APPENDIX D

Archeological Investigation

Phase 1 Archaeological Investigation and
Phase II Site Evaluation

HARTGEN
archeological associates inc

PHASE I ARCHEOLOGICAL INVESTIGATION AND PHASE II SITE EVALUATION

Greene County Public Facilities

US Route 9W
Town of Coxsackie
Greene County, New York

HAA # 4907-31 & 41
OPRHP # 16PR02420

Submitted to:
Delaware Engineering, D.P.C.
28 Madison Avenue Extension
Albany, New York 12203

Prepared by:
Hartgen Archeological Associates, Inc.
1744 Washington Avenue Ext.
Rensselaer, New York 12144
p +1 518 283 0534
f +1 518 283 6276
e hartgen@hartgen.com

www.hartgen.com

An ACRA Member Firm
www.acra-crm.org

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MANAGEMENT SUMMARY

SHPO Project Review Number: *16PR02420*
Involved State and Federal Agencies*: US Army Corps of Engineers (Corps) and the NYS Department of Environmental Conservation (DEC)*
Phase of Survey: *I and II*

LOCATION INFORMATION

Municipality: *Coxsackie (03905)*
County: *Greene*

SURVEY AREA

Length: *1,660 feet (506 m)*
Width: *1,260 feet (384 m)*
Acres: *50 acres (20 ha)*

ARCHEOLOGICAL SURVEY OVERVIEW

Number and Interval of Shovel Tests: *41 at 5 meters (16 ft)*
Number and Size of Units: *0*
Width of Plowed Strips: *thirty-eight (38) 10 foot (3 m) wide plowed strips*
Surface Survey Transect Interval: *50 feet (15 m)*

RESULTS OF ARCHEOLOGICAL SITE EVALUATION

Site Name and Site Number: *GCCF Site, Locus 1*
Cultural Affiliation: *Unknown Precontact*
Site Size: *790square meters (±8,503 ft^2)*
Area of Surface Reconnaissance: *2,692 square meters (±28,981 ft^2)*
Number of Shovel Tests: *96*
Number of Units Excavated: *3 (1-by-1 meter)*
Number of Stripped Areas: *6 (equaling 30 square meters)*
Total Area Excavated: *57 square meters (613 ft^2)*
Recommended Eligible for National Register: *yes*

RECOMMENDATIONS

The IB fieldwork recorded the presence of three (3) potential site locations within the west half of the Project. Avoidance was recommended but was not feasible. A Phase II site evaluation was completed, which identified one (1) site in the northern part of the APE that is considered National Register eligible (NRE).

Avoidance is recommended and Greene County Department of Economic Development has agreed to follow the proposed the avoidance plan contained herein. The rest of the APE does not contain significant archeological deposits or sites.

Report Authors: *Adam Luscier*
Date of Report: *September 2016*

ABSTRACT

The Project encompasses 50 acres (20 ha) of an open field east of US Route 9W, south of the existing Coxsackie Correctional Facility. The Project involves the construction of a new correctional facility, associated parking, drainage features and other necessary infrastructures.

Phase I fieldwork included thirty-eight (38) plowed transects that were surface collected to record the presence or absence of archeological sites. Three (3) discrete precontact artifact scatters were identified within the west half of the Project; between Route 9W and a small stream.

Phase II evaluations were completed of the scatters and an isolated projectile point find. The fieldwork included four (4) plowed areas (Areas 1-4) encompassing the scatters and the point find. Only Areas 1 and 3 produced additional artifacts. Subsequently, close interval tests were excavated across the concentrations of artifacts that appeared on the plowed surfaces in Areas 1 and 3. This work identified a lithic workshop in Area 3, named the GCCF Site.

The GCCF Site contained two (2) loci. Locus 1 produced a number of bifaces and flakes made out of Mt. Merino chert (likely from Flint Mine Hill). Locus 2 produced a few flakes and much less material that Locus 1.

Additional Phase II work was completed in effort of defining an area of avoidance for the GCCF Site. This work found that Locus 2 retains little archeological integrity and is likely unrelated to Locus 1.

GCCF Site, Locus 1 contains the full spectrum of lithic reduction and failed products (stone tool failures). The lithic material bears evidence of having been heat-treated during the tool making process. The site retains evidence of stone tool production within a lithic supply zone (i.e., close proximity of the lithic source at Flint Mine Hill), and has the potential to yield additional information about the prehistory of the area. GCCF Site, Locus 1 is considered National Register eligible (NRE) and will be avoided. Locus 2 is not NRE.

GCCF Site, Locus 1 covers ±790 square meters (±8,503 ft^2) and the avoidance area will encompass 2,139 square meters (23,024 ft^2) around it. No further archeological work is needed.

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prone to weathering. The cross-section view on the bottom shows the thick, triangular, longitudinal profiles of these examples.

Table List

PHASE I CULTURAL RESOURCES SURVEY

1 Introduction

Hartgen Archeological Associates, Inc. (Hartgen) conducted a Phase I archeological investigation for the proposed Greene County Public Facilities project (Project) located in the Town of Coxsackie, Greene County, New York. The Project requires approvals by the US Army Corps of Engineers (Corps) and the NYS Department of Environmental Conservation (DEC).

This investigation was conducted to comply with Section 106 of the National Historic Preservation Act and will be reviewed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archaeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections* (1994), which are endorsed by OPRHP. This report has been prepared according to OPRHP's *State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements* (2005).

2 Project Information

2.1 Project Location

The project area encompasses 50 acres (20 ha) on the east side of Route 9W south of the Coxsackie Correctional Facility. The project site was transferred by the State of New York to Greene County for development of public facilities (Map 1).

2.2 Description of the Project

The proposed Project will construct a new correctional facility, associated parking, drainage features and other necessary infrastructure.

2.3 Description of the Area of Potential Effects (APE)

The area of potential effects (APE) includes all portions of the property that will be directly altered by the proposed undertaking. The APE will encompass the entire 50 acre (20 ha) parcel.

3 Environmental Background

The environment of an area is significant for determining the sensitivity of the Project Area for archeological resources. Precontact and historic groups often favored level, well-drained areas near wetlands and waterways. Therefore, topography, proximity to wetlands, and soils are examined to determine if there are landforms in the Project Area that are more likely to contain archeological resources. In addition, bedrock formations may contain chert or other resources that may have been quarried by precontact groups. Soil conditions can provide a clue to past climatic conditions, as well as changes in local hydrology.

3.1 Present Land Use and Current Conditions

The Project is currently a fallow, agricultural field with a small north-south trending swale traversing the central portion of the parcel.

3.2 Soils

Soil surveys provide a general characterization of the types and depths of soils that are found in an area. This information is an important factor in determining the appropriate methodology if and when a field study is recommended. The soil type also informs the degree of artifact visibility and likely recovery rates. For example, artifacts are more visible and more easily recovered in sand than in stiff glacial clay, which will not pass through a screen easily.

The Project is located on a glacial lake plain covered by a large area of glaciolacustrine sediment (Lake Albany clays). The soils consist predominantly of Kingsbury and Rhinebeck soils with smaller areas of Covington and Madalin soils; all of which are not well drained (United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) 2006).

Table 1. Soils in Project Area

Symbol	Name	Depth	Textures	Slope	Drainage	Landform
KrA & KrB	Kingsbury and Rhinebeck	0 to 17 cm (0-7 in) 35 cm (14 in) 91 cm (36 in) 178 cm (70 in)	ClLo SiClLo Cl ClLo to FiCaLo	0 to 3%	Somewhat poorly drained	Lake Plains
Co	Covington and Madalin	0 to 17 cm (0-7 in) 50 cm 0(20 in) 152 cm (60 in)	SiCl Cl SiCl	0 to 3%	Poorly drained	Depressions

Key: Texture: Co-Coarse, Fi-Fine, Gv-Gravel(ly, Lo-Loam, Sa-Sand, Si-Silt, Vy-Very

3.3 Bedrock Geology

The Project is located on a flat, low-lying section of the mid-Hudson valley immediately west of Flint Mine Hill. The area is largely underlain by Ordovician shales, graywackes, siltstones and limestones; composed of Indian River, Mount Merino and Austin Glen Formations; all three (3) are chert-bearing. The chert found at Flint Mine Hill is largely derived from the Mount Merino formation and is thought to have been one of the most heavily exploited and widely distributed cherts in the Northeast (Funk 2004).

3.4 Physiography and Hydrology

Steeply sloped areas are considered largely unsuitable for human occupation. As such, the standards for archeological fieldwork in New York State generally exclude areas with a slope in excess of 12% from archeological testing (NYAC 1994). Exceptions to this rule include steep areas with bedrock outcrops, overhangs, and large boulders that may have been used by precontact people as quarries or rock-shelters. Such areas may still warrant a systematic field examination.

The Project sits on the valley floor at an elevation of ±123 feet (37 m) above sea level (asl); adjacent to Flint Mine Hill which rises to a maximum elevation of ±400 feet (122 m) asl. The terrain slopes gradually from north to south. A small stream meanders through the middle of the Project and connects with a drainage swale at the southern edge that ultimately drains the surrounding terrain toward the Coxsackie Creek. A section of the stream in the middle of the Project has been channelized/straightened. This was a branch of the Coxsackie Creek that was affected by construction of the Coxsackie Correction Facility.

4 Documentary Research

Hartgen conducted research using the New York State Cultural Resource Information System (CRIS), which is maintained by the New York SHPO and the Division for Historic Preservation DHP within OPRHP. CRIS contains a comprehensive inventory of archeological sites, State and National Register (NR) properties, properties determined eligible for the NR (NRE), and previous cultural resource surveys.

4.1 Archeological Sites

An examination of CRIS identified thirty-three (33) reported archeological sites within one mile (1.6 km) of the Project (Table 2). Previously reported archeological sites provide an overview of both the types of sites that may be present in the Project and relation of sites throughout the surrounding region.

Many of the sites listed in Table 2 are workshops and quarries; and are the types of the sites that occur within a lithic supply zone as would be expected near Flint Mine Hill. Table 2 also lists a number of rockshelters; derived from the same chert-bearing upthrusts of bedrock as Flint Mine Hill.

Table 2. Archeological sites within one mile (1.6 km) of the Project

OPRHP Site No.	NYSM Site No.	Site Identifier	Description	Proximity to Project Area
	423	Vermann Rockshelter	Precontact rockshelter	5,200 ft northwest
	3404	ACP GRNE 25	Precontact quarries	4,000 ft northwest
	8272	Ryder 40 FS 28	Precontact rockshelter	2,100 ft west
	424		Precontact workshop	1,800 ft west
	402	Day-Dynamite Rockshelter; COX 38-4	Precontact rockshelter	5,400 ft west
	7105		Precontact casual find	4,200 ft southeast
	406	Workshop?; COX 3-4	Precontact workshop	2,800 ft southeast
	8025		Large fluted point recovered near Flint Mine Hill	2,800 ft east
	8554	Flint Mine Hill Workshops; COX 1-4?	Precontact workshops	4,200 ft southeast
	404	Flint Mine Hill: Mineburg Hill; COX 1-4; Ryder 65 FS 28	Large quarry pits and debris; many hammerstones, bifaces and blades. Few finished implements.	3,400 ft southeast
	8555	Flint Mine Hill Workshops; COX 1-4?	Precontact workshops	2,700 ft southeast
	8280	Ryder 65 FS	No info	4,500 ft southeast
90NR00539		Flint Mine Hill Archeological District	NRL precontact archeological sites. Includes twelve (12) sites; Flint Mine Hill itself and eleven (1) sites within three miles of it.	2,100 ft southeast
03905.000002		Bronck Homestead Buildings	NHL; form missing	1,400 ft north
03905.000003		Flint Mine Hill Archeological Site	NR Listed; within the Flint Mine Hill Archeological District	3,900 ft southeast
03905.000005		Workshop Area	NR Listed; within the Flint Mine Hill Archeological District	2,800 ft southeast
03905.000006	405	Russian Workshop	NR Listed; within the Flint Mine Hill Archeological District	4,400 ft southeast
03905.000007		Baldwin Rockshelter	Woodland/Meadowood Phase Site – NR Listed; within the Flint Mine Hill Archeological District.	5,500 ft south
03905.000013		Baldwin Farm Flats	NR Listed; within the Flint Mine Hill Archeological District	5,300 ft south
03905.000016	399	Bronck House Rock Shelter SM #399	Precontact Site - Undetermined	2,300 ft west
03905.000017	398	Zimmerman Rock Shelter Site SM # 398	Precontact Site - Undetermined	2,400 ft northwest
03905.000018	450	Debbie Search Farm SM # 450/ TEL-ALB 15	Precontact Site - Undetermined	1,700 ft north
03905.000041		Large Workshop SM #424	Precontact Site - Undetermined	1,800 ft west
03905.000095		Coxsackie Facility Retention Pond Site	PaleoIndian to Wood Period occupations spanning 11,000 years of prehistory. Undetermined	3,500 ft east
03905.000140	10873	The Reservoir Site	Precontact Site - Not eligible	4,500 ft northwest
03905.000144		TEL/ALB 16	Precontact Site - Undetermined	1,300 ft northwest
03905.000145		TEL/ALB 17	Precontact Site - Undetermined	1,800 ft southwest
03905.000146		TEL/ALB 16	Precontact Site - Undetermined	5,500 ft southwest

OPRHP Site No.	NYSM Site No.	Site Identifier	Description	Proximity to Project Area
03905.000162	10742	Victoria Site	Archaic to Woodland Period Site +2,600 artifacts Eligible	5,400 ft east
03905.000192		Solar Field Precontact Site 8	Archaic Site +200 artifacts - Undetermined	5,100 ft southeast
03905.000193		Solar Field Precontact Site 8	Precontact Site +40 artifacts - Undetermined	5,100 ft southeast
03905.000195		Solar Field Precontact Site 10	Precontact Site +30 artifacts - Undetermined	5,500 ft southeast
03905.000196		Solar Field Precontact Site 11	Archaic Site +40 artifacts – Undetermined	5,100 ft southeast

4.2 Historic Properties

An examination of CRIS identified two National Register Listed (NR) properties, one National Register Eligible (NRE) property, no properties previously determined to be ineligible, and no properties of undetermined status in close proximity to the Project Area (Table 3).

Table 3. Inventoried properties in close proximity to the Project Area

USN	Property Name	Status	Description	Location and Proximity to Project Area
90NR00540	Pieter Bronck House	NHL	This house was built in three stages between 1663 and 1792.	500 ft north
90NR00537	Bronck Farm 13 Sided Barn	NRL	Located 75 feet west of Old Kings Road and is one (1) of seven (7) agricultural structures associated with the Bronck farmstead that still survives,	1,600 ft north
03905.000149	Coxsackie Correctional Facility	NRE	11260 US 9W. This building was constructed in the early 1930s and is a great example of Georgian Revival institutional architecture.	1,600 ft northeast

Key: NHL-National Historic Landmark, NRL-National Register Listed, NRE-National Register Eligible

4.3 Previous Surveys

A review of CRIS identified two previous surveys within the immediate vicinity of the Project (Table 4).

Table 4. Relevant previous surveys within or adjacent to the Project

Project/Phase	Summary	Citation
12 Proposed Sites for the Columbia & Greene Counties Joint Solid Waste Management Facility, Phase I	Project included 12 potential locations in Greene and Columbia Counties, east and west of the Hudson River. Two (2) of these locations were adjacent to the current Project: one at Flint Mine Hill (G-19) and the other behind (east) of the Greene County Correctional Facility (RR-1). Both were considered highly sensitive for Native American sites.	(Hartgen 1987)
Coxsackie Correctional Facility, Proposed RMHU, Phase I and Phase I Additional	Project encompasses 27 acres south of the existing Correctional Facility and nearly contiguous with the northeast side of the current Project. Isolated precontact and historic artifacts were found; but, nothing that constituted a site.	(Milner 2008, 2009)

5 Historical Map Review

Early settlement of the Coxsackie area is believed to have started after Pieter Bronck moved to the area in the 1660s. He set up a farm on the fertile lands and was soon followed by others (J. B. Beers & Co. 1884). The earliest map examined (1779) shows land divisions with settlements along the river and early roads that existed near the end of the Revolution. The Project appears in a vacant area just east of one of the early roads (Map 4).

By the mid-1800s there was a larger network of roads throughout the area with a number of widely dispersed properties, most likely farmsteads. A property that belonged to *J Coyler* was located opposite the southwest corner of the Project but no structures were indicated within the APE. Over the next 35 years very little changed and the Project was likely used for agriculture over that time (Maps 5 and 6).

The turn of the century USGS is the earliest to show topography with Flint Mine Hill a short distance southeast of the Project (Map 7). By the 1950s, the correctional facility buildings had been built northeast of the Project but at the time functioned as a vocational institute. The 1950s map shows the Project and its immediate surroundings pretty much as they appear today (Map 8).

5.1 Map-Documented and Existing Structures

There are no mapped documented structures (MDSs) within the Project.

6 Archeological Sensitivity Assessment

The New York Archaeological Council provides the following description of archeological sensitivity:

> Archaeologically sensitive areas contain one or more variables that make them likely locations for evidence of past human activities. Sensitive areas can include places near known prehistoric sites that share the same valley or that occupy a similar landform (e.g., terrace above a river), areas where historic maps or photographs show that a building once stood but is now gone as well as the areas within the former yards around such structures, an environmental setting similar to settings that tend to contain cultural resources, and locations where Native Americans and published sources note sacred places, such as cemeteries or spots of spiritual importance (NYAC 1994:9).

6.1 Precontact Archeological Sensitivity

The precontact sensitivity of an area is based on proximity to previously documented precontact archeological sites, known precontact resources (e.g. chert outcrops), and physiographic characteristics such as topography and drainage. Generally, areas in the vicinity of streams and wetlands are considered to have elevated sensitivity for sites associated with Native American use or occupation because they presented potential food and water sources as well as transportation corridors.

The Project is located in an area of the mid-Hudson Valley that is considered highly sensitive to Native American sites. Flint Mine Hill was one of several quality lithic sources in the area, which was a major draw for precontact groups. The project is within 3,400 feet of Flint Mine Hill and falls with the lithic supply zone, i.e., sites in the area had direct access to the lithic materials (Burke 2007). Workshops (i.e., where stone tools were made) are prevalent among the sites listed in Table 2 and the sensitivity to these types of sites in the Project is high. In addition, the small stream in the Project may have influenced the development of small camp sites as Native Americans exploited other resources in the area.

6.2 Historic Archeological Sensitivity

The historic sensitivity of an area is based primarily on proximity to previously documented historic archeological sites, map-documented structures, or other documented historical activities (e.g. battlefields).

The historic map review suggests that the Project has always been vacant and functioned as farm land throughout its history. It does not appear that anything was built within the Project and the historic sensitivity is considered low.

7 Archeological Potential

Archeological potential is the likelihood of locating intact archeological remains within an area. The consideration of archeological potential takes into account subsequent uses of an area and the impact those uses would likely have on archeological remains.

The Project has historically been plowed for agriculture, which is not considered significant disturbance; therefore, the potential for the presence of intact archeological sites is considered high.

8 Recommendations

Based on the high archeological potential for precontact resources, a Phase IB archeological field reconnaissance was completed, as discussed in the following section.

9 Archeological Survey

The Project encompasses fallow farm fields and the surface collection of plowed transects was the most effective/efficient method for determining the presence or absence of archeological sites. The fieldwork was completed in October 2015 by a crew of four (4) archeologists under the direction of Matt Kirk.

9.1 Methodology

9.1.1 Surface Collection

Thirty-eight (38) transects were plowed, disked, and washed with rain before the fieldwork began. The transects were no less than 3 meters (10 ft) wide and spaced 15 meters (50 ft) apart (Photo 1).

Archeologists lined up at 1.5-meter (5-ft) intervals to walk the plowed areas (Photo 2). Precontact (Native American) artifacts and significant historic artifacts observed on the surface were collected and the locations were marked with context-numbered pin flags. Pin flags were surveyed using a Trimble R1 GPS unit, and the numbered context locations were plotted on the project map. The surface collection fieldwork was photographed.

9.1.2 Artifacts and Laboratory

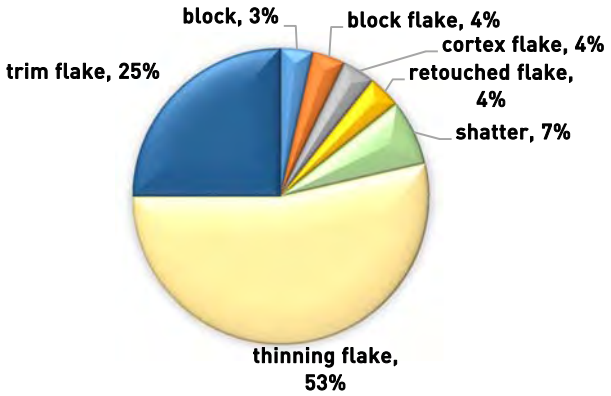
All precontact (Native American) cultural material identified during the fieldwork was collected. Significant historic artifacts such as glass, ceramics, food remains, hardware, and miscellaneous items were collected. Coal, ash, cinder, brick, and modern materials were noted. Artifacts collected were placed in paper or plastic bags labeled by provenience and inventoried in a bag list. Bags were numbered in the field and transported to the Hartgen laboratory in the Town of North Greenbush, Rensselaer County, New York, for processing. Artifacts were cleaned and cataloged. Cataloging entailed entering artifact provenience information, counts, weights, and descriptive information into the database (Appendix 2).

9.2 Results

The surface collection recovered thirty-seven (37) precontact artifacts that are listed in Table 5 below. The surface collection numbers (SC#) correspond with the numbers on Map 2. The precontact artifacts occurred as three (3) diffuse concentrations, west of the stream which meanders through the center of the Project. Very little was found east of the stream. The largest of the three (3) concentrations occurred along the southern edge of the Project and the other two were found along the stream (Map 2).

Debitage was the most common artifact; with thinning and trim flakes as the most frequent types. These types are typical of latter stage tool production, sharpening and repair.

Pie Chart 1. Types of debitage recovered by the Phase I surface collection



All other artifacts account for less than 35% of the assemblage and include five (5) bifaces, two (2) scrapers, a chopper, two (2) fire-cracked rocks (FCR), a hammerstone and a projectile point (Table 5). Most of the artifacts were made from Mt. Merino chert likely source from Flint Mine Hill. There are also artifacts made from Devonian cherts that were sourced from limestone at the base of Catskills.

Table 5. Precontact artifacts recovered from the Phase IB surface collection

SC #	debitage	biface	scraper	hammerstone	chopper	fire-cracked rock	projectile point	Total
1	1							1
2		1						1
5			1					1
6				1				1
7	1							1
9	1							1
11		1						1
12			1					1
15	1							1
16					1			1
17	1							1
19	1							1
20						1		1
22	1							1
23	1							1
24	1							1
25	1	1						2
27		1						1
28	1							1
29		1						1
30	1							1
31	1							1
32	1							1
33	1							1
35	1							1
36	1							1
37						1		1
38							1	1
39	1							1
40	1							1
41	1							1
42	1							1
43	1							1
44	1							1
45	1							1
46	1							1
Total	25	5	2	1	1	2	1	37

The hammerstone has usewear on the periphery with significant damage on the ends, indicative of hard impacts. The projectile point has a triangular blade and lobate stem that are similar to Adena types (Middlesex Phase ±2500 to 2100 B.P.) of the Early Woodland Period in New York (Funk 1993). The bifaces are all in early stages of production and three (3) of the examples exhibit lateral snaps (Photo 3, Photo 4 and Photo 5).

10 Recommendations

The IB fieldwork recorded the presence of three (3) site locations within the west half of the Project. Avoidance was recommended, however it was not feasible. A Phase II site evaluation was completed, the results of which are presented in the following section of this report.

PHASE II ARCHEOLOGICAL SITE EVALUATION

The objectives of this study were to evaluate the integrity of the archeological deposits and determine if they have the potential to yield information that can be used to reconstruct the sites limits, function, and cultural context. This data will be used to evaluate the significance of the site according to the National Park Service's National Register criteria (Shrimpton 1997).

The fieldwork was executed in two stages. The first occurred in November 2015 and the second in June 2016. One (1) National Register eligible (NRE) precontact site was identified (GCCF Site, Locus 1) and avoidance is proposed.

11 Background

11.1 Geomorphological Context

The Project is located in the Hudson River Lowland, which is a physiographic section of the larger Appalachian ridge and valley province. It sits on the valley floor between a north-south trending ridge of shale on the east and the limestone-faced base of the Catskills on the west (Funk 2004). Both the shale and limestones are chert bearing.

11.2 Environmental Setting

The earliest human inhabitants of the Northeast are thought to have encountered a fairly open landscape with light scatters of trees, 10,000 to 12,000 years before present (B.P.). The broken landscape created by uplifts and folds of bedrock at the base of the Catskill Mountains provided elevations to view this landscape, an abundance of lithic resources and natural rock shelters.

It is commonly accepted that by 6,000 to 5,000 B.P., climactic change produced the extensive mixed forests that are present today across the eastern United States (Funk 1990). The abundance of plant foods in these forests was a catalyst for the increase of fauna; most importantly white-tailed deer populations (Funk 1993). Archeological data suggests that a concomitant increase in human population occurred in the Hudson River Valley.

Forest cover was likely cleared from the Project early in the Colonial period (17th or 18th centuries) and was used for agriculture consistently since that time.

11.3 Cultural Context

Stone tool technology was one of the most important influences on human evolution. Tools that were made to perform specific tasks and used to hunt different animals are evidence of a progression in conscious thought that strived to improve the technology, which in effect improved the chances of survival.

The Project is located within a lithic source area, aka supply zone (Burke 2007) that was the origin for an unimaginable amount of stone tools throughout precontact time. The area that would one day become Coxsackie was a hub of precontact activity; in large part due to the extensive lithic resources for making stone tools. Chert (flint) found at Flint Mine Hill and in other adjacent sources may have been among the most sought-after materials in the Northeast due to its quality. It's well documented that Native groups from the Paleo-Indian to the Woodland Periods (12,000 to 350 B.P.) used these cherts (Funk 2004).

Flint Mine Hill is less than a mile east- southeast of the Project. One of the first professional excavations of Flint Mine Hill in the 1920s found hundreds of chert quarry pits, some that measured over 40-by-150 feet (12 to 46 m), and huge chert debris screes more than 10 feet thick. The largest workshops where blades and tools were finished were discovered on the flats below the hill in similar settings as the Project (The University of the State of New York 1920).

Any sites discovered within the Project that retain evidence of stone tool production are important because the Project is located in a lithic supply zone. One such site was discovered and became the focus of this Phase II study.

12 Archeological Site Evaluation

The initial round of Phase II field work was completed during the week of November 16, 2015. The field crew consisted of John Ham, Kelli Smith, Liz Horner, Jamie Penk and Joel Ehrlich, under the direction of Adam Luscier. Matt Kirk, RPA was the principal investigator.

12.1 Methodology

12.1.1 Surface Collection

The Phase II surface collection concentrated on four (4) areas; three (3) diffuse concentrations of artifacts and the area where an isolated projectile point was discovered. Areas encompassing the three (3) concentrations and the point find were marked in the field; then each areas was plowed, disked, and washed by rain. These were designated Areas 1-4 and respectively covered ±275,665 square feet (25,609 m^2), ±16,201 square feet (1,505 m^2), ±28,981 square feet (2,692 m^2) and ±13,567 square feet (1,260 m^2) (Map 9a).

Archeologists lined up at 1.5-meter (5-ft) intervals to walk the plowed areas. Precontact (Native American) artifacts and significant historic artifacts observed on the surface were collected and the locations were marked with context-numbered pin flags. Pin flags were surveyed using a Trimble R1 GPS unit, and the numbered context locations were plotted on the project map. The surface- collecting fieldwork was photographed.

12.1.2 Shovel Testing

Forty-one (41) Phase II shovel tests were excavated after the surface collection. They were placed at reduced intervals across artifact concentrations identified within Areas 1 and 3 (Photo 6, Photo 7 and Photo 8). The tests were numbered according to the area in which they were excavated.

Shovel tests were excavated at 5-meter (8 ft) intervals. Each shovel test was 40 centimeters (16 in) in diameter. All excavated soil was passed through 0.25-inch hardware mesh and examined for both precontact (Native American) and historic artifacts. The stratigraphy of each test was recorded including the depth, Munsell color, soil description, and artifact content (Munsell Color 2000). The location of each shovel test was plotted on the project map. Test excavations were photographed.

12.1.3 Stripping

Under the direction of an archeologist, a backhoe with a toothless bucket was used to excavate the plowzone to the surface of the subsoil. Soil was piled next to each stripped area and selected soils were screened through 0.25-inch hardware mesh and examined for both precontact (Native American) and historic artifacts. The surface of the subsoil was cleaned and examined for artifacts and evidence of cultural features. Each stripped area was then recorded with photographs, mapped on the grid and plotted on the project map. Stripping occurred in Area 3.

12.1.4 Artifacts and Laboratory

All precontact (Native American) cultural material identified during the fieldwork was collected. Significant historic artifacts such as glass, ceramics, food remains, hardware, and miscellaneous items were collected. Coal, ash, cinder, brick, and modern materials were noted. Artifacts collected were placed in paper or plastic bags labeled by provenience and inventoried in a bag list. Bags were numbered in the field and transported to the Hartgen laboratory in the Town of North Greenbush, Rensselaer County, New York, for processing.

Shovel test records and other provenience information were entered into a Microsoft *Access* database (Appendix 1). Artifacts were cleaned and cataloged. Cataloging entailed entering artifact provenience information, counts, weights, and descriptive information into the database (Appendix 2).

12.2 Results

Areas 1 and 3 were the only areas to produce additional artifacts after the Phase II surface collection and are the focus of the Phase II analysis. Areas 2 and 4 did not produce additional information and are not discussed further.

The site discovered in Area 3 is considered National Register eligible (NRE). The deposits in Area 1 are not considered significant (Maps 9b and 9c).

12.2.1 Area 1

This was the largest of the four plowed areas; ±275,665 square feet (25,609 m^2) (Map 9b). The surface collection focused on identifying patterns in the distribution of artifacts, i.e., do materials occur in the same, overlapping areas as the Phase I surface collection points and/or do new concentrations of artifacts occur within the plowed area. Overall, fifteen (15) artifacts were recovered and were distributed in a diffuse scatter, without any real concentrations or patterns, even when overlaid with the Phase I data.

Table 6. Artifacts recovered from the Phase II surface collection (SC) in Area 1.

SC#	debitage						biface	hammerstone	Total
	block flake	core	flake	primary flake	retouched flake	thinning flake			
1001			1						1
1003		1							1
1004	1								1
1005	1								1
1006						1			1
1007				1					1
1008					1				1
1009							1		1
1011						1			1
1014						1			1
1015						1			1
1016							1		1
1017						1			1
1021						1			1
1022									1
Total	2	1	1	1	1	6	2	1	15

Twenty-five (25) shovel tests were excavated at reduced intervals around diffuse scatters of artifacts in Area 1 (Tests 1001-1025). The tests were used to record the soil stratigraphy and recover additional artifacts that might disclose patterns that were not brought to light by plowing (Map 9b).

The tests encountered a brown clayey loam, 25 to 40 cm (9 to 14 in) thick plowzone underlain by clay subsoil. None of the tests recovered cultural materials and the combined results of the surface collection and the shovel tests showed that the deposits in Area 1 are limited to the plowzone, are limited in numbers and in their potential to yield additional information.

12.2.2 Area 3

This plowed area covered ±28,981 square feet (2,692 m²) on one of the more elevated parts of the APE. Area 3 is in the northern part of the APE, west of a small stream (Map 9c).

It became apparent fairly quickly that a site exists in Area 3, as artifacts were recovered in a repeated pattern; the Phase II surface collection overlapped the Phase I surface collection. The concentration of artifacts formed a tight grouping and the artifacts had continuity in their form and lithic material type. Large biface fragments and flakes were recovered and all made from the same lithic material, i.e. Mt. Merino chert. A typical characteristic of Ordovician aged Mt. Merino chert is the weathering pattern that develops on the surface (Brumbach 1987), which all of the artifacts have. This suggests the material was sourced from Flint Mine Hill (Funk 2004). Flakes of Devonian aged ore (Catskill limestones) were recovered as well but to a much lesser degree.

A series of fifteen (15) tests were excavated at 5 meter (8 ft) intervals over the concentration of artifacts and produced additional bifaces and flakes of the same chert. All materials were collected from the plowzone. Based the results of the Phase II surface collection and shovel tests, this was designated the Greene County Correctional Facility Precontact Site (hereafter; the GCCF Site). This site clearly contains evidence of a reduction sequence and the products of stone tool production.

Table 7. Artifacts recovered from the surface collection and the shovel tests in GCCF Site - Area 3.

Artifact types	**debitage**					**biface**	**fire-cracked rock**	**Total**
	block flake	**primary flake**	**shatter**	**thinning flake**	**trim flake**			
Surface Collection								
3001				1				1
3002						1		1
3003		1						1
3004		1						1
3005				1				1
3006				1				1
3007				1				1
3008						1		1
Shovel Tests								
3001				1		1		2
3006	3		1	2	1			7
3007					1	1	1	3
3010				1		2		3
Total	3	2	1	8	2	6	1	23

The Phase II evaluation defined the GCCF Site as covering ±1,386 square meters (14,918 ft²) with two (2) potential loci. Locus 1 produced a concentration of bifaces and flakes on the east edge of the plowed surface of Area 3. Locus 2 was represented by a diffuse scatter of flakes that occurred on the plowed surface immediately west of Locus 1. In order to avoid this site, both would have to be included in the avoidance area (Maps 9c and 10).

In effort to reduce the avoidance area, additional Phase II was completed that focused on Locus 2, which contained the least potential of the two loci. The Phase II work also recorded additional data from Locus 1 in effort to better define its limits.

This work was accomplished during the first week of June 2016 through additional surface collection of the ±28,981 square feet (2,692 m²) plowed area and the excavation of eighty-one (81) additional tests at 5 meter (8 ft) intervals, three (3) 1-by-1 meter (3.2-by-3.2 ft) units and six (6) stripped areas; all together totaling 53 square meters (174 ft²) of excavation (Map 10).

Between November 2015 (initial Phase II) and June 2016 the plowed surface was exposed to winter and spring seasons, which brought out a number of artifacts without re-plowing the area. The second surface collection recovered 22 artifacts in Area 3 (Table 8); most of which (over 90%) came from Locus 1 (Photo 9 and Map 10).

Table 8. Artifacts recovered from the second surface collection in the GCCF Site - Area 3.

SC #	biface	debitage	faunal bone	fire-cracked rock	Total
SC 3102		1			1
SC 3103		3			3
SC 3104	1	1			2
SC 3105	1				1
SC 3106	1	1			2
SC 3107	1				1
SC 3108	1	1			2
SC 3109	1				1
SC 3110		1			1
SC 3111		1			1
SC 3112		1			1
SC 3113		1			1
SC 3115			1		1
SC 3116				1	1
SC 3117	1				1
SC 3118		1			1
SC 3119	1				1
Total	8	12	1	1	22

Following the surface collection, tests were organized among transects oriented north-south across Area 3 (Photo 10). The stratigraphic profile included ±30 cms (11 in) of clayey loam plowzone underlain by clay subsoil and all cultural materials came from the plowzone. Similar to the surface collection, most of the artifacts were recovered from Locus 1 and very few in Locus 2 (Table 9 and Map 10).

Table 9. Artifacts recovered from additional shovel tests in the GCCF Site - Area 3.

STP #	biface	debitage	fire-cracked rock	Total
STP 3109		2		2
STP 3114		4		4
STP 3119		1		1
STP 3121		1		1
STP 3138			1	1
STP 3142		1		1
STP 3143	1			1
STP 3146		1		1
STP 3149	1			1

STP #	biface	debitage	fire-cracked rock	Total
STP 3155		1		1
STP 3156		1		1
STP 3157		1		1
STP 3158	1			1
STP 3160		1		1
STP 3161		1	1	2
STP 3181		1		1
Total	3	16	2	21

The results of the surface collection and shovel tests provided good definition of Locus 1 with artifacts in a repeated pattern over the same location. Locus 2 yielded very little additional data. In effort of creating a buffer for avoidance of Locus 1, Units 1-3 were placed along the edge of Locus 1 (Photo 11). The soil profiles were the same as in the shovel tests with plowzone-subsoil horizons. The units were not productive, Unit 1 recovered nothing and combined Units 2 and 3 recovered 4 chert flakes. The results show that the most integral deposits of Locus 1 are located east of the units (Map 10).

Although only a few chert flakes were recovered from the additional surface collection and shovel testing at Locus 2, there was still potential for features. Four (4) 25 square meter (269 ft^2) stripped areas were excavated across Locus 2. No features were discovered; but, one flake was recovered from Stripped Area 2 and two (2) biface fragments from Stripped Area 4 (Map 10).

Two (2) more stripped areas of the same size were also excavated on the edge of the Locus 1 and no features were discovered (Photo 12, Photo 13 and Map 10).

The additional Phase II of the GCCF Site has shown that Locus 2 lacks integrity and research potential. Both loci produced artifacts made from different cherts. Other than proximity nothing in the archeological record links Locus 2 to Locus 1; i.e., similar artifacts and the lithic material types. It is unlikely that they are related deposits. Locus 1 retains high research potential and will be avoided, Locus 2 will not.

12.2.2.1 Site Boundaries within APE

The GCCF Site Locus 1 covers approximately ±790 square meters (±8,503 ft^2) in the northern half of the APE, west of the stream (Map 11).

12.2.2.2 Site Stratigraphy and Chronology

The site stratigraphy is typical for the area consisting of plowzone and subsoil horizons. The plowzone ranged from 25 to 40 cm (9 to 14 in) in depth, and was underlain by clay subsoil. Overall, the soils were not well drained.

The plowzone was the artifact-bearing level. No diagnostic artifacts were recovered during the Phase II evaluation.

12.3 Artifact Analysis

One hundred and twenty-seven (127) precontact artifacts were recovered during the Phase II evaluation; fifteen (15) artifacts from Area 1 and eighty (80) from Area 3 at the GCCF Site.

The artifacts include chert debitage, bifaces, a hammerstone and a fragment of fire cracked-rock (FCR) (Table 7). About sixty percent (63%) of the total assemblage was recovered from the GCCF Site in Area 3 and the following section focuses on the artifacts from the site.

12.3.1 Debitage

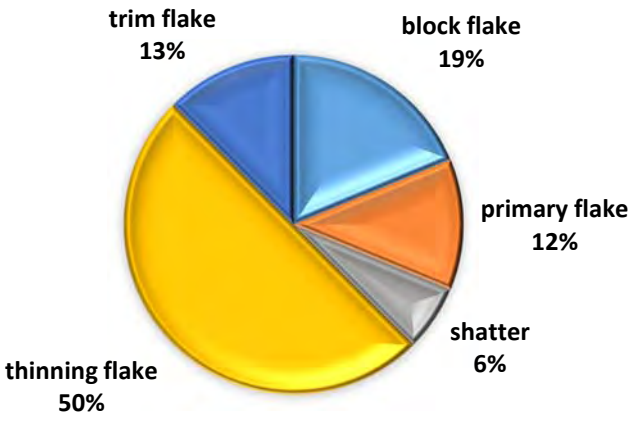
Overall, the types of debitage recovered in the Phase II was similar to the Phase I, and thinning flakes were most prevalent again. There were, however, a larger percentage of primary flakes, block flakes and shatter recovered from the GCCF Site, Locus 1, which evidence the beginning stages of lithic reduction.

Both Devonian (Catskills) and Ordovician (Flint Mine Hill) aged lithic materials (chert) were present with the latter of the two being most prevalent and almost exclusive at the GCCF Site. Ordovician cherts are derived from shale bedrock and are sometimes shaley in texture. The samples from the GCCF Site are green to bluish green with white to brown weathering.

12.3.2 GCCF Site – Locus 1

Thinning flakes compose half (50%) of the debitage assemblage from the GCCF Site and the rest is composed of shatter, block flakes, primary flakes and trim flakes. As mentioned above, the shatter, block and primary flakes are indicative of the beginning stages of lithic reduction and suggest that some of the chert brought to this spot was in raw form, i.e., chert blocks and/or cores (Photo 14). Except for three (3) thinning flakes produced from Devonian chert (sourced from the limestones at the base of the Catskills), the rest is Ordovician and was likely sourced from Flint Mine Hill. The bifaces described below were also made from Ordovician chert.

Pie Chart 2. Types of debitage recovered from the GCCF Site.



The thinning flakes from the GCCF Site, Locus 1 were thermally altered. Several examples are reddened (i.e., red to pink discoloration) and have pot-lid fractures (Photo 14). This suggests that as tools were made and reached the stage where they needed to be thinned; they were heated, which altered the fracture properties of the chert and rendered it more workable. This made it easier to produce desired tools and in the end, made sharper, harder tools. In addition to the implications this has on the stone tool production process, it also implies there was fire at the GCCF Site and there is potential for subsurface features, such as hearths.

12.3.3 Bifaces

Fifteen (15) bifaces/biface fragments were recovered from the GCCF Site, Locus 1; all of the examples were made form heavily weathered Ordovician chert likely sourced from Flint Mine Hill (Photo 15 and Photo 16). The examples are fragments of large bifaces and the size of the artifacts is possibly due to the chert source itself. The chert ore from Flint Mine Hill occurred in large homogenous pieces and therefore, had less limitations on what could be made. This was thought to have been one of the desired properties of the chert from Flint Mine Hill.

Two (2) biface fragments recovered from Locus 1 are the same thickness, have identical fractures planes and appear to have the same weathered pattern on their surface. They are more than likely from the same piece (Photo 17).

In addition, two (2) of the examples are possible end-scraper preforms. Both are unifacial with distinct dorsal and ventral sides. The dorsal sides bear most of the flake scares and the ventral sides are flat and smooth, with some flake scars on the edges. Both have thick, longitudinal dorsal ridges that would have helped reinforce the scraper; and one example has a Y-shaped flake pattern at its end that is typical of an end scraper (Burke 2007)./ This particular example was also heat-treated. The thick, triangular, longitudinal profiles of these tools is characteristic of lithic technology associated with Paleoindians (Moore 2002) (Photo 18), presenting the possibility of an early occupation of the site.

12.3.4 Fire Cracked-Rock (FCR)

One (1) fragment of sandstone FCR was recovered. Although this was the only artifact of its kind, it also suggests that fire hearths or other features may be present at the GCCF Precontact Site Locus 1. This was also suggested by the presence of heat treated chert debitage and the tools from this site. .

13 Interpretation

Area 1 uncovered 15 artifacts dispersed across a ±275,665 square foot (25,609 m^2) plowed surface. The artifacts do not occur in groupings or clusters that are typical signatures of a camp site or a spot where a group of Indians stopped for a period of time. Additionally, there was little continuity between the artifacts themselves, i.e., the debitage does not appear to have been produced from the same episode of lithic reduction. Rather, they appeared as a group of isolated artifacts across the southern edge of the Project. Although they may have originally occurred in one or more concentrations, centuries of plowing appear, in this case, to have dispersed any concentration to a significant degree.

Area 3 produced an archeological site (GCCF Site) with artifacts that occur in a fairly well circumscribed concentration. The Phase I and II surface collections produced clusters of artifacts repeatedly on the same spot. Subsequent testing on this location produced additional artifacts within and outside of the plowed area.

The artifacts from GCCF Site Locus 1 have continuity, i.e., the debitage and tools are made from the same chert that was heat treated. The debitage occurs as a spectrum of lithic reduction from large primary flakes to small thinning flakes. This suggests that raw materials were reduced to finish products and at some point in this process the chert ore was heat treated. The types of debitage (flakes) and the bifaces suggest the existence of a lithic workshop and the lithic ore was likely mined form Flint Mine Hill. Evidence of heat treatment suggests fire was used in the reduction process and the site has the potential for containing other forms of data such as fire hearths that could produce carbon samples for dating the site.

14 Significance Assessment

The significance of the GCCF Site is assessed according to the National Park Service's *Guidelines for Registering and Evaluating Archeological Properties* (Little, et al. 2000). The GCCF Site, Locus 1 meets eligibility Criterion D for the National Register and has "yielded, or may be likely to yield, information important in prehistory or history."

The GCCF Site, Locus 1 contains a lithic workshop that utilized chert from Flint Mine Hill. The lithic material was heat treated during the process of making tools and this site has the potential to yield important information about the technological strategies involved with the production of stone tools. In addition, these strategies were used on chert that was sourced from one of the largest precontact chert quarries in the Northeast. Although no diagnostic artifacts were recovered, some of the flaking technologies observed in the assemblage suggest that this site could be very early.

Evidence that fire was used at the site implies that an array of other forms of data could be present. If the fire was also used to cook, there may be faunal and floral remains that would provide insight on the diet of the individuals, what the environment was like at the time, and what other types of behaviors occurred at this site, besides the making of stone tools.

15 Avoidance Plan

Avoidance was recommended for the workshop site described above, GCCF Site, Locus 1, and the client (Greene County Department of Economic Development) has agreed to the following short-and long-term avoidance measures. Hartgen archeologist Adam Luscier (aluscier@hartgen.com or 518.588.2033) is the Avoidance Plan Coordinator for the project.

Short-Term Avoidance

Short-term avoidance involves the protection/preservation of the site during construction and the client will ensure that the following measures are implemented:

- At the preconstruction meeting, the Engineer in Charge (EIC) shall be notified regarding the need to protect/avoid the site.
- Temporary fencing (orange snow fence) shall be installed around the limits of the site prior to any clearing or construction activities within the APE, and shall be maintained until all construction has ceased. The specifications for the fencing should be made part of the project construction plans and drawings.
- The fence should encompass no less than ±2,139 square meters (23,024 ft^2).
- To ensure the fence is erected on the correct location, construction plans and drawings should illustrate the avoidance fence with the state plane coordinates as shown on Map 11.
- Signs noting "Environmentally Sensitive Area - No Access" shall be installed on the fencing.
- Inadvertent construction impacts are to be reported to the Avoidance Plan Coordinator and the SHPO immediately. Activity shall cease in the vicinity of the site so the damage can be assessed and a recommendation provided to remediate the situation.
- Once construction is fully completed, the protective fence can be removed.

Long-Term Avoidance

Long-term avoidance involves the preservation of sites after construction is complete and the client is to ensure that the following measures are implemented:

- A deed restriction should be completed for the site area that covers 2,139 square meters (23,024 ft^2).

The deed restriction for the GCCF Site, Locus 1 should be filed with the Greene County Department of Economic Development and the Town of Coxsackie.

16 Recommendations

The Phase II site evaluation identified a precontact site in the north, central part of the APE, subsequently named the Greene County Correctional Facility Precontact Site (GCCF Site). The results of the evaluation found that Locus 1 of this site is National Register eligible (NRE) and should be avoided.

If the SHPO agrees with the avoidance plan and the client agrees to execute the avoidance plan as stated above, no further archeological work is recommended.

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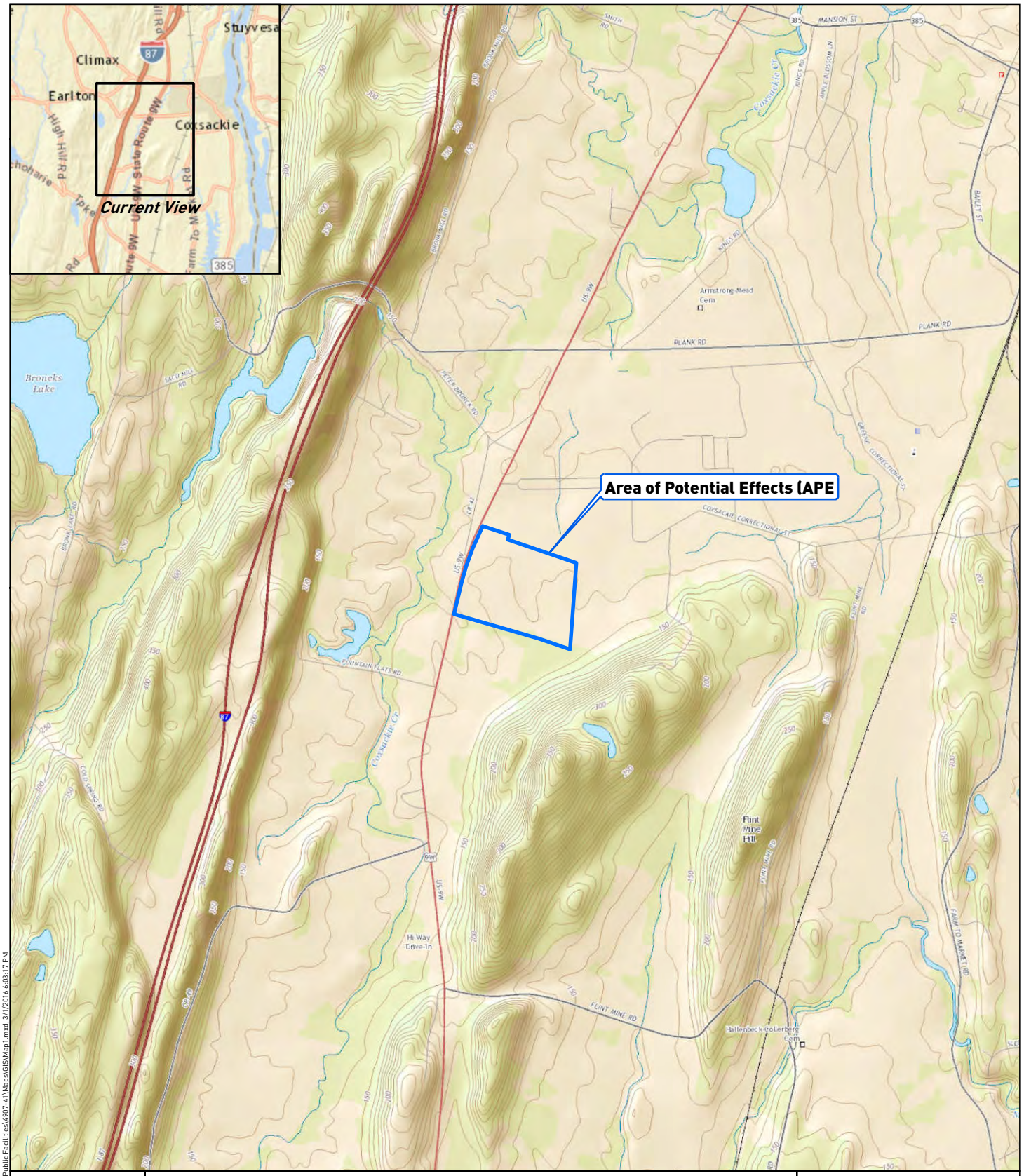
Maps



N

1,000 0 1,000 2,000 Feet

300 0 300 600 Meters

Note: Contour interval is 10 feet.

Project Location (USGS 2016)

HARTGEN archeological associates inc

Map 1

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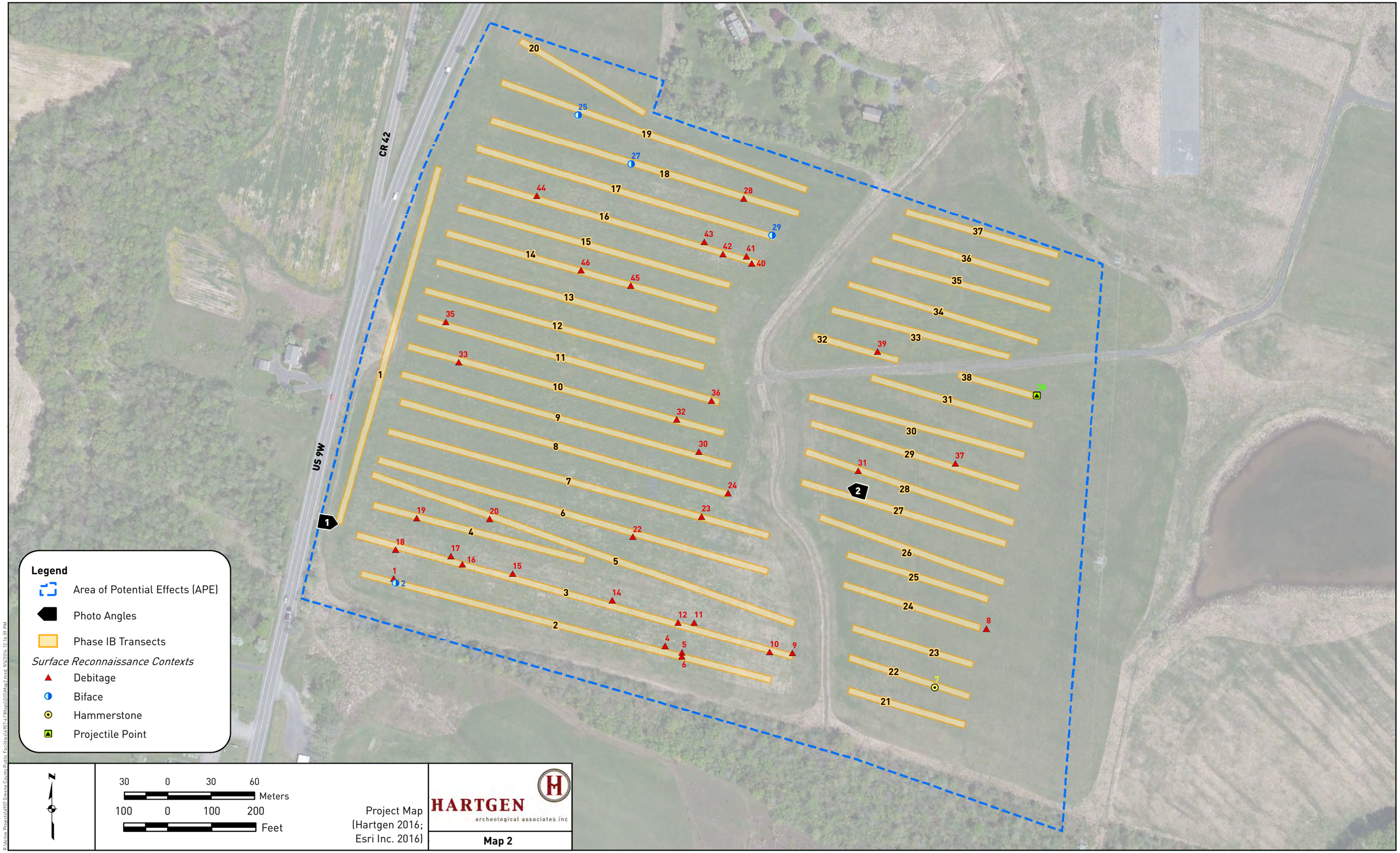
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US 9W
Legend
Area of Potential Effects (APE)
Photo Angles
Phase IB Transects
Surface Reconnaissance Contexts
Debitage
Biface
Hammerstone
Projectile Point
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30 0 30 60
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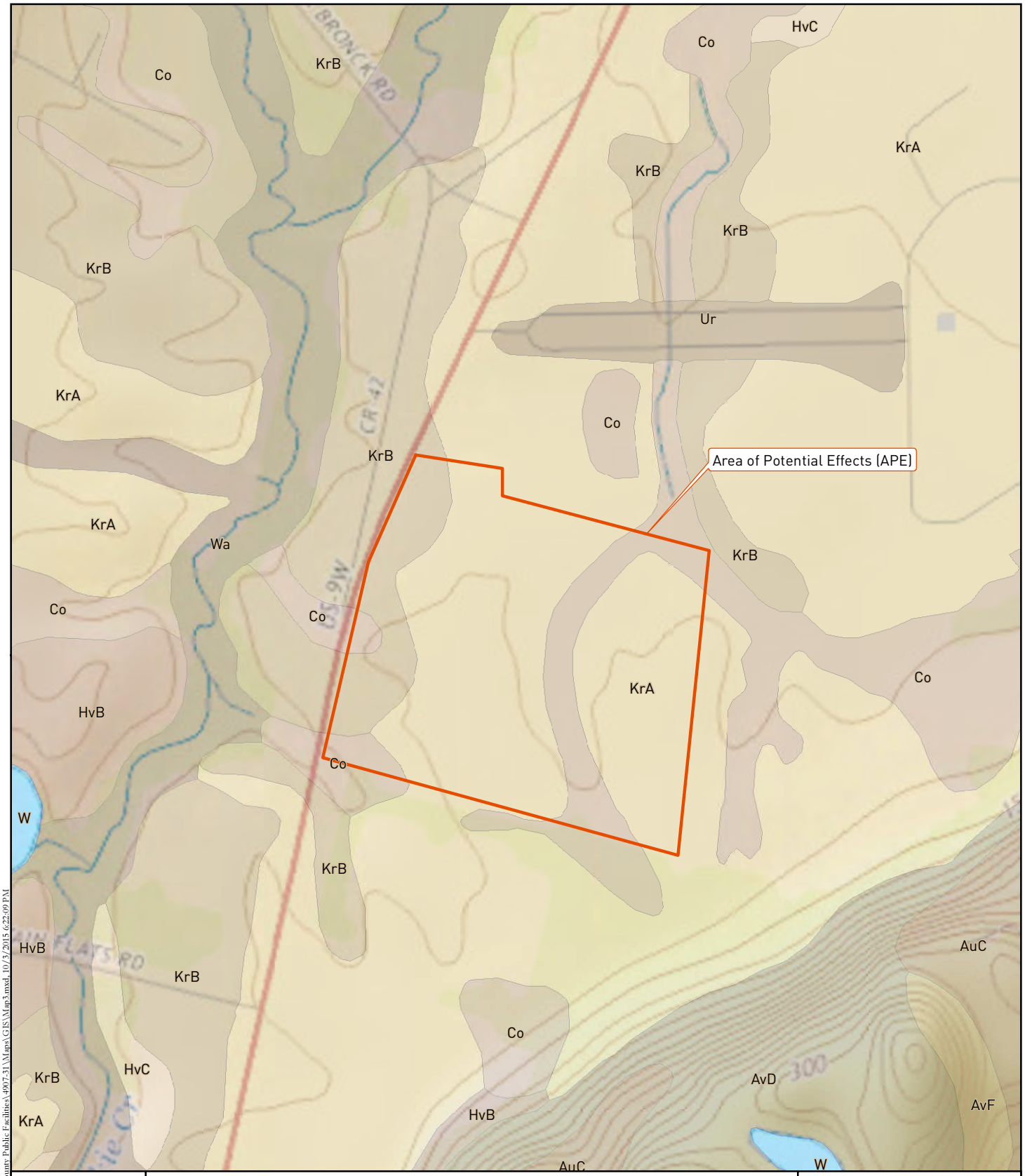
Feet
Project Map
(Hartgen 2016;
Esri Inc. 2016)
HARTGEN
archeological associates inc
Map 2



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Soil Map
(USDA NRCS 2006; USGS 2015)

HARTGEN archeological associates inc

Map 3

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Sauthier 1779

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Map 4

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Geil 1856

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Map 5

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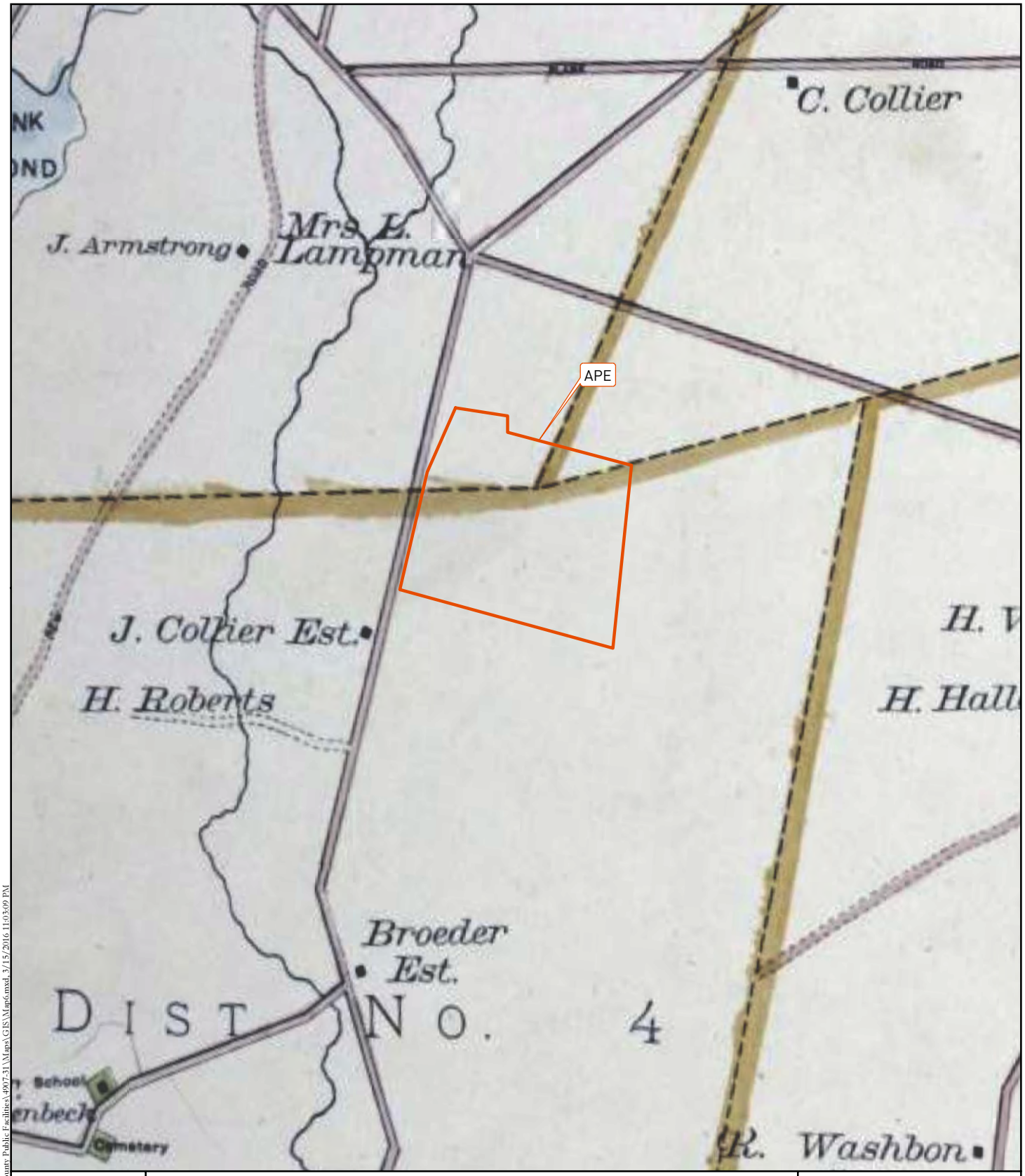

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Beers 1891

HARTGEN archeological associates inc

Map 6

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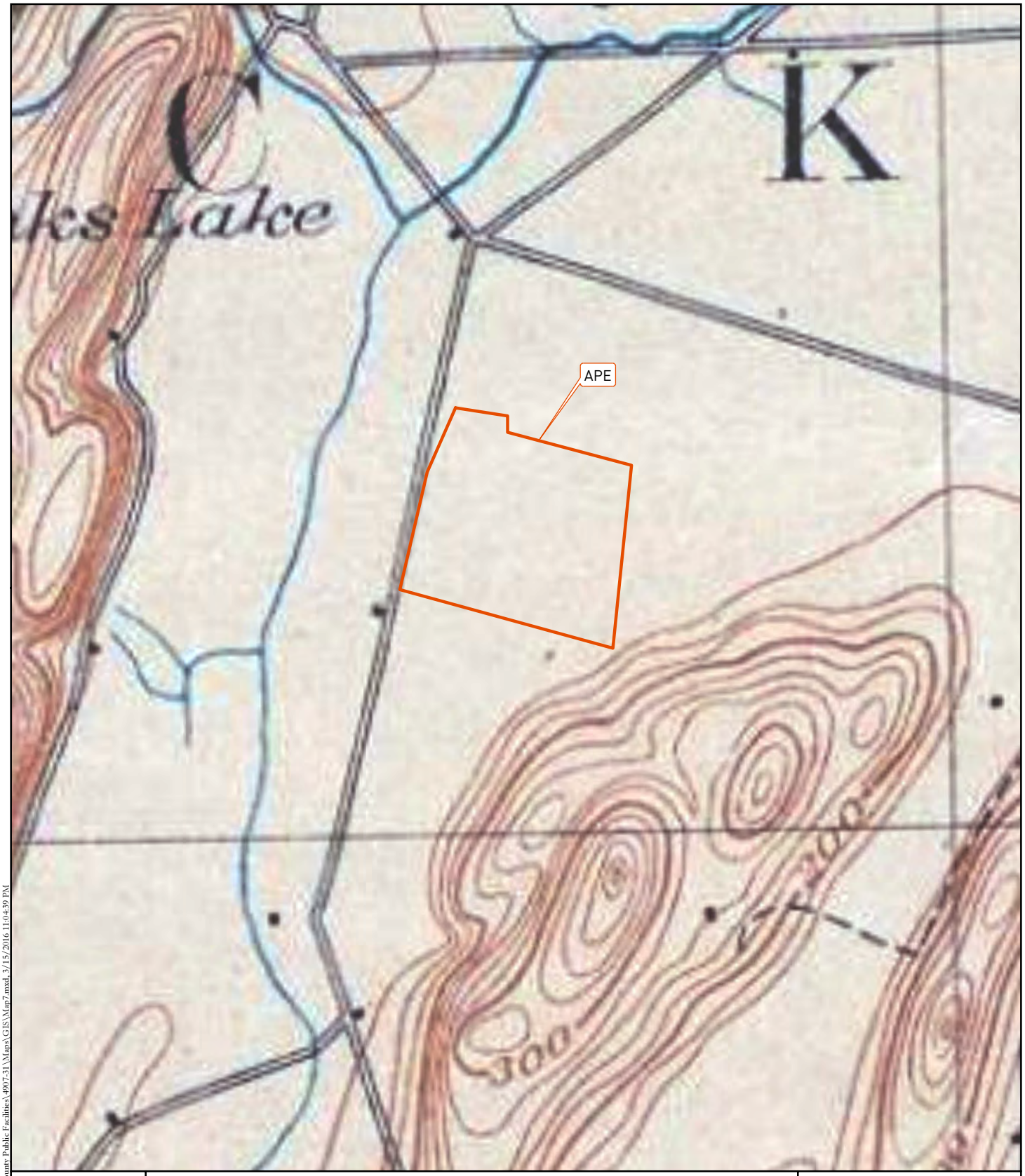

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150 0 150 300 Meters

USGS 1904

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Map 7

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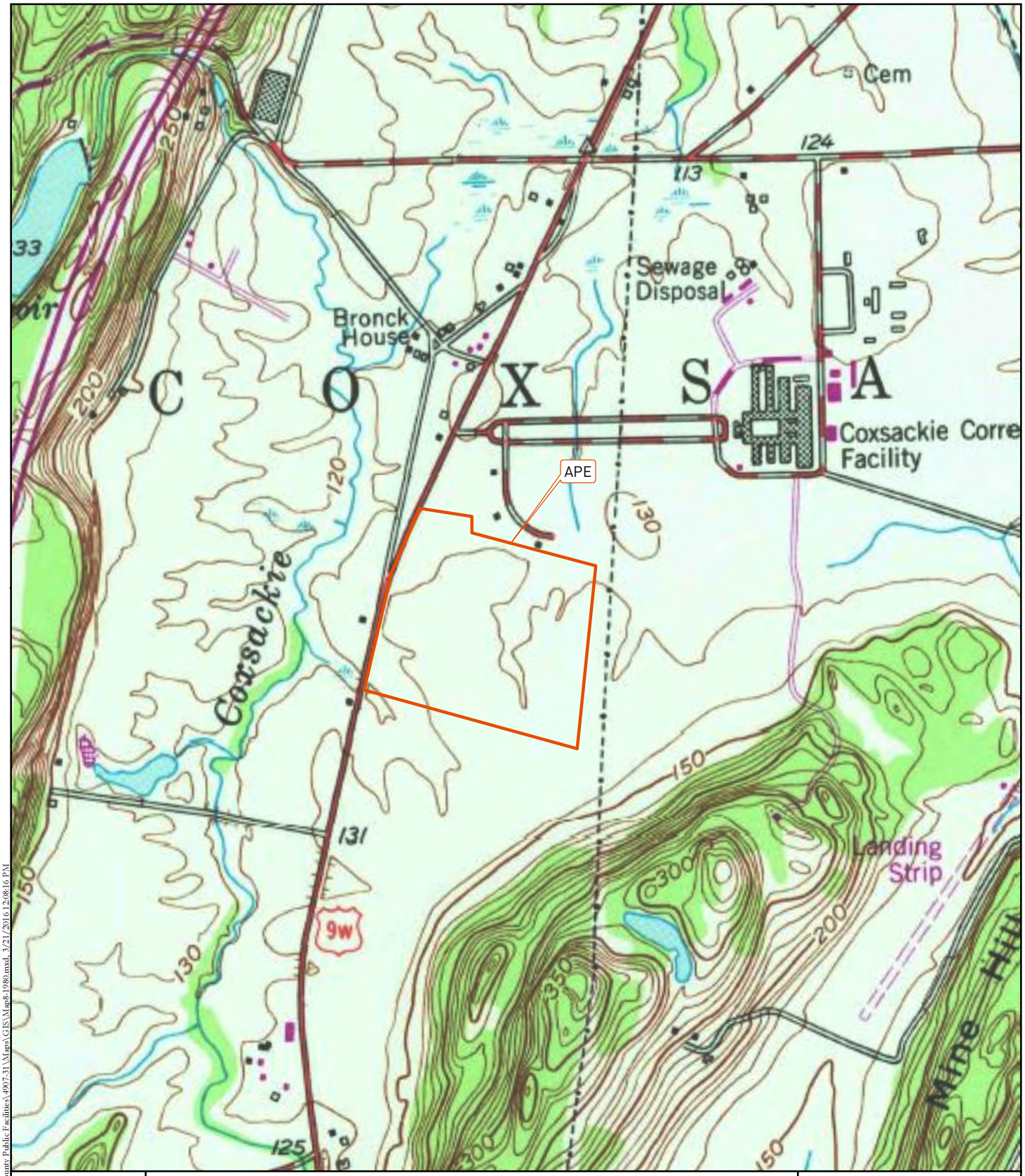

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150 0 150 300 Meters

USGS 1980

HARTGEN archeological associates inc

Map 8

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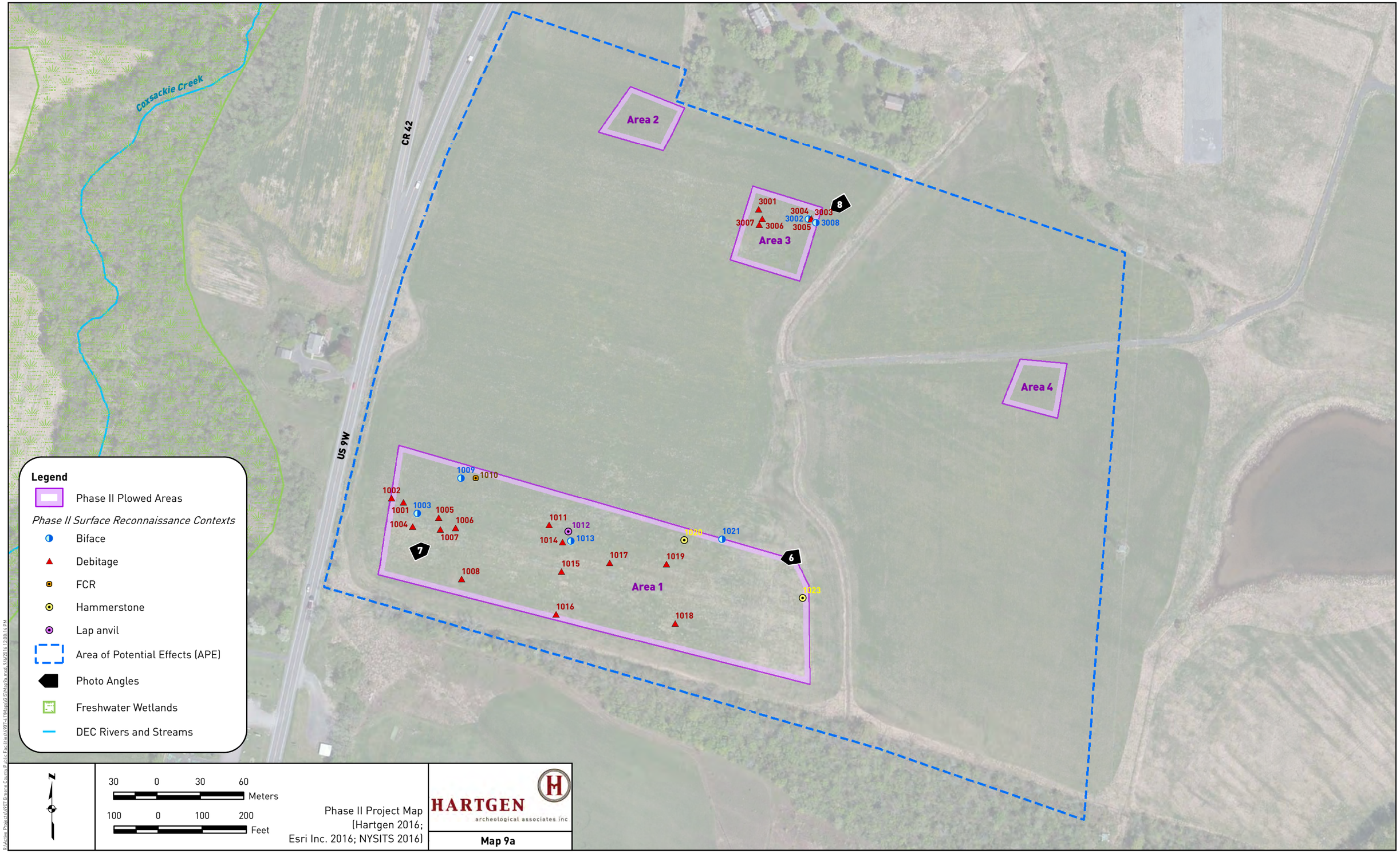
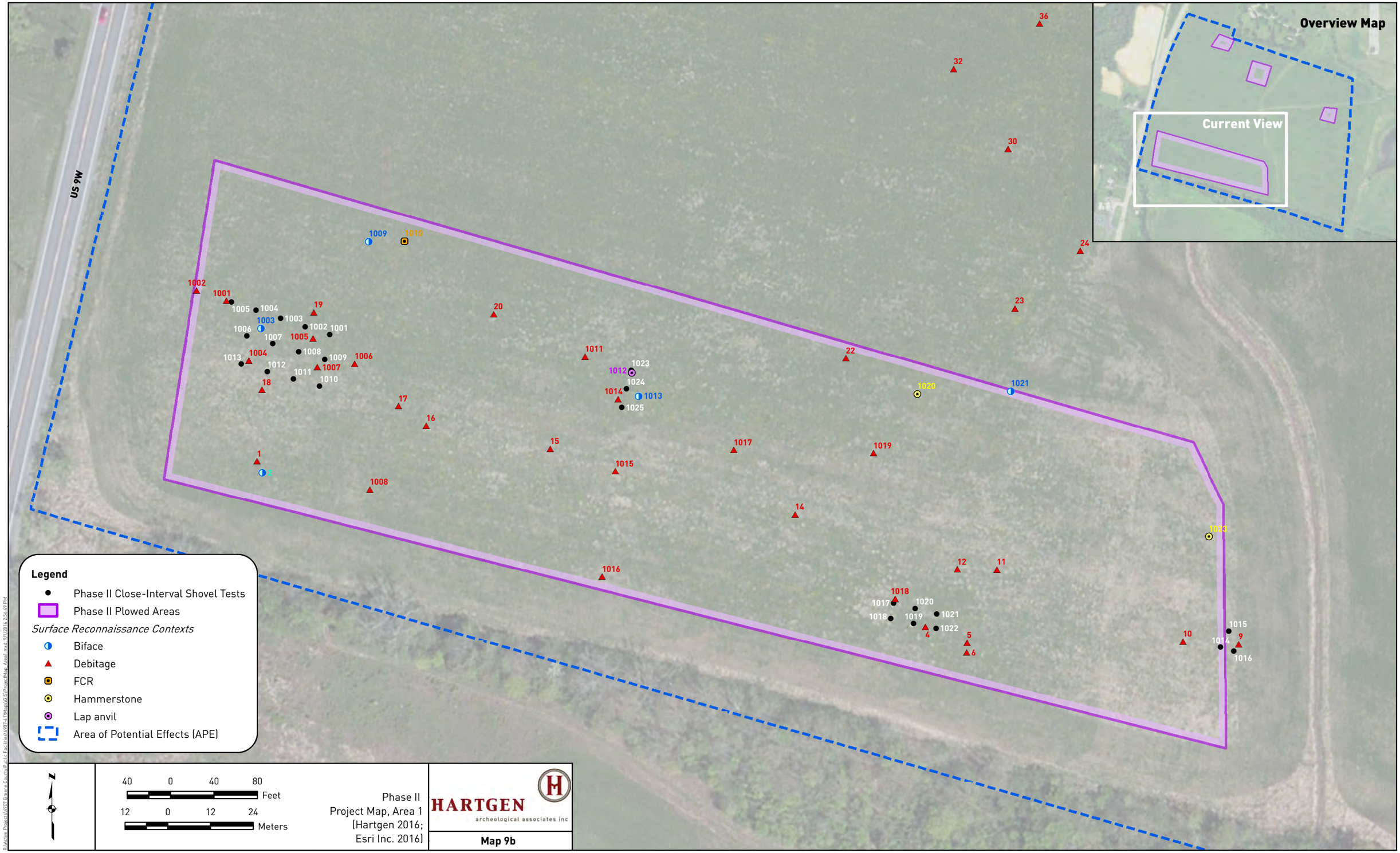
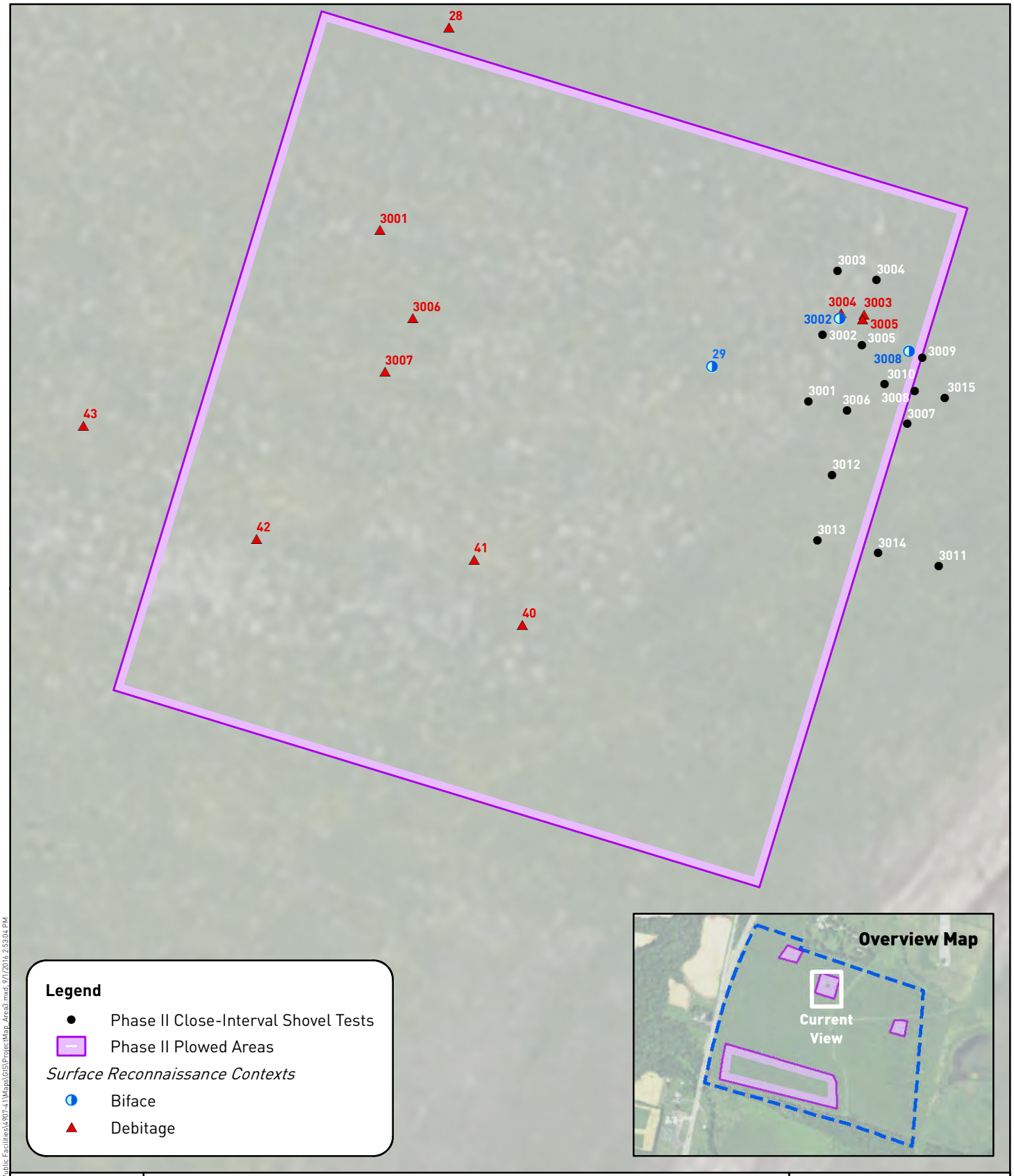


Phase II Project Map
(Hartgen 2016;
Esri Inc. 2016; NYSITS 2016)


Overview Map
Current View
US 9W
Legend
Phase II Close-Interval Shovel Tests
Phase II Plowed Areas
Surface Reconnaissance Contexts
Biface
Debitage
FCR
Hammerstone
Lap anvil
Area of Potential Effects (APE)
N
40 0 40 80 Feet
12 0 12 24 Meters
Phase II
Project Map, Area 1
(Hartgen 2016;
Esri Inc. 2016)
HARTGEN
archeological associates inc
Map 9b



N

5 0 5 10 Meters

16 0 16 32 Feet

Phase II
Project Map, Area 3
(Hartgen 2016;
Esri Inc. 2016)

HARTGEN
archeological associates inc

Map 9c

R:\Active Projects\4907 Greene County Public Facilities\4907-4\Maps\GIS\ProjectMap_Area3.mxd, 4/11/2016 2:53:04 PM

Photographs

Photo 1. View facing east across the Project depicting the plowed IB transects and Flint Mine Hill in the distance.

Photo 2. View facing west as archeologists surface collect.

Photo 3. Projectile point (SC #38) recovered in an isolated context, east of the stream. Fossils and inclusions in the ore suggests it is made from Devonian-aged chert and was not sourced from Flint Mine Hill.

Photo 4. Hammerstone (SC #6) recovered from the southern edge of the APE. Usewear is apparent around the periphery, with significant damage on the prominent ends of the stone.

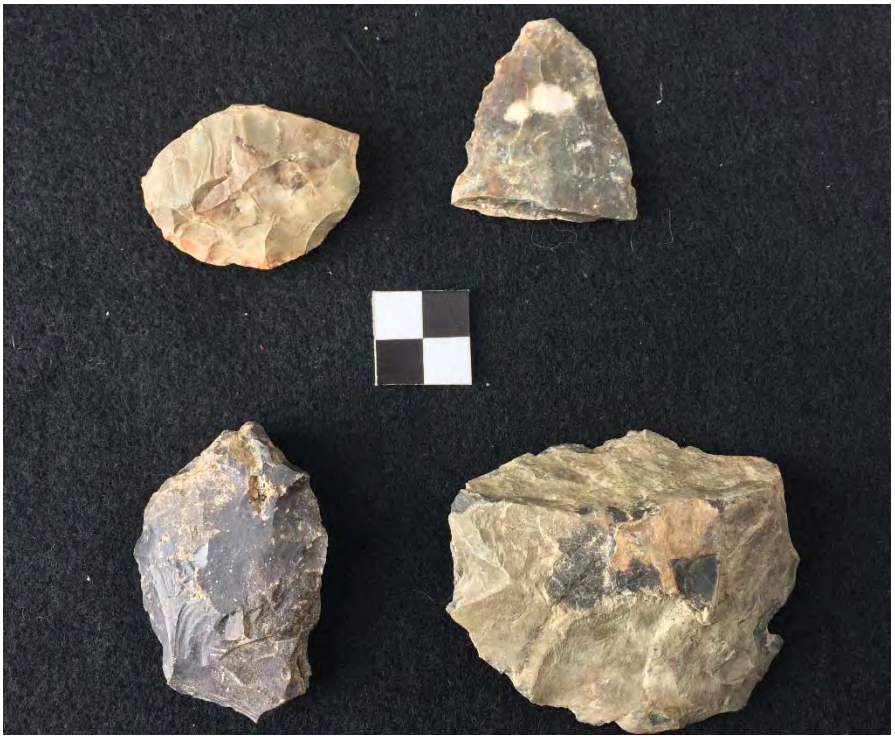


Photo 5. Bifaces from the top left to bottom left; SC #29, SC #27, SC #2 and SC #25. The example at the bottom left (SC #25) is made from Devonian-aged chert and the rest are Ordovician-aged chert likely sourced from Flint Mine Hill.

Photo 6. View facing southeast showing Phase II surface collection Area 1.

Photo 7. View facing northeast in Area 1 showing the slope and the change in elevation from south to north across the APE.

Photo 8. View facing southeast as close interval tests were excavated in Area 3, which identified the GCCF Site.

Photo 9. View facing southwest across Area 3 as it was surface collected a second time.

Photo 10. View facing east showing locations of tests as they were excavated at 5 meter (16 ft) intervals across Area 3. Flint Mine Hill is in the background.

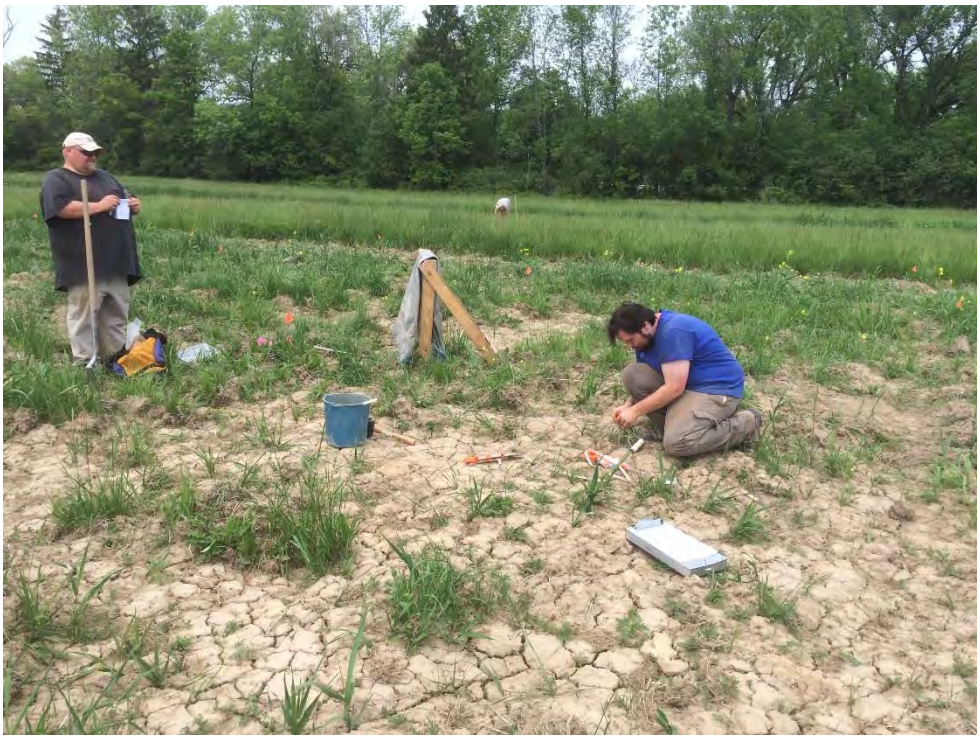


Photo 11. View facing north as units were set up along the (east) edge of Locus 1.

Photo 12. Stripped Area 4 in Locus 2, facing northeast.

Photo 13. Stripped Area 6 excavated along the edge of Locus 1; view faces northwest.

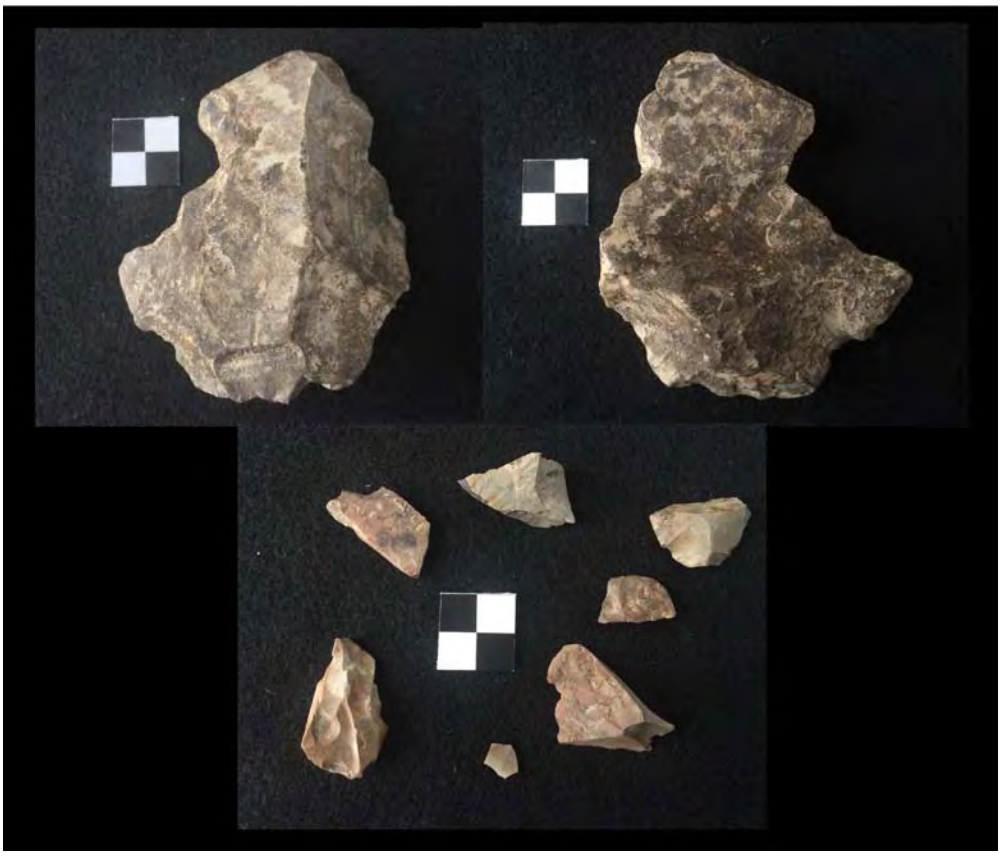


Photo 14. Sample of flakes from the GCCF Site. At the top is the dorsal and ventral sides of a large primary flake. At the bottom are samples of thinning flakes, some of which are reddened from heat treatment. The example on bottom left also has pot-lid fractures.

Photo 15. Sample of Bifaces recovered from the GCCF Site. Note the white to brown patina on all of the examples.

Photo 16. Examples of the some of the bifaces recovered from the Locus 1 during second surface collection of Area 3 and from the close interval shovel tests.

Photo 17. Biface fragments from the Locus 1 that likely came from the same biface.

Photo 18. Possible end scraper preforms from the GCCF Site; the example on the left is reddened from having been heat treated. Heat treatment alters the molecular structure of the chert, which appears to have made it less prone to weathering. The cross-section view on the bottom shows the thick, triangular, longitudinal profiles of these examples.

Appendix 1: Shovel Test Records

490741: Phase II Archeological Investigation, Greene County Public Facilities

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3101	32	1	silt clay		10yr 4/1	dark gray	
	49	2	clay		10yr 5/3	brown	subsoil
3102	33	1	loam clay		2.5yr 4/4	dusky red	
	44	2	clay		2.5yr 5/6	red	subsoil
3103	23	1	silt clay		10yr 4/2	dark grayish brown	
	44	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3104	24	1	silt clay		10yr 4/2	dark grayish brown	
	46	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3105	38	1	loam clay		2.5yr 5/6	red	
	39	2	loam clay		2.5yr 5/6	red	subsoil
3106	30	1	silt clay		10yr 4/2	dark grayish brown	
	50	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3107	33	1	loam clay		2.5yr 4/4	dusky red	
	44	2	clay		2.5yr 5/6	red	subsoil
3108	32	1	loam clay		2.5yr 4/4	dusky red	
	40	2	clay		2.5yr 5/6	red	subsoil
3109	32	1	loam clay		2.5yr 4/4	dusky red	
	40	2	clay		2.5yr 5/6	red	subsoil
3110	32	1	loam clay		2.5yr 4/4	dusky red	
	40	2	clay		2.5yr 5/6	red	subsoil
3111	29	1	silt clay		10yr 4/2	dark grayish brown	
	50	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3112	20	1	silt clay		10yr 4/1	dark gray	
	35	2	silt clay		10yr 5/4 10yr 5/6	yellowish brown yellowish brown	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3113	32	1	loam clay		2.5yr 4/4	dusky red	
	40	2	clay		2.5yr 5/6	red	subsoil
3114	26	1	loam clay		10yr 4/2	dark grayish brown	
	42	2	clay		10yr 5/4	yellowish brown	subsoil
3115	29	1	loam clay		10yr 4/2	dark grayish brown	
	44	2	clay		10yr 5/4	yellowish brown	subsoil
3116	29	1	loam clay		10yr 4/2	dark grayish brown	
	47	2	clay		10yr 5/4	yellowish brown	subsoil
3117	25	1	loam clay		10yr 4/2	dark grayish brown	
	43	2	clay		10yr 5/4	yellowish brown	subsoil
3118	32	1	loam clay		10yr 4/2	dark grayish brown	
	49	2	clay		10yr 5/4	yellowish brown	subsoil
3119	53	2	clay		10yr 5/4	yellowish brown	subsoil
3120	24	1	loam clay		10yr 4/2	dark grayish brown	
	40	2	clay		10yr 5/4	yellowish brown	subsoil
3121	38	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3122	30	1	silt loam clay		10yr 4/3	brown	
	42	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3123	24	1	silt loam clay		10yr 4/3	brown	
	38	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3124	26	1	silt loam clay		10yr 4/3	brown	
	40	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3125	23	1	silt loam clay		10yr 4/3	brown	
	36	2	clay		7.5yr 5/4 10yr 5/6	brown yellowish brown	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3126	27	1	silt loam clay		10yr 4/3	brown	
	41	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3127	23	1	silt loam clay		10yr 4/3	brown	
	37	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3128	23	1	silt loam clay		10yr 4/3	brown	
	34	2	clay		10yr 5/6 10yr 7/4	yellowish brown very pale brown	subsoil
3129	24	1	loam clay		10yr 4/2	dark grayish brown	
	40	2	clay		10yr 5/4	yellowish brown	subsoil
3130	33	1	silt clay		10yr 4/1	dark gray	
	46	2	clay		10yr 5/4	yellowish brown	subsoil
3131	26	1	silt clay		10yr 4/2	dark grayish brown	
	47	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3132	27	1	silt clay		10yr 4/2	dark grayish brown	
	49	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3133	29	1	silt clay		10yr 4/2	dark grayish brown	
	51	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3134	31	1	silt clay		10yr 4/2	dark grayish brown	
	50	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3135	32	1	silt clay		10yr 4/2	dark grayish brown	
	54	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3136	23	1	silt clay		10yr 4/2	dark grayish brown	
	45	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3137	27	1	silt clay		10yr 4/2	dark grayish brown	
	47	2	silt clay		10yr 4/4	dark yellowish brown	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3138	49	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3139	37	1	silt clay		10yr 4/2	dark grayish brown	
	55	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3140	30	1	silt clay		10yr 4/2	dark grayish brown	
	52	2	clay		10yr 4/4	dark yellowish brown	subsoil
3141	27	1	silt clay		10yr 4/1	dark gray	
	45	2	silt clay		10yr 5/4 10yr 5/3	yellowish brown brown	subsoil
3142	35	2	silt clay		10yr 5/4 10yr 5/3	yellowish brown brown	subsoil
3143	35	2	silt clay		10yr 5/4 10yr 5/6	yellowish brown yellowish brown	subsoil
3144	25	1	silt clay		10yr 4/1	dark gray	
	40	2	silt clay		10yr 5/3 10yr 5/6	brown yellowish brown	subsoil
3145	30	1	silt clay		10yr 4/1	dark gray	
	45	2	silt clay		10yr 5/6 10yr 5/3	yellowish brown brown	subsoil
3146	48	2	silt clay		10yr 5/4	yellowish brown	subsoil
3147	41	1	silt clay		10yr 4/1	dark gray	
	56	2	silt clay		10yr 5/6	yellowish brown	subsoil
3148	24	1	silt clay		10yr 4/1	dark gray	
	39	2	clay		10yr 6/4	light yellowish brown	subsoil
3149	39	2	clay		10yr 5/4	yellowish brown	subsoil
3150	31	1	silt clay		10yr 4/1	dark gray	
	46	2	clay		10yr 5/4	yellowish brown	subsoil
3151	27	1	loam clay		2.5yr 4/4	dusky red	
	37	2	clay		2.5yr 5/6	red	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3152	28	1	loam clay		2.5yr 4/4	dusky red	
	37	2	clay		2.5yr 5/6	red	subsoil
3153	30	1	loam clay		2.5yr 4/4	dusky red	
	41	2	clay		2.5yr 5/6	red	subsoil
3154	37	1	loam clay		2.5yr 4/4	dusky red	
	46	2	clay		2.5yr 5/6	red	subsoil
3155	40	2	clay		2.5yr 5/6	red	subsoil
3156	40	2	clay		2.5yr 5/6	red	subsoil
3157	37	2	clay		2.5yr 5/6	red	subsoil
3158	41	2	clay		2.5yr 5/6	red	subsoil
3159	30	1	loam clay		2.5yr 4/4	dusky red	
	41	2	clay		2.5yr 5/6	red	subsoil
3160	43	2	clay		2.5yr 5/6	red	water
3161	51	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3162	18	1	silt clay		10yr 4/2	dark grayish brown	
	41	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3163	29	1	silt clay		10yr 4/2	dark grayish brown	
	51	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3164	20	1	silt clay		10yr 4/1	dark gray	
	35	2	clay		10yr 5/3	brown	subsoil
3165	22	1	silt clay		10yr 4/1	dark gray	
	40	2	clay		10yr 5/3	brown	subsoil
3166	25	1	silt clay		10yr 4/1	dark gray	
	40	2	clay		10yr 5/4	yellowish brown	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3167	23	1	silt clay		10yr 4/2	dark grayish brown	
	45	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3168	22	1	loam clay		2.5yr 4/4	dusky red	
	32	2	clay		2.5yr 5/6	red	subsoil
3169	26	1	loam clay		2.5yr 4/4	dusky red	
	36	2	clay		2.5yr 5/6	red	subsoil
3170	33	1	silt clay		10yr 4/1	dark gray	
	46	2	clay		10yr 5/4	yellowish brown	subsoil
3171	33	1	silt clay		10yr 4/1	dark gray	
	48	2	clay		10yr 5/4	yellowish brown	subsoil
3172	34	1	silt clay		10yr 4/1	dark gray	
	48	2	clay		10yr 5/3	brown	subsoil
3173	32	1	loam clay		2.5yr 4/4	dusky red	
	40	2	clay		2.5yr 5/6	red	subsoil
3174	33	1	silt clay		10yr 4/2	dark grayish brown	
	54	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3175	23	1	loam clay		2.5yr 4/4	dusky red	
	33	2	clay		2.5yr 5/6	red	subsoil
3176	30	1	loam clay		10yr 4/2	dark grayish brown	
	48	2	clay		10yr 5/4	yellowish brown	subsoil
3177	29	1	loam clay		10yr 4/2	dark grayish brown	
	45	2	clay		10yr 5/4	yellowish brown	subsoil
3178	33	1	silt clay		10yr 4/1	dark gray	
	49	2	clay		10yr 5/4	yellowish brown	subsoil
3179	33	1	silt clay		10yr 4/1	dark gray	
	46	2	clay		10yr 5/4	yellowish brown	subsoil

Shovel Test Records

	Ending Depth	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
3180	30	1	silt clay		10yr 4/2	dark grayish brown	
	52	2	silt clay		10yr 4/4	dark yellowish brown	subsoil
3181	40	2	clay		2.5yr 5/6	red	subsoil
3							
3119	37	1	loam clay		10yr 4/2	dark grayish brown	
3121	22	1	silt loam		10yr 4/3	brown	
3138	28	1	silt clay		10yr 4/2	dark grayish brown	
3142	19	1	silt clay		10yr 4/1	dark gray	
3143	20	1	silt clay		10yr 4/1	dark gray	
3146	34	1	silt clay		10yr 4/1	dark gray	
3149	23	1	silt clay		10yr 4/1	dark gray	
3155	30	1	loam clay		2.5yr 4/4	dusky red	
3156	30	1	loam clay		2.5yr 4/4	dusky red	
3157	30	1	loam clay		2.5yr 4/4	dusky red	
3158	31	1	loam clay		2.5yr 4/4	dusky red	
3160	30	1	loam clay		2.5yr 4/4	dusky red	
3161	29	1	silt clay		10yr 4/2	dark grayish brown	
3181	32	1	loam clay		2.5yr 4/4	dusky red	

Appendix 2: Artifact Inventory

Phase IB Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-31

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
Tr 1								
			1	1	1	debitage	siliceous shale	2.3
Tr 1								
			2	1	1	biface	chert	99.5
Tr 1								
			3	1	1	white bodied	refined earthenware	3.4
Tr 1								
			4	1	1	mineral sample	unidentified stone	3.2
Tr 1								
			5	1	1	scraper	chert	14.3
Tr 1								
			6	1	1	hammerstone	quartzite	272.6
Tr 22								
			7	1	1	debitage	chert	1.8
Tr 24								
			8	1	1	mineral sample	chert	1.9
Tr 3								
			9	1	3	debitage	chert	80.3
Tr 3								
			10	1	1	mineral sample	unidentified stone	23.9
Tr 3								
			11	1	1	biface	chert	17.2
Tr 3								
			12	1	1	scraper	chert	45.5

Phase IB Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-31

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
Tr 3								
			13	1	1	redware	coarse earthenware	3.6
Tr 3								
			14	1	1	mineral sample	unidentified stone	0.7
Tr 15								
			15	1	1	debitage	chert	0.7
Tr 3								
			16	1	1	chopper	unidentified stone	537.5
Tr 3								
			17	1	1	debitage	chert	0.1
Tr 3								
			18	1	1	mineral sample	unidentified stone	144.7
Tr 4								
			19	1	1	debitage	chert	12.7
Tr 5								
			20	1	1	fire-cracked rock	quartzite	65.4
Tr 5								
			21	1	1	whiteware	refined earthenware	1.3
Tr 6								
			22	1	1	debitage	chert	1.4
Tr 7								
			23	1	1	debitage	quartz	3.0
Tr 8								

Phase IB Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-31

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
			24	1	1	debitage	chert	3.6
Tr 19								
			25	1	1	biface	chert	39.9
			25	2	1	debitage	chert	1.4
Tr 18								
			26	1	1	unidentified	glass	2.7
Tr 18								
			27	1	1	biface	chert	12.1
Tr 18								
			28	1	1	debitage	chert	0.3
Tr 19								
			29	1	1	biface	chert	25.4
Tr 9								
			30	1	1	debitage	chert	10.3
Tr 28								
			31	1	1	debitage	chert	0.4
Tr 10								
			32	1	2	debitage	chert	4.3
Tr 10								
			33	1	1	debitage	chert	0.7
Tr 10								
			34	1	1	vessel	glass	0.5
Tr 11								

Phase IB Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-31

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
			35	1	1	debitage	chert	0.1
Tr 11								
			36	1	1	debitage	chert	0.9
Tr 29								
			37	1	1	fire-cracked rock	quartzite	22.6
Tr 38								
			38	1	1	projectile point	chert	15.7
				1.1	*1*	*projectile point, adena, complete, chert, L 5.9, W 2.7, T 1.0 cm*		*15.7*
Tr 32								
			39	1	1	debitage	chert	0.3
Tr. 16								
			40	1	1	debitage	chert	3.7
TR 16								
			41	1	1	debitage	chert	5.1
Tr 16								
			42	1	3	debitage	chert	7.1
Tr 16								
			43	1	1	debitage	chert	1.6
Tr 16								
			44	1	1	debitage	chert	0.6
			44	2	1	tobacco pipe	ball clay-white	2.8
Tr 14								
			45	1	1	debitage	chert	3.1
Tr. 14								

Phase IB Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-31

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
			46	1	1	debitage	chert	1.5

Phase II Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-41

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
GP STRIPPED AREA 6			240	1	2	mineral sample	chert	47.4
GP STRIPPED AREA 6			240	2	3	mineral sample	unidentified stone	5.9
GP STRIPPED AREA 6			240	3	1	scrap metal	copper alloy	7.2
SC 3101			202	1	1	mineral sample	chert	20.8
STP 3109	1		201	1	2	debitage	chert	12.1
				1.1	*2*	*debitage, thinning flake, chert*		*12.1*
STP 3113	1		243	1	1	debitage	chert	0.1
				1.1	*1*	*debitage, trim flake, chert*		*0.1*
STP 3114	1		205	1	4	debitage	chert	3.2
				1.1	*2*	*debitage, thinning flake, chert, fragment*		*2.6*
				1.2	*2*	*debitage, trim flake, chert, fragment*		*0.6*
STP 3120	1		207	1	1	tin-glazed	earthenware	1.1
U 1	1		242	1	1	debitage	chert	0.6
				1.1	*1*	*debitage, thinning flake, chert*		*0.6*

Phase II Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-41, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
GP 3STRIPPED AREA 2			239	1	1	debitage	chert	11.0
				1.1	*1*	*debitage, thinning flake, chert*		*11.0*
GP 3STRIPPED AREA 4			241	1	2	projectile point	chert	8.1
				1.1	*1*	*projectile point, tip, chert, W 2.1, T 0.6 cm*		*4.1*
				1.2	*1*	*projectile point, midsection, chert, W 2.0, T 0.5 cm*		*4.0*
SC 3102			203	1	1	debitage	chert	6.6
				1.1	*1*	*debitage, retouched flake, fragment*		*6.6*
SC 3103			204	1	3	debitage	chert	2.7
				1.1	*3*	*debitage, thinning flake, chert*		*2.7*
SC 3104			209	1	1	biface	chert	6.3
				1.1	*1*	*biface, unfinished, chert, fragment, W 3.3, T 1.1 cm*		*6.3*
SC 3104			209	2	1	debitage	chert	3.6
				2.1	*1*	*debitage, thinning flake, chert*		*3.6*
SC 3105			220	1	1	biface	chert	10.8
				1.1	*1*	*biface, unfinished, chert, W 3.6, T 1.0 cm*		*10.8*
SC 3106			221	1	1	biface	chert	11.3
				1.1	*1*	*biface, chert, fragment, W 2.6, T 1.1 cm*		*11.3*
SC 3106			221	2	1	debitage	chert	0.2
				2.1	*1*	*debitage, trim flake, chert*		*0.2*
SC 3107			223	1	1	biface	chert	24.3
				1.1	*1*	*biface, midsection, chert, W 3.8, T 1.1 cm*		*24.3*
SC 3108			224	1	1	biface	chert	13.2
				1.1	*1*	*biface, unfinished, chert, T 1.2 cm*		*13.2*

Phase II Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-41, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 3108			224	2	1	debitage	chert	3.9
				2.1	*1*	*debitage, thinning flake, chert*		*3.9*
SC 3108			224	3	1	mineral sample	chert	10.0
SC 3109			225	1	1	biface	chert	9.1
				1.1	*1*	*biface, midsection, chert, W 3.9, T 0.9 cm*		*9.1*
SC 3110			226	1	1	debitage	chert	4.4
				1.1	*1*	*debitage, thinning flake, chert*		*4.4*
SC 3111			227	1	1	debitage	chert	0.6
				1.1	*1*	*debitage, trim flake, chert*		*0.6*
SC 3112			228	1	1	debitage	chert	1.1
				1.1	*1*	*debitage, thinning flake, chert*		*1.1*
SC 3113			229	1	1	debitage	chert	4.1
				1.1	*1*	*debitage, thinning flake, chert*		*4.1*
SC 3115			231	1	1	faunal bone	bone	29.4
SC 3115			231	2	1	unidentified	mineral	7.9
SC 3116			232	1	1	fire-cracked rock	quartzite	178.5
SC 3117			233	1	1	biface	chert	15.6
				1.1	*1*	*biface, unfinished, chert, L 4.6, W 3.0, T 1.0 cm*		*15.6*
SC 3118			234	1	1	debitage	chert	0.6
				1.1	*1*	*debitage, thinning flake, chert*		*0.6*
SC 3119			235	1	1	biface	chert	30.4

Phase II Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-41, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				1.1	*1*	*biface, unfinished, chert, T 1.4 cm*		*30.4*
STP 3119	1		206	1	1	debitage	chert	2.2
				1.1	*1*	*debitage, thinning flake, chert, fragment*		*2.2*
STP 3121	1		208	1	1	scraper	chert	4.6
				1.1	*1*	*scraper, end-scraper, chert, fragment, L 3.2, T 0.5 cm*		*4.6*
STP 3138	1		210	1	1	fire-cracked rock	unidentified stone	24.3
STP 3142	1		211	1	1	debitage	chert	3.9
				1.1	*1*	*debitage, thinning flake, chert*		*3.9*
STP 3142	1		211	2	1	mineral sample	unidentified stone	0.3
STP 3143	1		222	1	1	biface	chert	22.7
				1.1	*1*	*biface, chert, W 4.6, T 1.4 cm*		*22.7*
STP 3146	1		212	1	1	debitage	chert	1.8
				1.1	*1*	*debitage, thinning flake, chert*		*1.8*
STP 3149	1		213	1	1	biface	chert	14.0
				1.1	*1*	*biface, unfinished, chert, W 2.8, T 1.0 cm*		*14.0*
STP 3155	1		214	1	1	debitage	chert	3.9
				1.1	*1*	*debitage, thinning flake*		*3.9*
STP 3155	1		214	2	1	mineral sample	chert	5.2
STP 3155	1		214	3	1	mineral sample	unidentified stone	5.5
STP 3156	1		215	1	1	debitage	chert	0.4
				1.1	*1*	*debitage, trim flake, chert*		*0.4*
STP 3156	1		215	2	2	mineral sample	chert	8.7

Phase II Archeological Investigation, Greene County Public Facilities

Artifact Inventory, HAA# 4907-41, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 3157	1		216	1	1	debitage	jasper	1.8
				1.1	*1*	*debitage, thinning flake, jasper*		*1.8*
STP 3157	1		216	2	1	mineral sample	unidentified stone	88.4
STP 3158	1		217	1	1	biface	chert	16.9
				1.1	*1*	*biface, unfinished, chert, W 4.1, T 1.3 cm*		*16.9*
STP 3160	1		218	1	1	debitage	unidentified stone	1.3
				1.1	*1*	*debitage, thinning flake, unidentified stone*		*1.3*
STP 3161	1		219	1	1	debitage	chert	3.8
				1.1	*1*	*debitage, thinning flake, chert*		*3.8*
STP 3161	1		219	2	1	fire-cracked rock	unidentified stone	31.2
STP 3181	1		238	1	1	debitage	chert	0.2
				1.1	*1*	*debitage, trim flake, chert*		*0.2*
U 2	1		236	1	3	debitage	chert	1.7
				1.1	*1*	*debitage, thinning flake, chert*		*1.4*
				1.2	*2*	*debitage, trim flake, chert*		*0.3*
U 2	1		236	2	1	mineral sample	unidentified stone	5.6
U 3	1		237	1	1	debitage	chert	7.3
				1.1	*1*	*debitage, thinning flake, chert*		*7.3*