pages 3-29) is intended as the Preliminary Reconnaissance for Archaeological Resources Report, it falls short of that objective.

   a. Please reformat and resubmit the draft document as a Phase Ia Archaeological Reconnaissance Report based on the standards outlined in the guidelines (PHMC 2008: III-54).
   b. Also, Figures 2-4 should be shown at a higher resolution/smaller scale to show the potential resources within the preliminary APE.

Finally, several areas of concern arose in the review of the contents of the draft document.

3. Please update the project description in the first paragraph to reflect the current project activities under consideration (rehabilitation or replacement).

4. Please clarify that as the project activities are still under consideration an archaeological APE cannot be defined and that the APE defined in the report is preliminary. Once the project design is decided upon and an APE can be defined by the District CRP, further assessment may be required.

5. The background research does not mention the 19th century saltworks located on the southern shore, most likely associated with the Kier family (owners of several prominent saltworks in the region with the son Samuel Kier later building the brickworks on-site), near where the bridge would later be constructed and noted in the Atlas of Westmoreland County, Pennsylvania (Beers 1867). The 1876 New Illustrated Atlas of Westmoreland County (Davis) indicates this same area as belonging to “Kier & Bros,” coinciding with the 1874 construction of the Kier Fire Brick Works.

6. Also, missing from the background research/historical context is the connection between the town of Salina and the Kier Fire Brick Works. The town of Salina grew up as a company town to the Kier Fire Brick Works, an internationally renowned plant known for its use of the first continuous tunnel kilns, owned and operated by Samuel Kier (the entrepreneur credited with developing the process to refine oil) (Wallace 1993). Historical accounts also describe a coal mine within close proximity to the former brickyards that was utilized to power the facilities into the 20th century (Thomas 2013).

7. Please note the presence of several historic architectural resources and their historic resource key numbers identified immediately adjacent to or spanned by the historic Salina Bridge (Key No. 100349) including the Salina Brick Works (Key No. 047503) and the Western Pennsylvania Railroad (Key No. 097496) on the southern bank, and remnants of the Pennsylvania Main Line Canal – Western Division (including the tow path and a bridge abutment) on the northern bank.

8. Page 9, Paragraph 3: “No suitable area for subsurface geomorphological or archaeological testing was identified” is an overly expansive statement and should be clarified to read that “no suitable area for subsurface geomorphological or shovel testing was identified.”

9. Please identify photographs as Photographs not Figures.

10. The well-written geomorphological analysis provides a valuable review of the study area’s potential for prehistoric archaeological deposits and negates the need for archaeological testing to identify intact prehistoric resources. However, the potential for intact historic-era archaeological deposits remains, as indicated by a more detailed review of historical mapping and records.
   a. Please revise the statement on Page 19, Paragraph 13 to read “Because no soils or sediments with the potential to contain intact prehistoric archaeological resources was
encountered within the study area, no testing to detect the presence of prehistoric archaeological resources is recommended.”

b. Please clarify whether the statement on Page 21, Paragraph 2, last sentence pertains to archaeological testing of the potential for prehistoric, historic, or both prehistoric and historic resources.

c. Please clarify whether the statement on Page 21, Paragraph 3, last sentence pertains to archaeological testing of the potential for prehistoric, historic, or both prehistoric and historic resources.

11. Throughout the text there are frequent misspellings of location and family names, please update - as appropriate.

Having reviewed the draft submission, it is clear that further assessment will be required to determine potential for impacts to historic-era archaeological resources within the project APE. Further assessment of the potential intact historic-era cultural resources will be conducted by the PennDOT CRP and PennDOT Highway Archaeological Survey Team (PHAST) to map and record the remnants of the portion of the Western Division of the Pennsylvania Canal in the northern quadrants in an Industrial Resource Form to be submitted to the PHMC. PHAST will also conduct a geophysical survey of the southern quadrants to determine the potential for intact subsurface historic-era cultural resources below the surface disturbances. A report will be produced by PHAST, under the supervision of Central Office and the District CRP, to aid in the continued design of the project.

If you have any questions concerning archaeological resources please contact Angela Jailet-Wentling at 724-415-1901 or e-ajaillet@pa.gov. For matters pertaining to historic structures, contact David Anthony at 412-489-4261 davanthony@pa.gov.

References Cited:

Beers, D.G.

Davis, F. A.

PennDOT

PHMC

Wallace, Kim E.

cc. David Anthony, BOPD/EPDS, Districts 1-0, 11-0, and 12-0
Susanne Haney, BOPD/EPDS, Districts 9-0 and 10-0
APPENDIX III: GEOMORPHOLOGY AUGER PROBE PROFILES
**SOIL PROFILE**
Auger Boring 1, northeast quadrant

<table>
<thead>
<tr>
<th>Horizon/Depth</th>
<th>SOIL COLOR</th>
<th>Texture</th>
<th>Structure</th>
<th>Consistence</th>
<th>Boundary</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA/0-55 cm (0-22 in)</td>
<td>stratified: 10YR 4/3 brown N 2/0 black</td>
<td>lenses of modern sands with coal and cinder fragments</td>
<td>single grained</td>
<td>loose</td>
<td>abrupt</td>
<td>modern coal sands</td>
</tr>
<tr>
<td>AR/55 cm (22 in)</td>
<td>auger refusal on rock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes:** Narrow eroded bench or floodplain landform approximately 1 meter above river water level; modern coal sands over impenetrable rock.
# SOIL PROFILE
Auger Boring 2, northwest quadrant

<table>
<thead>
<tr>
<th>Horizon/Depth</th>
<th>SOIL COLOR</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Matrix</td>
<td>Redox</td>
<td>Texture</td>
<td>Structure</td>
<td>Consistence</td>
</tr>
<tr>
<td>CA/0-22 cm</td>
<td>mixed:</td>
<td></td>
<td>fill, consisting of mixed soil, subsoil, and coal fragments</td>
<td>single grained</td>
<td>loose</td>
</tr>
<tr>
<td>(0-9 in)</td>
<td>10YR 4/3 brown 10YR 4/4 dark yellowish brown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2Bt/22-48 cm+</td>
<td>10YR 4/3 brown</td>
<td></td>
<td>very channery silty clay loam, with 40% sandstone and shale channers</td>
<td>moderate fine subangular blocky</td>
<td>firm</td>
</tr>
<tr>
<td>(9-19 in+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes:** Footslope position, lawn area between above ground pool and High Street; weathered profile of soil forming in weathering sandstone and shale, exhibiting advanced pedologic age, truncated and covered with 22 cm (9 in) of fill. Original surface and upper subsoil is missing.
APPENDIX IV: PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICE ARCHAEOLOGICAL REPORT SUMMARY FORM
THIS PAGE INTENTIONALLY LEFT BLANK
PROJECT CHECKLIST: Please fill out a copy of this checklist and include it with your initial report submission, (including with management summaries or draft reports). This form may be downloaded and expanded as needed, but please do not eliminate any fields.

1. **Report Title** Phase IA Archaeological Evaluation of the Proposed SR 1060 A20 Salina Bridge Project, Bell and Edmon Townships, Westmoreland and Armstrong Counties, Pennsylvania

2. **PI** Kathryn M. Lombardi ( ☒ MA, ☐ PhD) /Firm or Institution Michael Baker International, Inc.

3. **Report Date** (Month/Day/Year) 2/22/2016

4. **Number of Pages** 75

5. **Agency Name** Federal ☐ State ☒

6. **Project Area County/Municipality** (list all)

<table>
<thead>
<tr>
<th>County</th>
<th>Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westmoreland and Armstrong</td>
<td>Bell and Edmon Townships</td>
</tr>
</tbody>
</table>

7. **Project Area Drainage(s)**, (list all)

<table>
<thead>
<tr>
<th>Sub-basin</th>
<th>Watershed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(18) Lower Allegheny River</td>
<td>Watershed C</td>
</tr>
</tbody>
</table>

8. **Project Area Physiographic Zone(s)** (list All) (Use DCNR Map 13 compiled by W.D. Sevon, Fourth Edition, 2000.)

<table>
<thead>
<tr>
<th>Physiographic Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittsburgh Low Plateau Section of the Appalachian Plateaus Physiographic Province</td>
</tr>
</tbody>
</table>

9. **Report Type** (some reports are combinations, check as many as apply to this report)

- ☒ Phase IA/Sensitivity Study
- ☐ Historic Structures
- ☐ Phase I
- ☒ Geomorphology
- ☐ Phase II
- ☒ Determination of Effects
- ☐ Phase III
- ☐ Other ______

10. **Total Project Area** 2.19 hectares
11. **Low Probability/Disturbed Areas** 0.6 hectares = 27% of project area

12. **Phase I Methods used for total project** (check as many as apply)
   - shovel tests, 
   - controlled test units/deep tests,
   - surface survey, 
   - informant interview, 
   - other: pedestrian reconnaissance

13. **Total Number of Sites** Encountered/Phase I 0
    - Total Sites Tested/Phase II ______
    - Total Sites Excavated/Phase III ______

14. **Updated PASS Information:** Please complete an updated PASS form for each site reported by this report. Updated forms need only include the new information and the site number and name.

15. **PASS Site Specific Information:** In addition, the following pages must also be completed for each site. Complete only the portions that pertain to the current report. If the report is a stand-alone Phase II, you do not need to fill in the Phase I methods, since they should have been included in the summary form for the previous report.