A Phase I Archaeological Survey of Three Proposed Bridge Replacement Project Areas on the Fort Knox Military Reservation, Hardin and Meade Counties, Kentucky

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16. Abstract (Limit: 200 words)

In accordance with Executive Order 11593 and other applicable federal laws and regulations a Phase I archaeological survey was conducted in September 1994 of approximately 8.1 ha (20.2 acres) for three proposed bridge replacement areas on the Fort Knox Military Reservation, Hardin and Meade Counties, Kentucky. The survey resulted in the recording of two archaeological sites, 15Hd497 and 15Md382, and revisiting of two previously recorded prehistoric sites, 15Hd170 and 15Hd209. None of the sites is eligible for the National Register, due to previous disturbance. No additional archaeological work is recommended for 15Hd170, 15Hd209, 15Hd497, or 15Md382.

Due to the potential for deeply buried cultural deposits, it is recommended that any machine excavations on the left bank of Mill Creek at Bridge 10, and on the right bank of Otter Creek north of the existing bridge be monitored by a qualified professional archaeologist. Alternatively, test trenches could be excavated in these areas in advance of the bridge construction. The other portions of the Bridge 7, 10, and 12 project areas do not require monitoring of construction excavations.

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ABSTRACT

In September 1994, the Fort Knox cultural resource management staff conducted a Phase I archaeological survey of approximately 8.1 ha (20.2 acres) for three proposed bridge replacement areas on the Fort Knox Military Reservation, Hardin and Meade Counties, Kentucky. The survey resulted in the recording of two archaeological sites, 15Hd497 and 15Md382, and the revisiting of two previously recorded sites, 15Hd170 and 15Hd209.

Site 15Hd497 is a late nineteenth to mid twentieth century historic site with a prehistoric component of indeterminate cultural-temporal affiliation. Sites 15Hd170, 15Hd209, and 15Md382 are prehistoric sites of indeterminate cultural-temporal affiliation. None of the sites is eligible for the National Register, due to previous disturbance. No additional archaeological work is recommended for 15Hd170, 15Hd209, 15Hd497, or 15Md382.

Due to the potential for deeply buried cultural deposits, it is recommended that any machine excavations on the left bank of Mill Creek at Bridge 10, and on the right bank of Otter Creek north of the existing bridge be monitored by a qualified professional archaeologist. Alternatively, test trenches could be excavated in these areas in advance of the bridge construction. The other portions of the Bridge 7, 10, and 12 project areas have no potential or very low potential for buried archaeological sites and do not require monitoring of construction excavations.

It is recommended that the bridges be replaced as proposed.

MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations a Phase I archaeological survey was conducted in September 1994 of approximately 8.1 ha (20.2 acres) for three proposed bridge replacement areas on the Fort Knox Military Reservation, Hardin and Meade Counties, Kentucky. The survey resulted in the recording of two archaeological sites, 15Hd497 and 15Md382, and revisiting of two previously recorded prehistoric sites, 15Hd170 and 15Hd209. None of the sites is eligible for the National Register, due to previous disturbance. No additional archaeological work is recommended for 15Hd170, 15Hd209, 15Hd497, or 15Md382.

Due to the potential for deeply buried cultural deposits, it is recommended that any machine excavations on the left bank of Mill Creek at Bridge 10, and on the right bank of Otter Creek north of the existing bridge be monitored by a qualified professional archaeologist. Alternatively, test trenches could be excavated in these areas in advance of the bridge construction. The other portions of the Bridge 7, 10, and 12 project areas do not require monitoring of construction excavations.

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I. INTRODUCTION

In September 1994, the Fort Knox Cultural Resource Management (CRM) staff performed a Phase I cultural resources survey of three proposed bridge replacement areas, including the reexamination of two nearby previously reported sites at Fort Knox, Hardin and Meade Counties, Kentucky (Figures 1-3). The areas surveyed encompass 8.1 ha or 20.2 acres. The Bridge 7 project area is located in Hunting Areas 77 and 78, around the present bridge across Mill Creek on Seventh Armored Division Road north of Mill Creek's confluence with the Douglas Branch. Previously reported site 15Hd209 is on a hillside east of the bridge, and it was reexamined. The Bridge 10 project area is located in Hunting Areas 58 and 59, around the present bridge over Mill Creek on Main Range Road south of the junction of Main Range Road and Porter River Road. Previously reported site 15Hd170 is in a former grenade range on a hill to the south of the bridge, and it was revisited. The Bridge 12 project area is located in Hunting Areas 10 and 11, around the present Twin Bridges over Otter Creek on Twin Bridge Road.

The archaeological survey and literature review conducted in preparation for the bridge replacements were required to comply with the National Environmental Protection Act, or NEPA (Public Law 91-190), the Historic Preservation Act of 1966, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40.

During 1993, the Fort Knox Staff Archaeologist obtained all the documents necessary to perform Phase I literature searches for the installation (e.g., site forms, reports of previous investigations, historic maps), and these are on file at the Cultural Resource Management Branch of the Directorate of Public Works, Fort Knox. No file check was made with the Office of State Archaeology and the Kentucky Heritage Council specifically for this project.

A literature search revealed that the proposed bridge replacement areas along Mill Creek (Bridges 7 and 10) had not been surveyed previously on the left (west) bank, and that the project area along Otter Creek (Bridge 12) had not been previously surveyed. All of the project areas were field inspected in the current study, and the adjacent reported sites, although outside the actual project areas, were re-examined.

The project areas are located in the Plain section of the Pennyrile cultural landscape. The Bridge 7 project area is in the floodplain of Mill Creek as it passes through the strongly dissected ridge and valley region at elevations of 600 to 660 feet. The Bridge 10 project area is the flood-

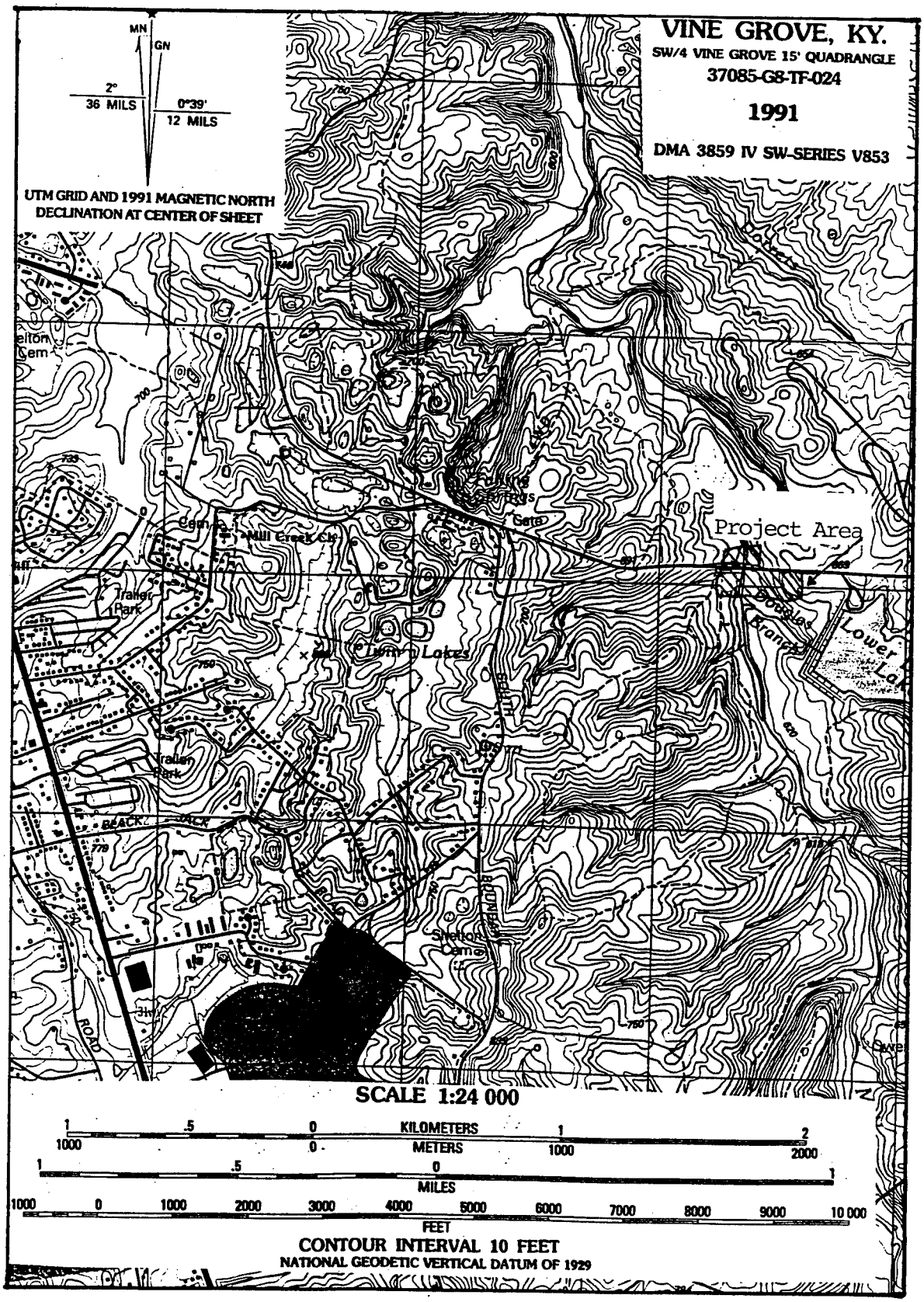

Figure 1. Location of Bridge 7 Project Area.

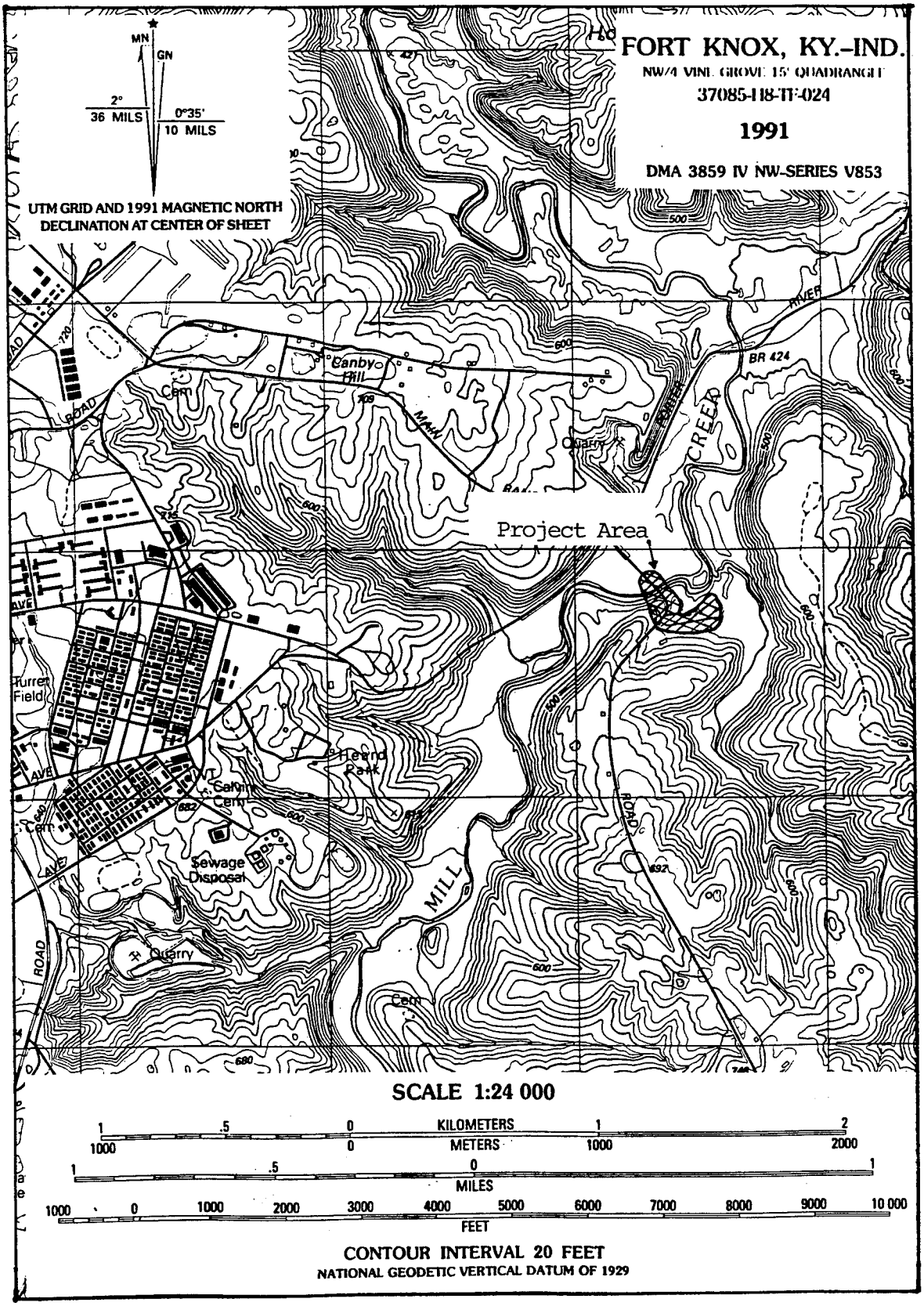

Figure 2. Location of Bridge 10 Project Area.

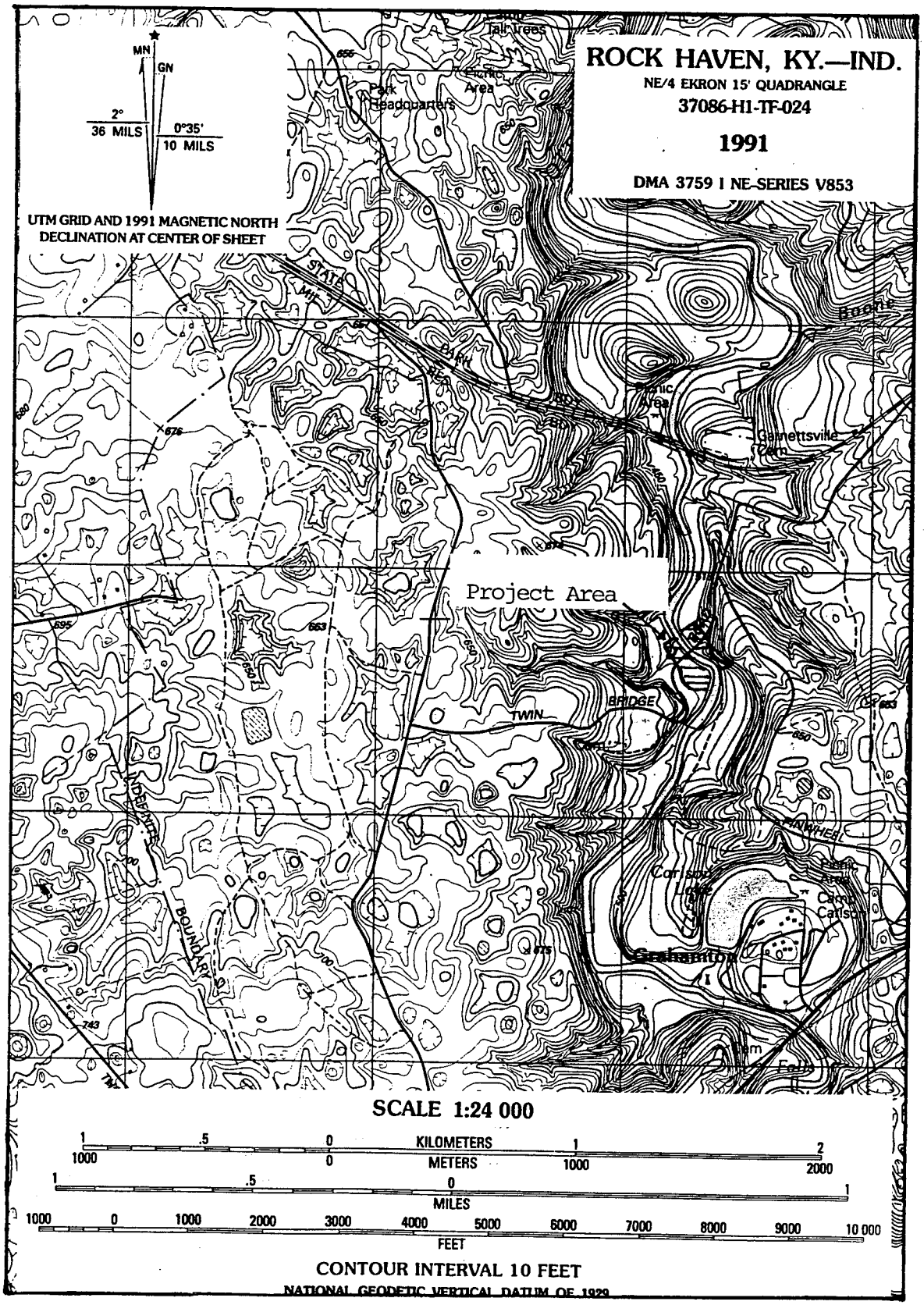

Figure 3. Location of Bridge 12 Project Area.

plain of Mill Creek as it dissects the ridge and valley region at elevations of 420 to 460 feet. The Bridge 12 project area is in the floodplain of Otter Creek as it passes through the karst uplands at elevations of 450 to 470 feet. Soils in the project area are classified as Crider-Vertrees soil association (U.S.D.A. 1975).

The surface reconnaissance of the project areas was performed by the CRM staff (Pamela Schenian and Stephen Mocas) on September 7 and 22, 1994, and the shovel probing of 15Hd497 and 15Md382 was performed on September 14, 1994. Explosive Ordnance Device (EOD) personnel (Sgt. Tewell and Sgt. Clarke?) accompanied the CRM staff on the survey of the Bridge 10 project area and reexamination of 15Hd170. A total of 19.0 person hours (excluding EOD personnel time) were spent in the survey and testing of the proposed bridge replacement areas.

No deep testing was conducted of floodplain areas, because the Fort Knox CRM program lacks the funding mechanisms to arrange for heavy machinery work. Shovel testing was forbidden on the east bank of the Bridge 10 project area due to the possibility of grenades.

The artifacts from the survey were washed and catalogued by student assistants at the University of Louisville Program of Archaeology. The artifacts were analyzed by the Staff Archaeologist and Assistant Staff Archaeologist. The artifacts and the documentation for this project will be curated at the Program of Archaeology, University of Louisville, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of the documentation will be stored at the Directorate of Public Works (DPW), U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky.

II. SETTING AND ENVIRONMENTAL BACKGROUND

O'Malley et al. (1980) have prepared a detailed description of the setting and environmental background of the Fort Knox base as a whole. This section will concentrate on the topographic characteristics of the scheduled bridge replacement areas inspected in the current study.

The project area lies in the Mississippian Plateau physiographic region of Kentucky (McGrain and Currens 1978:35). The proposed Bridge 7 and Bridge 10 project areas are in and directly adjacent to the floodplain of Mill Creek, in the strongly dissected ridge and valley portion of the base. The proposed Bridge 12 project area is in and adjacent to the floodplain of Otter Creek in the karst zone. Drainage and the principal water source in the project areas is pro-

vided by Mill Creek or Otter Creek. Both the newly recorded sites are on stream banks. Site 15Hd497 is on the bank of Mill Creek and 15Md382 is in the floodplain of Otter Creek. The previously recorded sites are located on the hill slopes above Mill Creek.

Soils in the project area are classified as Crider-Vertrees soil association (U.S.D.A. 1975). The soil type on 15Hd497 is Elk silt loam, and on 15Md382 the soil type is Huntington silt loam. The soil on 15Hd170 is Markland silty clay, and the soil on 15Hd209 is Caneyville-Rock outcrop complex.

Each of the proposed bridge replacement areas was examined for a minimum distance of 50 m in all directions from the present bridge, and adjacent areas which could potentially be impacted by construction activities were also surveyed. Areas that could potentially contain buried cultural deposits were located northwest of the present Bridge 10 and to the northeast of Bridge 12. These areas are recommended for monitoring during construction or deep testing prior to construction. Previously reported sites adjacent to the Bridge 7 and Bridge 10 project areas also were examined.

III. PREVIOUS RESEARCH

Approximately 30,000 acres of the Fort Knox installation have been surveyed, primarily in cultural resource management (CRM) studies. Schenian and Mocas (1994) summarize the archaeological studies conducted on or near the installation through August 1994. This section will focus on the previous research conducted within a 2 km radius of the current project areas.

Within 2 km of Bridge 7, O'Malley et al. (1980) surveyed one-quarter of each Hunting Area 77-79, and Schenian and Mocas (1992) surveyed two areas (one of 15 acres and one of 92 acres in Hunting Area 77. The O'Malley et al. survey area in Hunting Area 78 encompassed the current project area east of the bridge. O'Malley et al. recorded 15Hd209 approximately 200 m east of and uphill from the existing bridge. The remaining sites are 400 m or more distant.

Within 2 km of Bridge 10, O'Malley et al. (1980) surveyed one-quarter of Hunting Area 54-60, and 63, and Hemberger (1991) surveyed 16 acres in Hunting Area 54. The O'Malley et al. survey area in Hunting Area 59 encompassed the portion of the current project area east of the bridge. Site 15Hd170 was recorded 100 m southeast and 15Hd187 was recorded 150 m northeast of the existing bridge. A number of other sites were recorded in the O'Malley et al. survey areas, but the next nearest is 800 m distant.

Within 2 km of Bridge 12, McGraw (1976) surveyed 14 acres in the realignment corridor for Highway 60 in Hunting Areas 9, 11, and 12; O'Malley et al. (1980) surveyed one-quarter of each Hunting Area 8-11; Schenian and Mocas (1992) surveyed 74 acres in Hunting Area 13; Schenian and Mocas (1993) surveyed 38 acres in Hunting Areas 8 and 9; and Schenian and Mocas (1994) surveyed 310 acres in Hunting Area 10 and 11. None of these projects included the current project area. Hale (1981) surveyed Otter Creek Park. These projects recorded dozens of sites within 2 km of the current project area, but the nearest, 15Md181, is 500 m distant.

No standing structures listed on or eligible for listing on the National Register of Historic Places are located in or within view of the current project areas, and no unassessed structures greater than 50 years old are located in or near the project areas. The existing bridges are the only structures in or near the project areas, and these are all of post-1940 construction. No archaeological sites listed on the National Register are known to be located in or immediately adjacent to the current project area, although many of the sites recorded on the base must be assumed to be potentially eligible for the National Register because they have not been adequately documented to be not eligible.

IV. SURVEY PREDICTIONS

Based on previous archaeological research in the area, the history of settlement, and the environmental setting of the project area, the following results were expected:

1) The historic property boundaries and former structure locations are depicted on the 1919 land acquisition maps. The land acquisition maps from the 1940's, depict the property boundaries, but not specific structural locations. The Bridge 10 project area was acquired in 1919. The area east of the bridge and south of Mill Creek was owned by Walter Smith and has a high potential for a historic site. The remainder of the Bridge 10 project area was owned by Fannie Harrison and has a low potential for historic sites, since the several known structure clusters on her property are located 300 m or more from the bridge. The portion of the Bridge 12 project area east of Otter Creek was acquired in 1919, and the area west of Otter Creek was acquired in the 1940's. One historic property formed each half of this project area. The property acquired in 1919 had no standing structures in the vicinity of the bridge. The Bridge 7 project area was not acquired until the 1940's, and comprises portions of five historic properties. Since information

about the locations of structures at the time of acquisition is lacking for the 1940's acquisitions, there was considered a moderate potential for historic resources based on this portion of the archival research.

2) All of the project areas include floodplain, terraces, and hill sides. The hill tops and gentler slopes were considered to have a high potential for archaeological sites, especially in the Otter Creek drainage. The steep hill slopes and bluff faces had a moderate potential for rock shelters but a low potential for other types of sites. The floodplain and terraces had a high potential for prehistoric sites.

3) Because all three project areas contained existing bridges and roads, some disturbance due to previous construction and due to military activities related to the use of these structures was expected.

V. FIELD METHODS

In general, the project areas were systematically walked in transects at paced 10 m intervals for a radius of at least 50 m from the existing bridge in each direction. The exception to this was the northwest quadrant of the Bridge 12 project area, which was determined, by inspection from the existing bridge, to have been previously disturbed by borrowing for the construction of the existing bridge and of areas which were too steep to be suitable for human occupation.

In the Bridge 7 project area, the area south of the bridge and west of Mill Creek is former tank training area in scrub growth consisting of mixed cedars and deciduous trees, most less than 20 years old, with spindly weeds and sparse fallen leaves. A wide, deeply eroded, tank trail formed the west boundary of the project area and narrower tank trails formed the south boundary and circled the upper bank of Mill Creek, providing areas with 100 percent ground surface visibility. The remainder of the area had variable ground surface visibility which averaged approximately 50 percent. Numerous small bulldozer piles were present along the upper bank of Mill Creek. The creek bank was also examined. Between September 7 and September 14 someone conveniently drove a tracked vehicle through what had been the densest area of weeds, eradicating the vegetation and churning up the top few centimeters of soil. This newly opened area was reinspected for cultural materials.

The area north of Bridge 7 and west of Mill Creek was bounded to the west by a wide tank trail with 100 percent visibility. The remainder of this side was wooded in young scrub growth, and had extensive ruts and bulldozer piles. This area appeared to have borrowed to some extent during the construction of the existing bridge and on an adjoining tank crossing. The creek cutbank also was examined for the length of the project area.

The area north of Bridge 7 and east of Mill Creek consisted of a very narrow (less than 15 m wide) level area adjoined by a steep hill slope. This area was wooded with moderate fallen leaf cover. Ground surface visibility was approximately 50 percent, due to numerous animal paths. A portion of the low creek bank was examined.

The area south of Bridge 7 and immediately east of Mill Creek was wooded with generally dense vines and briars. A portion of the creek cutbank was inspected. Two transects walked parallel to the creek and two perpendicular to the creek were sufficient to determine that this area had been extensively borrowed during the construction of the existing bridge as well as extensively disturbed by tank training. The lower slope of the adjoining hill side was in deciduous woods with dense leaf cover, while the upper slope was in the vegetation typical of disturbed or early succession stages of limestone glades, i.e., small cedars, mosses, and spindly weeds growing on weathered limestone. The boundary of the deciduous woods with the limestone glade species was criss-crossed with deep, narrow, vine-covered ravines, one of which tried to eat the Principal Investigator. Even in the densely vegetated portions of the hill side, it was possible to determine by walkover that there was little or no soil above the subsoil or bedrock in this area.

At Bridge 10, the area west of the bridge and south of Mill Creek consisted of a narrow hill slope leading to a limestone bluff face. One transect through this area was sufficient to determine that the slope was covered by rubble fill from the earlier bridge construction mixed with eroded limestone detritus from the bluff.

The area east of Bridge 10 and south of Mill Creek rises steeply southward from the creek. The area immediately adjacent to Main Range Road was in short mowed grass, with approximately 25 percent ground visibility. Examination of available open patches in the grass indicated that this area had been graded to subsoil during the construction of the existing bridge and the installation of overhead utility lines. Approximately 100 m from the creek is a broad generally level area forming a foothill which parallels the creek. Site 15Hd170 is located on this foothill, in a former grenade range. The grenade range was in dense grass, with ground surface visibility limited primarily to target mounds. Due to the likelihood of unexploded grenades, shovel

testing was prohibited. Surface observation was sufficient, however, to determine that the ground surface had been extensively altered and that there was little or no potential for intact cultural deposits associated with 15Hd170.

The area north of Bridge 10 and Otter Creek is part of a broad floodplain. According to the EOD specialists, several feet of fill had been added to this area in the past decade to build up the creek bank. This was done to create a dry, level staging area at the bank, which forms the boundary of the training ranges, and to discourage people from driving tanks through Mill Creek by creating a vertical bank. Two transects through this area was sufficient to determine that the ground surface was completely covered by artificial clay and gravel fill.

In the previous research section, it was mentioned that site 15Hd187 was recorded 150 m northeast of Bridge 10. This site was not reexamined both because the topography of the project area guarantees that no impact could be made to 15Hd187 as a result of the bridge replacement, and because it lies more deeply within the grenade range.

In the Bridge 12 project area, the area north of the bridge and west of Otter Creek was examined from the bridge. This examination indicated that the area nearest the bridge had been deeply borrowed for fill during the construction of the existing bridge and that the remainder consisted of steep slopes unsuitable for human habitation.

The area south of the bridge and west of Otter Creek was a broad floodplain almost completely devoid of vegetation. With the exception of two islands of topsoil and vegetation, there was no vegetation and the area had been borrowed to subsoil and/or deeply eroded by vehicle training exercises. The west margin of the project area had a patch of spindly weeds, with 50 percent ground surface visibility, but subsoil was present at the ground surface. Up to 40 cm of topsoil (but more typically 20 cm or less) remained in the islands of vegetation, but evidence of vehicle training and other disturbance was present in the form of deep ruts, even in the vegetated areas.

The area south of the bridge and east of Otter Creek rose steeply from the creek. One transect was walked along the low bluff face which adjoins the creek. A long, narrow rock overhang is present in this bluff face. Although it would be suitable for human habitation, it is obviously scoured out during floods, since the water line overlaps the rockshelter dripline even in drier seasons and there was no soil development under the overhang. The floor, walls, shelves, and ceiling of the rockshelter were examined, but no evidence was found of cultural materials or rock art. A narrow level area lies above the rockshelter. This area was

walked. East of the ledge, is steep bluff face which had no apparent rockshelters.

The area north of the bridge and east of Otter Creek consists of a floodplain covered in scrub vegetation. Several vehicle paths traversed the area, however, providing 100 percent ground surface visibility in the tire ruts.

The survey resulted in the discovery of archaeological materials at four locations. When artifacts were discovered at the two previously recorded sites and at the newly recorded sites, the area around the finds was walked at 2 to 5 m intervals until no additional materials were observed for a distance of at least 20 m from the previous find.

Shovel tests were excavated only on sites 15Hd497 and 15Md382. Site 15Hd209, and the hill side around it, was eroded to weathered bedrock, so there was no potential for subsurface deposits. Site 15Hd170 was located in an old grenade range, so shovel testing was forbidden (and surface inspection indicated that the area had been so extensively disturbed that shovel testing was unnecessary). Each shovel probe was approximately 30 cm square and excavated to a depth of 30 cm or until sterile subsoil was encountered. The walls of each STP were scraped and inspected for evidence of archaeological materials or deposits. The fill from the shovel probes was screened through one-quarter inch hardware cloth prior to backfilling of the shovel tests.

In summary, the archaeological investigation of the proposed bridge replacement project areas resulted in the recording of 15Hd497 and revisiting of 15Hd209 near Bridge 7, the revisiting of 15Hd170 near Bridge 10, and the recording of 15Md382 near Bridge 12. These sites and the materials collected from them will be described in greater detail in the following sections.

VI. ARTIFACT TYPOLOGY AND MATERIALS RECOVERED

The following paragraphs summarize the artifact typologies used in the sorting and analysis of the artifacts. The total number of artifacts collected from each site is broken down by prehistoric artifacts and historic artifacts in Table 1.

Prehistoric Artifact Typology

Biface

A biface is a chipped stone tool which has had flakes removed from two opposite sides along one or more edges.

Table 1. Artifact Inventory.

	15Hd170	15Hd209	15Hd497	15Md382	TOTAL
PREHISTORIC ARTIFACTS					
Biface	0	0	0	2	2
Unutilized debitage					
Secondary flake	0	2	0	1	3
Tertiary flake	0	1	11	2	14
Chert shatter	1	1	6	3	11
TOTAL PREHISTORIC	**1**	**4**	**17**	**8**	**30**
HISTORIC ARTIFACTS					
KITCHEN GROUP					
Ceramic					
Ironstone, white	0	0	1	0	0
Porcelain	0	0	1	0	0
Glass, bottle					
Aqua	0	0	1	0	0
Green	0	0	1	0	0
Metal					
Enameled handle	0	0	1	0	0
Kitchen Group Total	**0**	**0**	**5**	**0**	**0**
ARCHITECTURAL GROUP					
Brick	0	0	1	0	0
Glass, flat (window)					
Green	0	0	3	0	0
Architectural Group Total	**0**	**0**	**4**	**0**	**0**
TOTAL HISTORIC	**0**	**0**	**9**	**0**	**9**
ARTIFACT TOTAL	**1**	**4**	**26**	**8**	**39**

There is considerable variety in the size, shape, and precision of chipping of bifaces. A fragment of a large biface, broken in an early stage of manufacture, and a lateral fragment of a small biface, broken in a late stage of manufacture or resharpening, were recovered from 15Md382 (Figure 4).

Chert debitage

Chert debitage is a catchall category used to describe the material generally created as a by-product in the manufacture of more formally defined chipped stone tools. Chert debitage may be further divided into the categories of flakes, blocky chert pieces, and chert shatter. It may also be classified by stage of manufacture and by evidence for use as an informal, or expedient, tool. The following criteria have been applied to sort the chert debitage collected in this study:

1) Flakes are defined by the presence of a striking platform and bulb of percussion. Concentric rings or ripple marks on the ventral surface, and feather terminations may also be present. Flakes are classified as primary flakes if 90 percent or more of the dorsal surface (the side opposite the bulb of percussion) is covered by cortex or rind; as secondary flakes if one to 90 percent of the dorsal surface is covered by cortex; and as tertiary flakes if no cortex is present on the dorsal surface.

2) A chert piece is classified as shatter if it is a flat, generally small, piece exhibiting some flake-like characteristics, but is insufficiently complete to classify the piece as a primary, secondary or tertiary flake.

3) A blocky chert piece is an angular chert piece lacking flake-like characteristics, and lacking evidence of having served as a core.

4) A piece of chert debitage is classified as utilized if at least three contiguous small flakes have been removed from one or more edges by use rather than retouch.

5) A piece of chert debitage is classified as unutilized if it exhibits no evidence of the removal of small flakes through use.

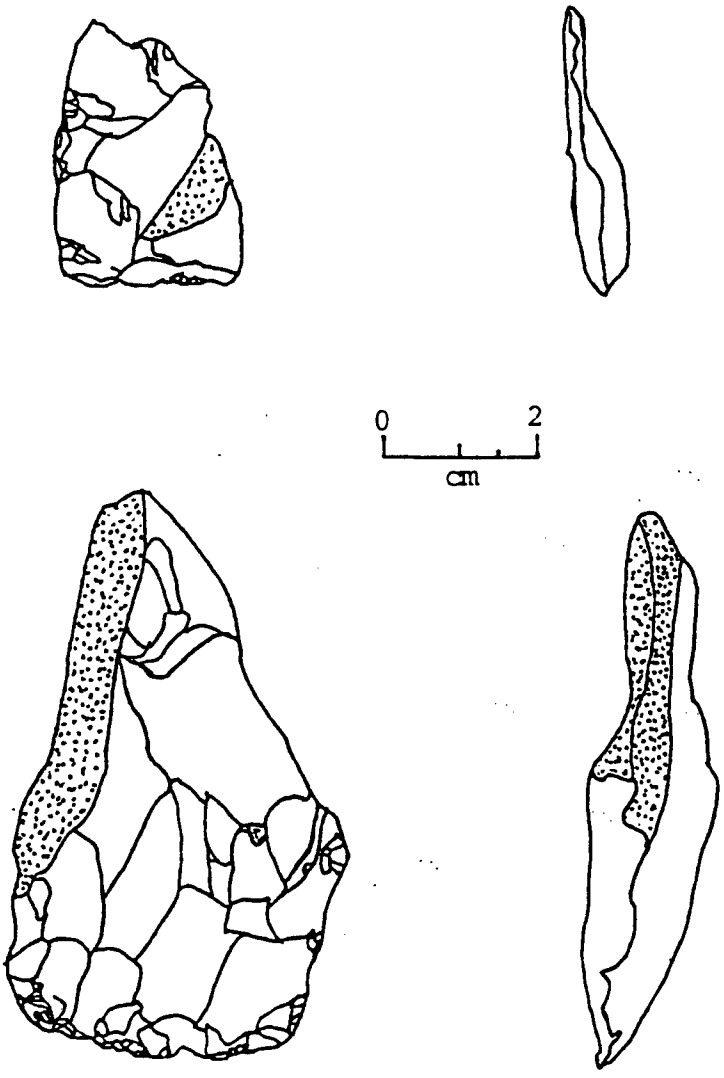

Figure 4. Biface Fragments from 15Md382.

Historic Artifact Typology

Maples (1991) was used to sort the historic artifacts recovered in this project. The following paragraphs summarize the artifact typologies used in the sorting and analysis of the artifacts recovered during this project, and describe specific artifacts in greater detail.

South (1977:95-95) defined a system of artifact classification based on function. Under South's system, for example, ceramics and curved glass are kitchen group artifacts and flat glass and spikes are architectural group artifacts.

In addition to the artifacts described below and listed in Table 1, a portion of a brick wall, with cement mortar, was observed in a backdirt pile along the creek bank, but not collected. It is believed that this was part of a well wall.

KITCHEN GROUP

Ceramics

Historic ceramics are divided into coarse earthenware, stoneware, ironstone, refined earthenware, semi-porcelain, and porcelain. Coarse and refined earthenware have the most porous paste, stoneware and ironstone have less porous paste, and semi-porcelain and porcelain have the least porous paste. Each of these broad categories is further divided into more specific types based on paste texture and color, glaze characteristics, and decoration (Maples 1991).

Ironstone. One white paste ironstone sherd was collected from 15Hd497. Ironstone dates from 1860 to 1920 (Ketchum 1983:201).

Porcelain. One porcelain sherd was recovered from 15Hd497.

Glass

Glass kitchen artifacts are divided into three main categories. These are bottles, dishware, and canning jar lid liners. No lid liners or dishware were found in this project, but two bottle glass fragments were recovered from 15Hd497. One is aqua and one is green. Both are unlettered body fragments.

Metal

One white enameled metal handle segment was recovered. It is probably from a covered cooking pot.

ARCHITECTURE

Brick

In addition to the brick wall segment observed on 15Hd497 and discussed above, two brick fragments were observed and collected from site 15Hd497.

Flat (window) glass

Three pieces of green flat glass were recovered from site 15Hd497.

VII. CULTURAL RESOURCES

15Hd170

Site 15Hd170 is a prehistoric lithic scatter of indeterminate cultural-temporal affiliation (Figures B-1 and B-4). It is located in the McKie grenade and small arms range. The site is at an elevation of 450 feet on the north slope of a broad foothill overlooking Mill Creek. Mill Creek is approximately 100 m north of the site. One piece of chert debitage was collected from a target berm in an obviously disturbed context. Ground surface visibility was less than 50 percent in most of the area because of grass cover. Despite the grass cover, it was obvious that construction of the grenade range had resulted in considerable modification of the ground surface. These activities include ditching, borrowing, grading, installation of underground cables, and construction of target berms and a road. Grenade and other ordnance explosions also have caused soil disturbance and small fires.

Site 15Hd170 is not eligible for the National Register, because it has been completely destroyed by the construction of the McKie range. No additional archaeological work is recommended at 15Hd170.

15Hd209

Site 15Hd209 is a small lithic scatter of indeterminate prehistoric temporal-cultural affiliation (Figures B-2 and B-5). The site is located on the relatively steep west slope

of a ridge overlooking the juncture of Douglas Branch and Mill Creek, which lies approximately 200 m west and downslope from the site. The site is at an elevation of approximately 660 feet. Four pieces of chert debitage were collected over a 20 m diameter area. The site is at the west edge of the area borrowed for construction of the dam at nearby Lower Douglas Lake. The ground surface has been eroded and deflated to bedrock by wheeled and track vehicles. Ground surface visibility was approximately 50 to 100 percent. The ridge slope is vegetated with species typical of disturbed or early stage limestone glades--small cedars, moss, and spindly weeds.

Site 15Hd209 is not eligible for the National Register, because there is no potential for intact deposits. The site has been deflated and eroded to bedrock by borrowing for construction of Lower Douglas Lake and by military activities. Even prior to military use of this hill, the soils would have been thin and subject to severe erosion if stabilizing vegetation was removed. No additional archaeological work is recommended for 15Hd209.

15Hd497

Site 15Hd497, the Ora May Atcher Site, consists of a late nineteenth to mid twentieth century farmstead and a prehistoric site of indeterminate cultural-temporal affiliation (Figures B-2, B-6, and B-8). The site is located on a narrow level area above Mill Creek, near the juncture of Mill Creek and Douglas Branch, at an elevation of 610 feet. Prehistoric materials were recovered from a 80 m (north-south) by 50 m area, and historic materials were concentrated in a 20 m (north-south) by 20 m area at the north end of the site. The historic area of the site had been bulldozed--bulldozer piles lined the bank along Mill Creek, and structural debris (a brick wall segment) was observed protruding from one of these piles 20 m east of the concentration of historic materials. At the time of Army acquisition in the early 1940's, the site was on the property of Ora May Atcher, and the historic materials collected probably derive from her farmstead. The prehistoric cultural material consisted of small to very small tertiary flakes and shatter, possibly indicating a short term habitation.

Site 15Hd497 is not eligible for the National Register, because it has been deflated and eroded to subsoil by tank training. The historic portion of the site had been bulldozed. No evidence was found of intact or potentially intact cultural deposits.

15Md382

Site 15Md382 is located on a slight rise on the Otter Creek floodplain, at an elevation of 455 feet and approximately 30 m from Otter Creek (Figures B-3, B-7, and B-8). Two biface fragments and several pieces of chert debitage were found in a 20 m by 30 m area. Ground surface visibility was 100 percent in tank trails, 50 percent in an area of spindly weeds, and approximately 25 percent in two small wooded areas. The wooded areas had some intact topsoil, but had evidence of previous vehicle training, so possible intact areas were small and disjoint. Bulldozer piles were present at the edge of one of the wooded areas and in the area of spindly weeds at the west side of the site.

Site 15Md382 is not eligible for the National Register. Most of the site has been deflated to subsoil by wheeled vehicles and tanks and portions of the site have been bulldozed. Examination of the cutbanks of the vehicle trail and shovel tests in the small wooded areas of the site indicate that there is no more than 40 cm of soil above a gravel layer in this location, and considerably less in most areas adjoining the site, so there is little or no potential for buried deposits. No additional archaeological work is recommended for 15Md382.

VIII. CONCLUSIONS AND RECOMMENDATIONS

The Phase I archaeological investigation of three proposed bridge replacement project areas on the Fort Knox Military Reservation, Hardin and Meade Counties, Kentucky. The survey resulted in the recording of two archaeological sites, 15Hd497 and 15Md382, and the revisiting of two previously recorded sites, 15Hd170 and 15Hd209.

Site 15Hd497 is a late nineteenth to mid twentieth century historic site with a prehistoric component of indeterminate cultural-temporal affiliation. Sites 15Hd170, 15Hd209, and 15Md382 are prehistoric sites of indeterminate cultural-temporal affiliation. None of the sites is eligible for the National Register due to previous disturbance. No additional archaeological work is recommended for 15Hd170, 15Hd209, 15Hd497, or 15Md382.

No evidence was found of the Walter Smith farmstead, known to have been located in the portion of the Bridge 10 project area south of Mill Creek and east of Main Range Road. Either this known historic farmstead did not translate into an archaeological site, or else the site has been completely destroyed by construction and military activities.

Due to the potential for deeply buried cultural deposits, it is recommended that any machine excavations on the left bank of Mill Creek at Bridge 10 (Figure 5), and on the right bank of Otter Creek north of the existing Bridge 12 (Figure 6) be monitored by a qualified professional archaeologist. Alternatively, test trenches could be excavated in these area in advance of the bridge construction. The other portions of the Bridge 7, 10, and 12 project areas have no potential or very low potential for buried archaeological sites and do not require monitoring of construction excavations.

It is recommended that the bridges be replaced as proposed. If archaeological materials are discovered during the construction activities, all activity in the vicinity of the finds must cease and the State Historic Preservation Officer (502-564-6661) and the DPW staff archaeologist (502-624-6581) should be contacted, so a representative of those agencies may evaluate the materials. Also, if human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

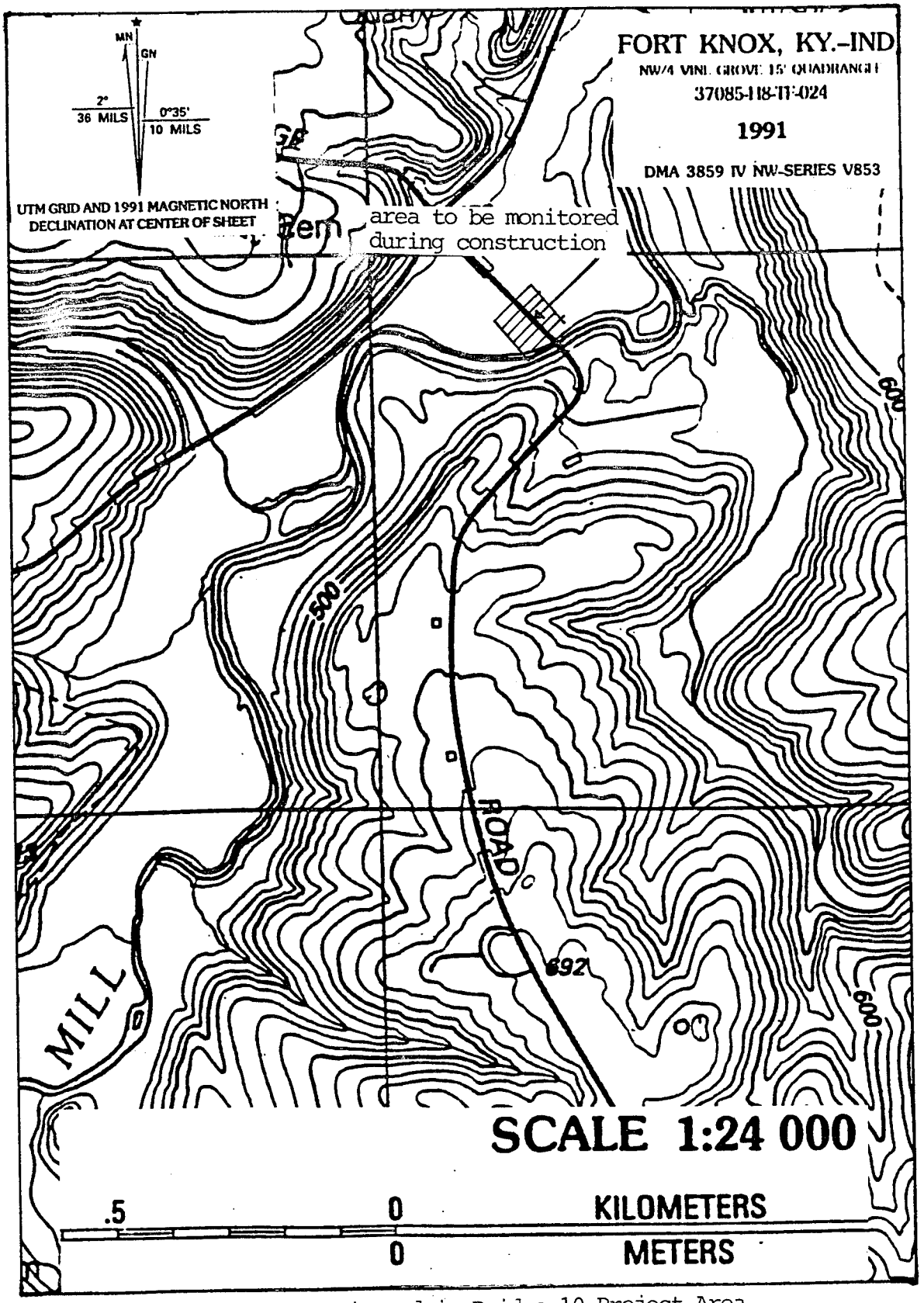

Figure 5. Area to be Monitored in Bridge 10 Project Area.

Figure 6. Area to be Monitored in Bridge 12 Project Area.

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1991c Vine Grove, Kentucky, 7.5 Minute Topographic Quadrangle.

APPENDIX A.

RESUMES OF KEY PERSONNEL

Pamela A. Schenian
Staff Archaeologist and Project Principal Investigator

Office Address: Directorate of Public Works
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Phone: (502) 624-6581

Date and Place of Birth: January 1, 1959; Waukesha, WI.

Present Position: J.M. Waller & Associates/Fort Knox Staff Archaeologist and Cultural Resource Manager

Education:
A.B.D. in Anthropology, Northwestern University, 1984.
M.A. in Anthropology, Northwestern University, 1982.
A.B. in Anthropology, Bryn Mawr College, 1980.

Previous Employment:

Senior Staff Archeologist, Archeology Service Center, Department of Sociology, Anthropology, and Social Work, Murray State University, Murray, KY, November 1991-June 1993; Staff Archeologist, November 1983-November 1991.

Southern Illinois University, Carbondale, IL: Field Technician, November-December 1985, September-October 1984.

Illinois State Museum Society, Springfield, IL: Field Assistant II (Supervisor), summer 1983; Field Technician, summer 1981.

Center for American Archeology, Kampsville, IL: Field Technician, summer 1982.

Department of Anthropology, Northwestern University, Evanston, IL: Teaching Assistant, 1981-82 academic year.

Great Lakes Archeological Research Center, Milwaukee, WI: Field Technician, summer 1979.

Field Research Experience:

Prehistoric and historic archaeological projects in the states of Illinois, Indiana, Kentucky, New Jersey, South Dakota, Tennessee, and Wisconsin, 1979-present.

Professional Publications, Reports, Papers and Manuscripts:
88 CRM contract reports on projects in Indiana, Kentucky, and Tennessee.
1 Homocide site excavation contract report prepared in lieu of court testimony in Illinois.
7 Papers presented at professional conferences.
5 Publications, 1 in press.
Doctoral candidacy qualifying paper: "A Theory of Individual Style Variation for Archeological Studies".
Manuscript submitted in partial fulfillment of the M.A. requirements: "Models of Environmental-Cultural Relationships: Testing with Archeological Evidence".

Stephen T. Mocas
Assistant Staff Archaeologist

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Present Position: University of Louisville Program of Archaeology/Fort Knox Assistant Staff Archaeologist

Education:

Completed one year of doctoral program, Southern Illinois University, Carbondale, Illinois, 1972.

B.A. in Anthropology, University of Louisville, 1971.

Previous Employment:

Indiana University, Bloomington, Indiana: Staff Archaeologist, September 1991-November 1993.

Murray State University, Murray Kentucky: Staff Archaeologist, November 1991-November 1993.

Jefferson Community College, Louisville, Kentucky. Anthropology Instructor, August 1981-December 1982.

Louisville School of Art, Louisville, Kentucky: Anthropology Instructor, January-May 1976.

University of Louisville Archaeological Survey, Louisville, Kentucky. Project Director, Field Supervisor, or Research Assistant on various projects, July 1969-January 1977.

State University of New York of Buffalo, Buffalo, New York. Senior Field Worker, June-August 1970.

Field Research Experience:

Field experience, Phase I-III, prehistoric and historic archaeological projects in the states of Illinois, Indiana, Kentucky, New York, and Tennessee, 1969-present.

Research Grants:

Six grants for fieldwork and research.

Professional Publications, Reports, Papers and Manuscripts:

3 non-contract site reports on projects
20 CRM contract reports on projects
5 Chapters in additional site reports.
4 Publications, 1 in press.

APPENDIX B.

LOCATION OF CULTURAL RESOURCES