Current Research in Ohio Archaeology 2026
www.ohioarchaeology.org

Site 33CA446, a Late Archaic and Early Woodland site in Carroll County, Ohio

Craig S. Keener and Kevin Nye
Professional Archaeological Services Team

Abstract

Site 33CA446 is a Late Archaic and early Woodland encampment that was investigated by cultural resource investigations in 2014 and 2015. The site is located on a terrace overlooking a floodplain of Indian Fork in Union Township, Carroll County, Ohio, south of the City of Carrollton. This short article summarizes the initial survey work, the findings, and assessment of the site placing it into the wider context of similar site types in the local and regional areas. Surface collection was successful in obtaining a large artifact assemblage that provided diagnostic material and information on horizontal patterning. The article demonstrates the importance of applying traditional survey techniques (surface collection) in tandem with geophysical analysis as a holistic approach to better assess eligibility.

Keywords: 33CA446, Late Archaic, Early Woodland, thick grit tempered pottery, distributional data

Phase I Assessment

The area containing 33CA446 was surveyed in 2014 and 2015 by Professional Archaeological Services Team (PAST) for a proposed deep mine facility associated with the Rosebud Mining Company. The site was identified during Phase I surface collection at 7.5 m (25 ft) spaced pedestrian transects of a tilled field situated on a terrace that looks across the valley floor of Indian Fork to the north (Keener 2015a) (Figures 1-2). The surface collection found a relatively large sized lithic deposit focused on the top of the terrace that contained 163 artifacts. One hundred and eight items (66.25% of the assemblage) were fire cracked rock (FCR) indicating a potential for subsurface features. A total of 25% of the remaining artifacts were tools which included projectile points, scrapers, pitted stones, modified flakes, a biface fragment, and drill. All six projectile points were diagnostic to the Late Archaic and early Early Woodland periods. The site was deemed potentially eligible to National Register of Historic Places under Criterion D and additional Phase II assessment was recommended.

Phase II Assessment

Surface Collection

Phase II assessment involved more intensive surface collection of the site, the application of targeted geophysical survey, and shovel test unit ground truthing (Keener 2015b). The second surface collection involved 7.5 m (25 ft) spaced pedestrian transects walked in the opposite

direction to those of the Phase I survey, thereby criss crossing the site. This additional survey resulted in the recovery of 494 artifacts and bringing the total surface collected assemblage to 657 items. It also refined the site dimensions to 217 m by 232.7 m (712 ft by 763 ft) with a total site area of 27,063 m^2 (291,313 ft^2). Figure 3 shows the total artifact distribution separated into general artifact types (e.g., FCR, flint debitage, tools, etc.). Figures 4 and 5 show artifact densities across the site landform based on flint debitage and FCR, respectively. Both figures show heavier concentrations and clustering of artifacts along the bluff edge of the terrace landform, particularly in the northeastern portion of the site. This information was used to help denote block placement for the geophysical survey.

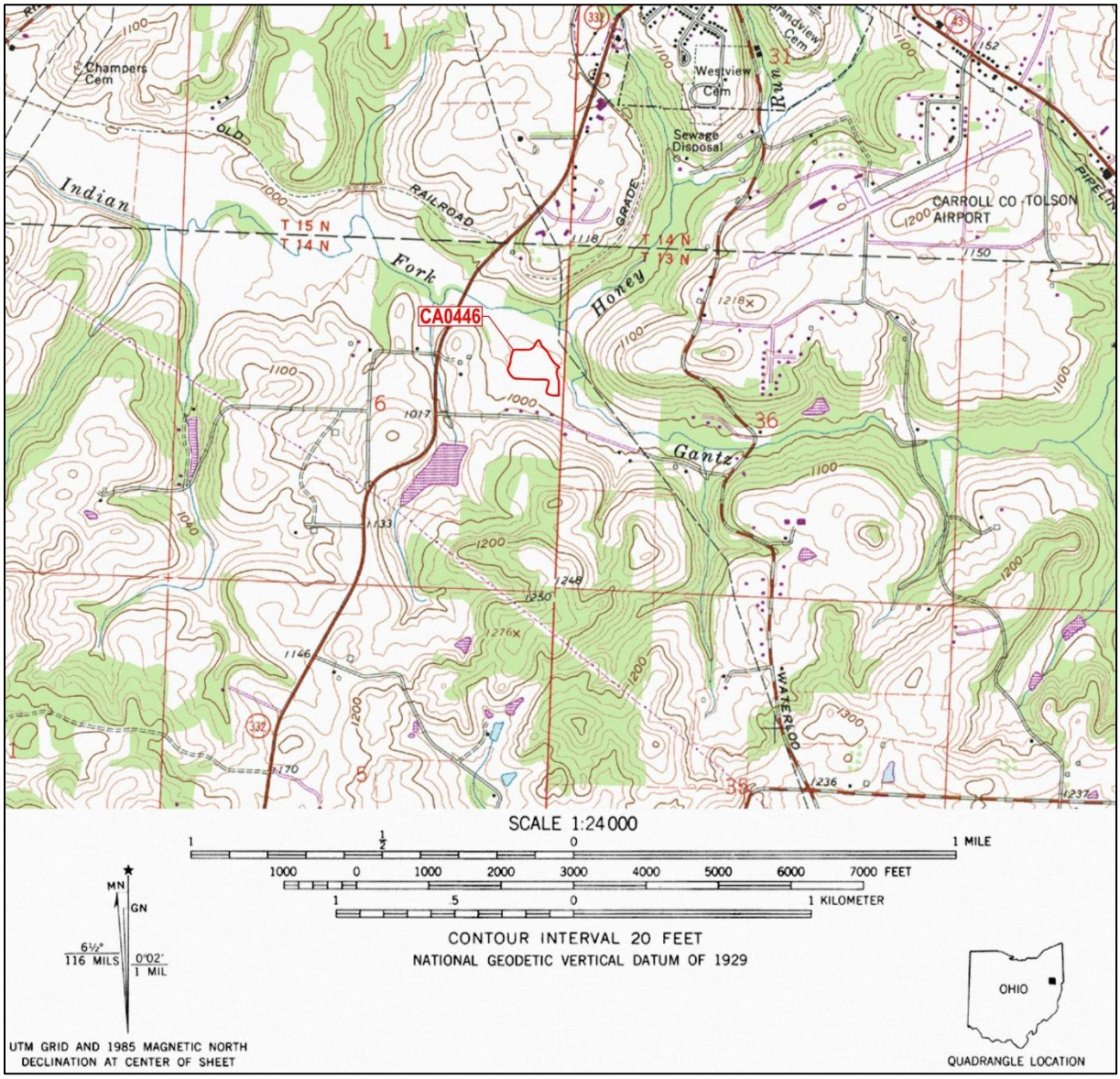


Figure 1. Portion of the USGS 1959 (Photo revised 1985) Carrollton Quadrangle, Ohio, 7.5 Minute Series (Topographic) map showing location of CA0446.



Figure 2. View of landform containing 33CA446, from east edge of site facing west.

Geophysical Survey

A total of twenty 20 m by 20 m blocks and one 20 m by 16 m block were placed across the landform based on artifact concentrations (Figures 3-5). The geophysical survey was performed by Russell Quick of CRA, Inc who used a Duplexed FM-256 gradiometer along transects spaced 50cm apart in each block (Quick 2015). A total of 52 magnetic anomalies were identified (Figure 6). These anomalies were color coded as to their potential to yield a precontact feature. The top 20 anomalies with the greatest potential were selected for soil coring. The purpose of the coring was to look for mottled soil matrices, charcoal, burnt clay and/or FCR fragments below the plow zone that may be indicative of a cultural feature. Of the top 20 anomalies, eight had positive coring results, and became the focus of test unit excavation.

Ground-truthing positive soil cores with plow zone removal is an absolute necessity to confirm if a positive core is an actual cultural feature. Coring is a limited sampling method and natural features (e.g., root stains, rodent burrows, etc.) may appear to be cultural in nature resulting in false positive results. Core analysis can also miss leached features that have subtle mottling and/or coloration differences with the surrounding subsoil. Using coring alone to determine the presence or absence of a cultural feature is an unacceptable practice that if employed it will not effectively assess the accuracy of a geophysical survey.

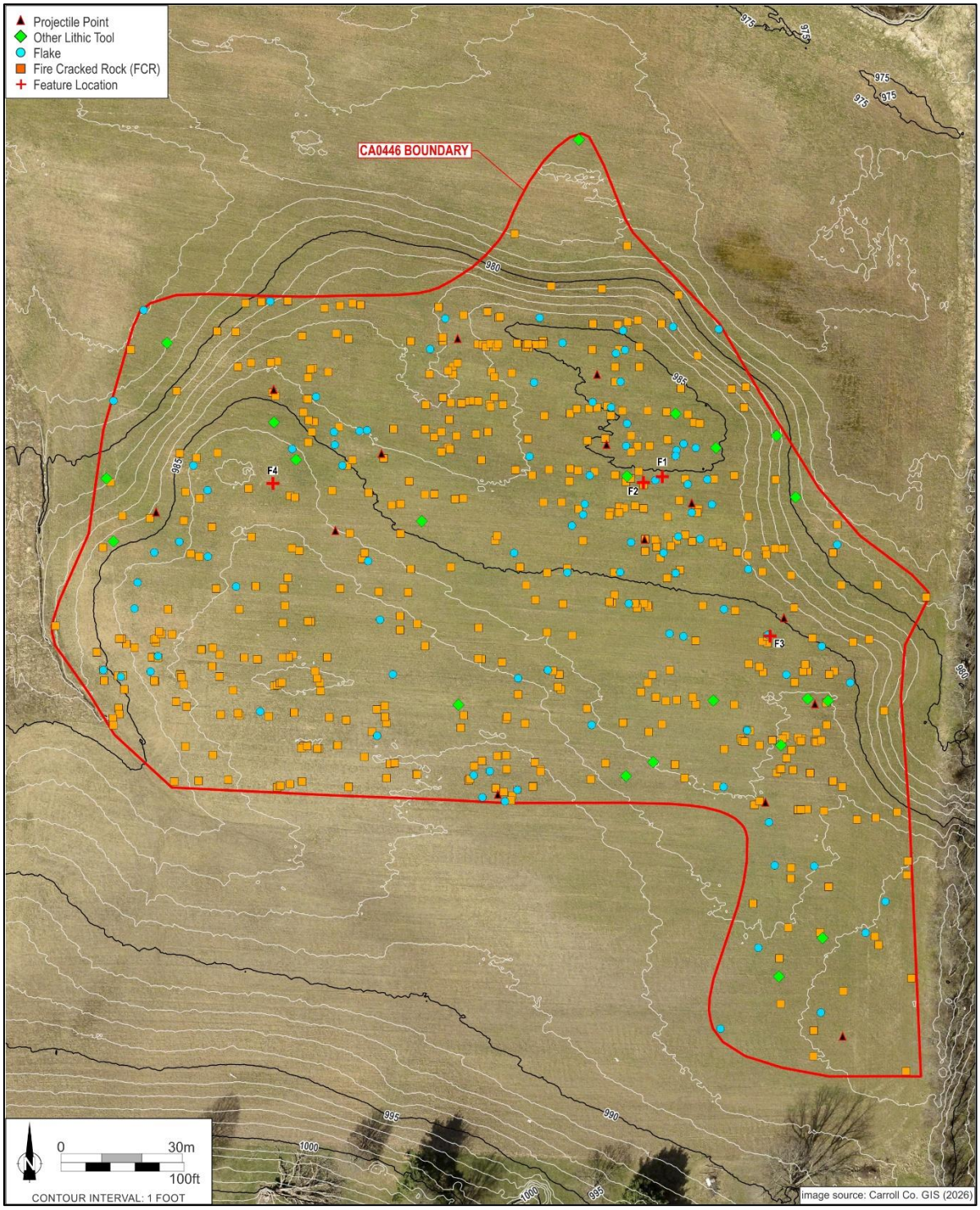


Figure 3. Surface collected artifact distributions at 33CA446.

Four positive core test locations, at magnetic anomaly numbers 5, 10, 11 and 19, were initially investigated with 1 m^2 (10.7 ft^2) test units. Each of these locations yielded a cultural feature and required more than 1 m^2 (10.7 ft^2) of excavation to fully expose plan views except for Anomaly 5 (Feature 4) which was not fully uncovered (Keener 2015b). While more ground-

truthing was planned for the site, the finding of four precontact features, two containing diagnostic artifact material, in addition to a data rich surface artifact deposit was deemed sufficient to determine the site eligible for the National Register of Historic Places (NRHP). The client asked that all additional fieldwork cease, to start discussions on possible avoidance and/or mitigation of the site. Ultimately, the planned deep mine has not moved forward and any further work on the site remains on indefinite hold.

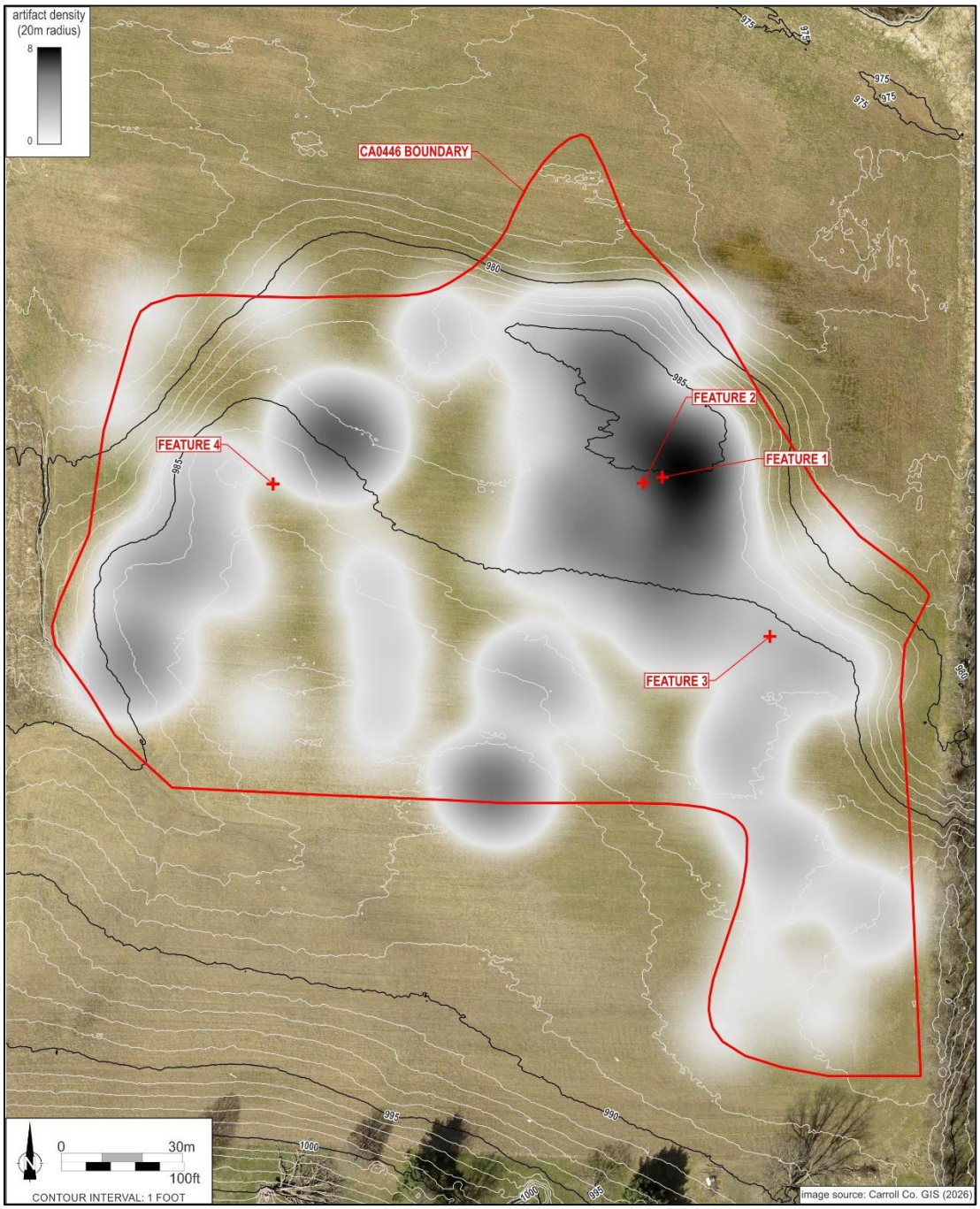


Figure 4. Flint debitage distributions at 33CA446 with Feature 1-4 locations.

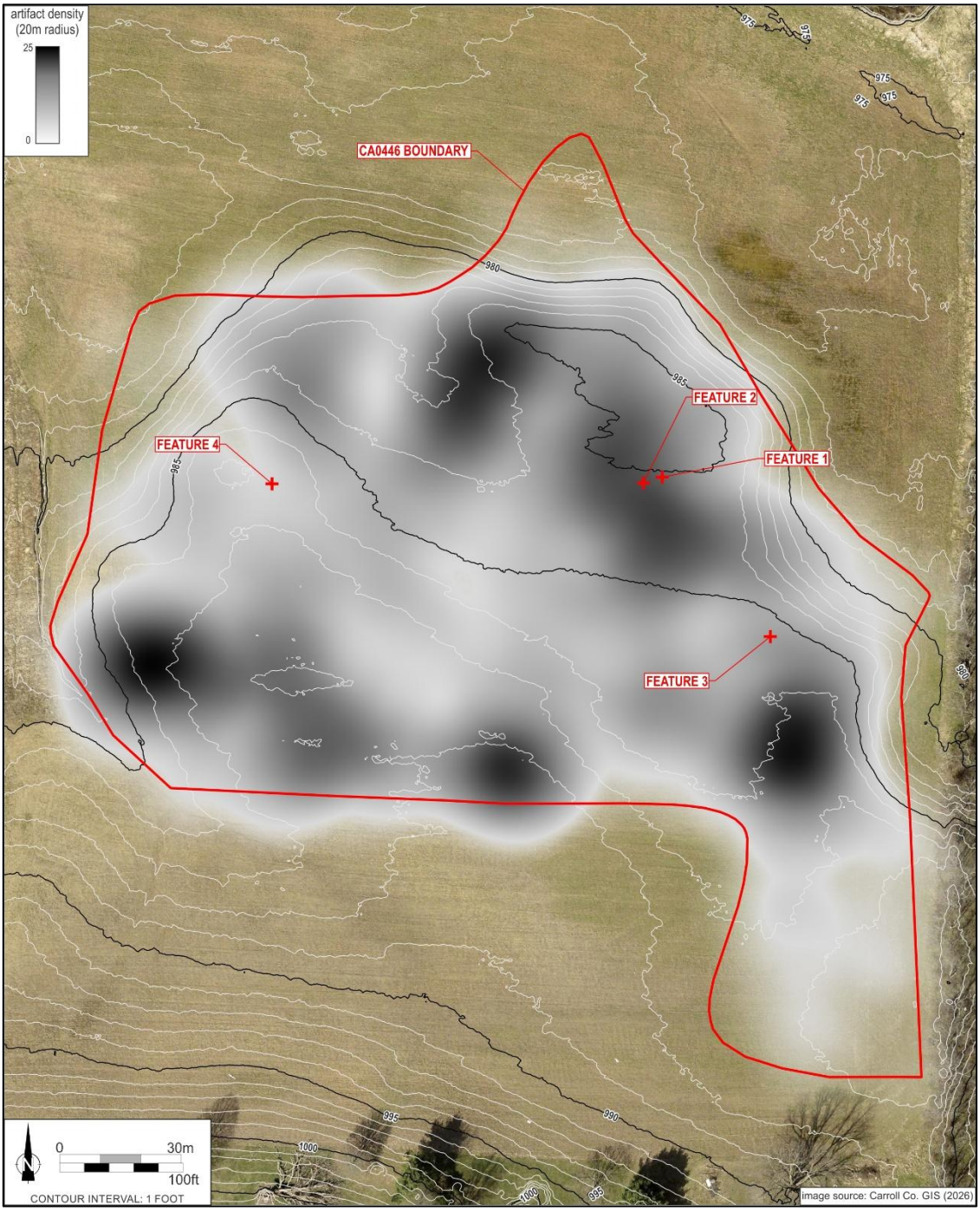


Figure 5. FCR distributions at 33CA446 with Feature 1-4 locations.

Feature Excavations

The four cultural anomalies (Features 1-4) at 33CA446 are precontact features that included two large basin shaped pits (Features 1 and 3), one medium sized basin shaped pit (Feature 2), and an undefined precontact feature (Feature 4) that appeared to be a heat-impacted soil area containing a small amount of FCR and charcoal flecking throughout the feature matrix

(Keener 2015b) (Figures 7-11). A total of 400 artifacts were obtained from feature context, with most of the material being FCR (n=390, 97.5%). Another 271 precontact artifacts were recovered from the plow zone above the feature locations. Feature 1 contained three pieces of thick grit tempered pottery (Figure 8), while Feature 3 contained a Matanzas Side-notched point (Justice 1987) (Figure 12). The diagnostic material obtained from feature contexts corresponded with the Late Archaic and Early Woodland projectile points recovered during surface collection. Charcoal samples were taken from Features 1, 3, and 4. Unfortunately none of these were radiocarbon dated due to the suspension of the project.

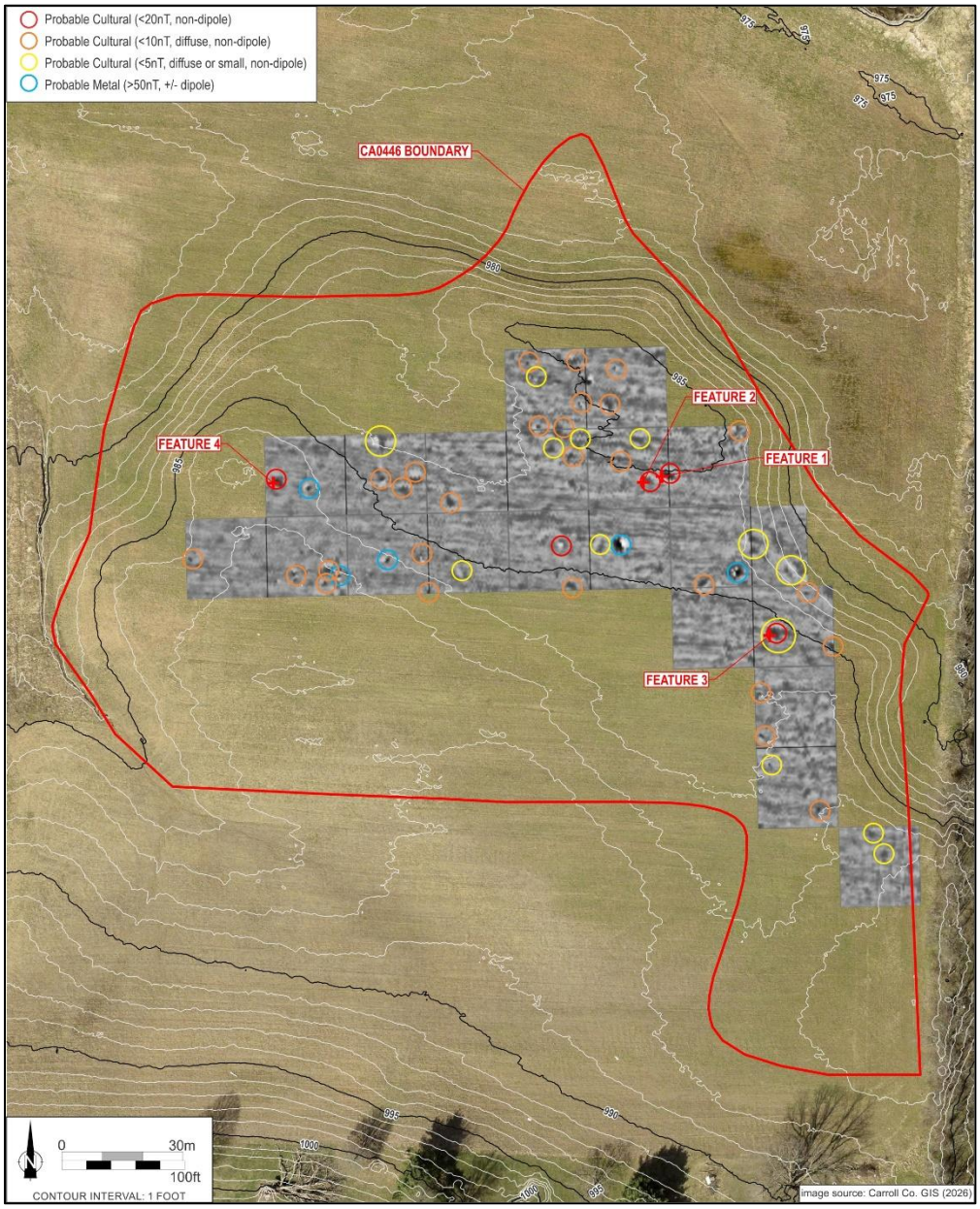


Figure 6. Geophysical investigation results for 33CA446 showing survey blocks and identified anomalies (Quick 2015). Features 1-4 are labeled.

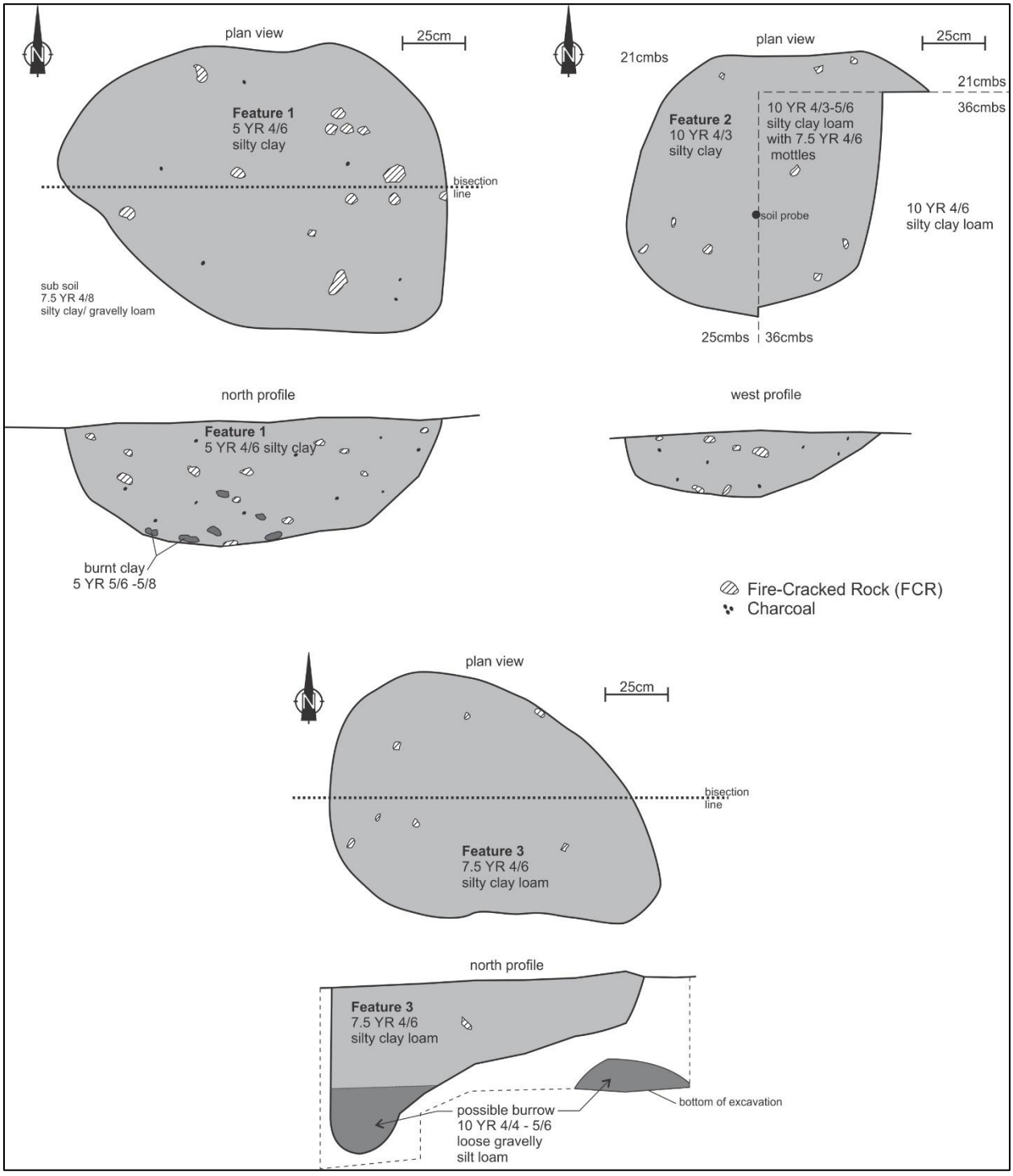


Figure 7. Plan and profile views of Feature 1, 2 and 3.



Figure 8. Feature 1 profile view.



Figure 9. Feature 2 plan view.



Figure 10. Feature 2 profile view.



Figure 11. Feature 3 profile view.

Artifact Assemblage and Site Interpretation

The Phase I and II investigations resulted in identification of 1,328 artifacts, and four precontact features at 33CA446. Table 1 below shows the general artifact categories of the entire assemblage.

Overall, the Phase I and II investigations produced a significant number of formal artifacts/tools, and artifacts that are temporally diagnostic (Figures 12-13). The formed artifact assemblage is diverse with nine different types of items (n=44) obtained at the site representing 22.3% of the flint/stone assemblage (Keener 2015b). The presence of early and late stage biface blanks indicates the likelihood that some early to late bifacial reduction activities were occurring at the site. The lack of an extensive flint debitage assemblage, however, seems to suggest that flint reduction activities were not a significant goal during the occupation of the site. Rather, the large number of modified flakes, scrapers, drills, and projectile points may suggest a focus on hunting, butchering, and hide processing activities. The pitted stones and cupstone suggest other subsistence tasks occurred such as utilization of local nut mast resources; however, these items were not found in large enough quantities to suggest a focus on this food resource. The debitage and FCR clusters and distinct feature areas, indicate that 33CA446 likely served as a series of

short-term field camps that were probably seasonal in nature and targeted to this landform during the Late Archaic and Late Archaic/early Early Woodland transitional period.

Table 1. General artifact inventory for the Phase I and Phase II results at 33CA446.

Artifact Type	Count
FCR	1134
Flint Debitage	147
Projectile Points	15
Modified Flakes	14
Scrapers	5
Biface Fragment	3
Grit tempered pottery	3
Early Biface Blank	2
Pitted Stones	2
Late Biface Blank	1
Drill	1
Cupstone	1
Total	**1328**

A total of 10 diagnostic projectile points were recovered at 33CA446 and are listed on Table 2 below. Seven are Late Archaic in age, with one found in feature context (Feature 3). Three points are transitional Late Archaic/Early Woodand (n=2) or Early Woodland (n=1). These diagnostic points along with the thick grit tempered pottery found in Feature 1 point to a precontact occupation of the site focused on the Late Archaic and early Early Woodland period.

Table 2. Temporally diagnostic projectile points recovered from 33CA446. Date ranges from Justice (1987).

Point Type	Count	Location Context	Date Range
Matanzas Side Notched	2	surface collection (1), feature context (1)	Late Archaic (3700-2000BC)
Lamoka Point	2	surface collection	Late Archaic (3500-1800BC)
Brewerton Corner Notched	1	surface collection	Late Archaic (2980-1723BC)
Brewerton Eared-Notched	1	surface collection	Late Archaic (2980-1723BC)
Merom Expanding Stem	1	surface collection	Late Archaic (1600-800BC)
Susquehanna Cluster Point	2	surface collection	Late Archaic/Early Woodland (1900-700BC)
Robbins Point	1	surface collection	Early Woodland (500BC-AD200)
Total	**10**		



Figure 12. Examples of projectile points, scrapers, biface blank and drill recovered from 33CA446.



Figure 13. Examples of modified flakes, pottery, and pitted stones recovered from 33CA446.

Another significant find was the recovery of three grit tempered pottery pieces (Figure 13). The largest sherd is 20.5 mm thick and may be a base fragment with a smooth exterior surface. No cord-marking was noted. The two other pieces are heavily exfoliated, having no original surface area evident. All three sherds appear to have sandstone used as the grit tempering agent. The thick basal piece appears to be similar to Early Woodland style ceramic forms such as Fayette Thick, Dominion Thick, and/or Leimbach, which characterize much of Ohio area (Cramer 1989, 2008; Bergman et al. 1995; Keener and Nye 2007; Keener et al. 2009, 2010, 2016; Prufer et al. 1989; Shane 1975; Tune 1985). Thus, the presence of thick grit tempered pottery, coupled with a diagnostic point assemblage tied to the Late Archaic and Late Archaic/early Early Woodland transitional periods, is not surprising. Sites with features containing ceramics that have radiocarbon dates to this time frame are increasingly being identified across Ohio (Keener et al 2016; Purtill 2009: Table 15.2; Vickery 2008).

Local and Regional Comparisons

A search of the Carroll County archaeological database (in 2015) found that, out of the approximately 480 sites recorded in the Ohio Archaeological Inventory, only 24 sites have been recorded for the Late Archaic period and six are associated with the Early Woodland period. None had artifact counts nearing those obtained at 33CA446. The majority possessed counts of 1 to 50 artifacts for their respective assemblages. Only three sites, 33CA003, 33CA274, and 33CA355 had totals greater than 90 artifacts. Sites recommended for additional work and/or deemed significant include site 33CA003 (91 artifacts), 33CA104 (32 artifacts), 33CA123 (46 artifacts), 33CA133 (10 artifacts), 33CA167 (42 artifacts), 33CA274 (164 artifacts), and 33CA355 (234 artifacts). Our cursory research found that no Late Archaic or Early Woodland site in Carroll County had undergone a Phase II or III investigation prior to 2015 (Keener 2015b).

Diagnostic projectile points recovered at the above-mentioned sites included Ashtabula, Brewerton, Matanzas, Trimble, Merom, Lamoka, Elk River, Robbins, Perkiomen, and Genesee type points (Justice 1987). Brewerton and Matanza points were the best represented point styles at these sites, which is similar to 33CA446. The few Early Woodland sites to contain diagnostic points were represented by Robbins and Perkiomen points, again like 33CA446. Outside of the pottery recovered at 33CA446, only one potential Early Woodland site, 33CA003, contained ceramics. This assemblage included seven sherds that were grit tempered and cord marked. This limited assemblage could not be typed nor were thickness measurements provided, meaning the assemblage could potentially represent the Middle Woodland or Late Woodland periods (Keener 2015b).

When looking at the local regional comparison of Late Archaic/Early Woodland sites recorded in Carroll County, 33CA446 stands out as having the largest representative artifact assemblage, with a sizable amount of diagnostic artifacts narrowly focused on the Late Archaic to Early Woodland period, as well as pottery and the presence of subsurface features. It is clearly an important Late Archaic/Early Woodland period site for Carroll County.

Conclusions

The findings at 33CA446 demonstrate the importance of using traditional archaeological techniques (surface collection and test unit excavation) in conjunction with geophysical survey analysis when identifying and assessing a site's eligibility for the NRHP. Feature identification alone is not enough for demonstrating eligibility at many upland site locations. The bulk of the artifact assemblage at 33CA446, particularly the diagnostic items, came from the plow zone and were obtained by surface collection and test units used for ground-truthing. Artifact distributions that relayed clustering of particular types of items (e.g., FCR and flint debitage) were discovered through surface collection results. The surface collection findings demonstrate that artifact distributions are important interpretive data sets that can facilitate geophysical survey block placement and/or plow zone removal areas where potential features are located. Due to limitations of geophysical data interpretation, particularly with smaller features, plow zone removal areas/blocks should not be based on geophysical survey results alone but also factor in artifact distributional data from surface collection and shovel test grids. To conclude, the work at 33CA446 exemplifies and clarifies how a holistic approach was used successfully in interpreting and assessing the eligibility of a precontact site location.

References Cited

Bergman, Christopher A., Teresa. W. Tune, and Donald A. Miller
1995 Fayette Thick Ceramic Chronology at the West Runway Site (15Be391), Boone County, Kentucky. In *Current Archaeological Research in Kentucky: Volume Three*, edited by John F. Doershuk, Christorpher A. Bergman, and David Pollack, pp.70-88. Kentucky Heritage Council, Frankfurt, Kentucky.

Cramer, Ann C.
1989 *The Dominion Land Company Site: An Early Adena Mortuary Manifestation in Franklin County, Ohio*. Unpublished Master's thesis, Kent State University, Kent, Ohio.

2008 The Dominion Land Company Site: An Early Adena Mortuary Manifestation in Franklin County, Ohio. In *Transitions: Archaic and Early Woodland Research In The Ohio Country*, edited by Martha P. Otto and Brian G. Redmond, pp. 284-333. Ohio University Press, Athens, and The Ohio Archaeological Council, Columbus, Ohio.

Justice, Noel D.
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States: A Modern Survey and Reference*. Indiana University Press, Bloomington, Indiana.

Keener, Craig S.
2015a *Phase I Cultural Resource Management Survey of Rosebud Mining Company 27ha 66.8a) Carroll Deep Mine #6 Application in Union Township, Carroll County, Ohio*. Professional Archaeological Services Team. Copy on file at the Ohio Historic Preservation Office, Columbus, Ohio.

2015b *Management Summary of Completion of Phase II Archaeological Fieldwork at Site 33-CA-446 in the Rosebud Mining Company (27Ha66.8a) Carroll Deep Mine #6 Application in Union Township, Carroll County, Ohio*. Professional Archaeological Services Team. Copy on file at the office of Professional Archaeological Services Team, West Alexandria, Ohio.

Keener, Craig S. and Kevin Nye
2007 Early Woodland Upland Encampments of Central Ohio. *Midcontinental Journal of Archaeology* 32 (2):263-298.

Keener, Craig S., Kevin Nye, and Joshua Niedermier
2016 The Yellowbush Creek Site, Investigations of a Late Archaic Camp in Southern Ohio. *North American Archaeologist* 37 (4): 236-258.

2009 The Settler's Ridge Site, An Early Woodland Leimbach Phase Upland Encampment in Northern Ohio. *North American Archaeologist* 30(1): 23-55.

2010 The Yellowbush Creek Site (33Ms29), a Late Archaic Maple Creek Phase Site in Southern Ohio. In *Current Research in Ohio Archaeology 2010*, https://ohioarchaeology.org/what-we-do/research/research-articles-and-abstracts/articles-and-abstracts-2010.html

Prufer, Olaf, Dana A. Long, and Donald J. Metzger
1989 *Krill Cave: A Stratified Rockshelter in Summit County, Ohio*. Research Papers in Archaeology, No. 8. Department of Sociology and Anthropology, Kent State University, Kent, Ohio.

Purtill, Matthew
2009 The Ohio Archaic: A Review. In *Archaic Societies: Diversity and Complexity Across the Midcontinent*, edited by Thomas E. Emerson, Dale L. McElrath, and Andrew C. Fortier, pp. 565-606. State University of New York, Albany, New York.

Quick, Russell S.
2015 *A Geophysical Survey of Site 33CA446 Near Carrollton in Carroll County, Ohio*. Cultural Resource Analysts, Inc. Copy on file at Professional Archaeological Services Team, West Alexandria, Ohio.

Shane, Orin C.
1975 The Leimbach Site: An Early Woodland Village in Lorain County, Ohio. In *Studies in Ohio Archaeology* (revised edition), edited by Olaf H. Prufer and Douglas H. McKenzie), pp.121-186. The Kent State University Press, Kent, Ohio.

Tune, Teresa W.
1985 Fayette Thick: A New Vessel Form for an Old Ceramic Type. In *Woodland Period Research in Kentucky*, edited by David Pollack, Thomas N. Sanders, and Charles D. Hockensmith, pp. 43-61. The Kentucky Heritage Council, Frankfurt, Kentucky.

Vickery, Kent D.
2008 Archaic Manifestations in Southwestern Ohio and Vicinity. In *Transitions: Archaic and Early Woodland Research in the Ohio Country*, edited by Martha P. Otto and Brian G. Redmond, pp. 1-28. Ohio University Press, Athens, and The Ohio Archaeological Council, Columbus, Ohio.