The 2006 Archaeological Investigations at Brown's Bottom #1 (33R01104)

by

Paul J. Pacheco, SUNY Geneseo
Jarrod Burks, Ohio Valley Archaeology, Inc.
& Dee Anne Wymer, Bloomsburg University

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Introduction

The following report is a brief overview of our 2006 field season at the Brown's Bottom #1 site, an Ohio Hopewell settlement located in the Middle Scioto Valley, about 10 km south of Chillicothe, Ohio (see Pacheco, Burks, and Wymer 2005). The Google Earth satellite image (http://maps.google.com/) from this area (type "Vauces, Ohio" into the Google Earth search function—our excavations are visible in the floodplain about 0.9 miles to the southwest) shows the context of our excavation on the Scioto floodplain. The Brown's Bottom portion of the Harness Farm is located west of Old Rt. 35 and east of the Scioto River. The current satellite image shows our excavation area shortly after we backfilled the units in June of 2006 and you can clearly see our backfilled units on the aerial imagery. Future image updates may not show the excavation area so clearly, but viewing the satellite image will still provide the reader with a contextual understanding of the site setting.

A comprehensive report of the 2005 and 2006 field seasons, including materials analyses and examinations of site structure, is nearing conclusion and we hope to publish it in some form in a regional journal. In addition, several detailed analyses of certain artifact classes and aspects of the project will be published separately. In fact, the first of these specific studies, an analysis of the bladelet assemblage, is already in print (Snyder *et al*. 2008). Detailed studies of the canid remains, mica assemblage, paleoethnobotanical assemblage, and geophysical methods will also be published separately. The purpose of this report, then, is to document our activities at the site in an image-friendly format in

advance of the formal site report. Here we emphasize the process of the fieldwork and explain how we followed up on the 2005 field season, and in the process provide some images that likely will not make the published report.

Additional information about the project and the 2006 field season at Brown's Bottom #1 can be found in an article written for the popular magazine *American Archaeology* (Burton 2006), which is published by the Archaeological Conservancy. Our efforts at the site have also been included in a recent synthesis of Scioto Hopewell settlement archaeology by Carr (2008) and in a recent review of the role of magnetic susceptibility methods in North American archaeology by Dalan (2008:20-21).

An important area of confusion needs to be cleared up before we describe what transpired during the 2006 field season. In our first report on Brown's Bottom #1, published here on the OAC website (Pacheco, Burks, and Wymer 2005), we referred to the site by the designation 33RO21. Apparent in the title of our current report, the new official trinomial Ohio Archaeological Inventory designation for our work is 33RO1104. The reason for the change is due to the surprising fact that the site numbers listed in Prufer's (1967) Scioto Survey work are not official OAI numbers, even though they mimic them in style. Prufer records site Brown's Bottom 1 as 33RO21 and another site called Brown's Bottom 2 as 33RO22, which is located 500 meters closer to the Scioto River on the same section of bottoms. We mistakenly thought that this was the official site name and number; however, 33RO21 in the OAI is actually assigned to the Ginther Mound, located north of Chillicothe.

To confuse the issue even further, sometime during the late-1970s, the Ohio Historic Preservation Office assigned a separate OAI number for John Blank's (1965)

report of Prufer's brief 1963 excavation on Brown's Bottom. At this time the site area was labeled 33RO107, calling the site Brown's Bottom, but designating three linear clusters marked in Blank's Appendix I as Brown's Bottom I, II, & III. Furthermore, when we plot our grid and excavation units using GPS and a total station, they do not precisely match the OAI locations recorded for the 33RO107 clusters, although it is likely that we are working in cluster I (and hence our original designation of the site as Brown's Bottom #1). Therefore, in consultation with OHPO, a new OAI number has been assigned for our 2005-2006 work. From this point forward, the site is assigned 33RO1104—though it will continue to be referred to by the name Brown's Bottom #1 since it is already well known under this name. In passing, we would mention that Bob Harness never liked this name, because as he often pointed out, Brown was the name of the farmer, not the land owner; so the field never was "Brown's Bottom."

The 2006 Field Season

Based on the results of our 2005 work at Brown's Bottom #1, it was apparent that the site continued southwest of our first 2400 m² magnetometry block. This conclusion was supported by both the surface collection data and the spatial distribution of excavated features from 2005. Thus, in March of 2006 we returned to the Harness Farm and added an additional 7200 m² of magnetic gradient data to our original block, bringing the total area examined with this technique to just under one hectare (Figure 1). The new magnetometry data, which extend to the southwest of the 2005 survey area, revealed quite a number of additional magnetic anomalies representing potential prehistoric features. Most obvious in these data are a group of probable earth ovens spreading in an

arc between 20 meters to 30 meters south-southwest of the structure, onto the topographic high-spot. Associated with these probable earth ovens are many dozens of lower intensity anomalies that are also potential cultural features. Our 2006 summer field season focused on testing a sample of these new anomalies, trenching to look for additional structures, and excavating the remainder of the structure discovered during the 2005 field season.

In 2005 we identified 44 anomalies in the magnetic data that might be prehistoric cultural features. To determine which of these were actually features, we systematically cored all 44 anomalies with an Oakfield soil corer. The corer encountered probable feature fill (charcoal, burned earth, and/or artifacts) at 24 of the anomalies, and we subsequently excavated a sample of these anomalies in 2005. The additional magnetic survey in 2006 located so many new anomalies that coring was not a practical technique for identifying which of the anomalies were cultural features. Thus, in 2006 we used a different approach. We divided the anomalies up into four classes based on their peak magnetic strength (Figure 2), which was a characteristic that we found in 2005 was related to feature type (e.g., the earth ovens were all greater than 8 nT in strength).

While the feature excavation during 2005 was carried out using a purposive sampling strategy focused on recovering a good faunal assemblage (see Pacheco, Burks, and Wymer 2005 for discussion), for the 2006 field season we decided that the best strategy for attaining a statistically valid representation of each magnetic anomaly class was to use a stratified random sample. We drew the stratified random sample with replacement, under the condition that any sample that drew previously excavated anomalies would be rejected. Figure 2 shows the sample that was chosen on the first try

(the anomalies with a circle around them). The sample provides good spatial coverage, even though this was not a requirement or expectation of our stratified random sample; the goal was to select an unbiased sample of anomalies from across all anomaly strength classes. Furthermore, none of last year's tested anomalies were picked, so it was not necessary to draw the sample again. In fact, only two of the untested anomalies assigned feature numbers last year were picked (Features 8 and 20). All new anomalies were assigned Feature numbers consecutive with the 2005 sequence.

The stratified random sample in 2006 began with a 5% sample (n=2.75) of the 55 yellow anomalies (<3nT), which we rounded to three. Interestingly, F33, one of the yellow class anomalies purposively excavated during the 2005 field season, contained a Hopewell burial. A 5% sample of the 82 green anomalies (3-4.99nT) rounded to four while a 5% sample of the 15 red anomalies (5-7.99nT) rounded to one. We chose a larger (10%) sample for the 30 black anomalies (8+nT), which translates to a sample of three. The larger sample for this anomaly class was chosen because of the potential to recover additional subsistence and artifactual data. All three of the black anomalies excavated during the 2005 field season have been interpreted as earth ovens. And all contained large quantities of secondary Hopewell refuse. Standing out in this group was F38, from which 2.9 kilograms of faunal remains and 6.2 kilograms of fresh water shellfish remains were recovered. Figure 3 shows a foggy morning view of the excavation of several test units opened in 2006 to investigate the randomly chosen anomalies.

Because we had the time and available labor, after excavating our stratified random sample of anomalies, we were able to excavate an additional four green

anomalies and four black anomalies. We purposively (i.e., they are not part of the random sample) chose these anomalies because of their location or other interesting characteristics like intensity of their magnetic signature (F228 and F237 stood out in this regard; both were quite magnetic). Figure 4 shows the location of all positive anomalies excavated to date (i.e., 2006), all of which represent prehistoric pit features. All features, but F214 and F274, are interpreted as related to the Ohio Hopewell occupation of the site, based on the recovery of diagnostic artifacts like ceramics or bladelets. Both F214 and F274 relate to a Late Woodland Intrusive Mound/Jack's Reef occupation. More details on F274 will be provided below.

Two basic types of cultural pit features were identified: basin-shaped pits that showed no evidence of *in situ* burning, and deep basin/cylindrical-shaped pits that do show evidence of *in situ* burning. We have no direct evidence for the function of the first group of basin-shaped pits, although speculation ranges from processing pits to storage pits. Typically these pits contain minimal fire-cracked rock (FCR) in comparison to those exhibiting *in situ* burning. Figure 5 shows an example of a fairly typical basin-shaped pit excavated (bisected) during the 2006 field season. This pit, F283, contained diagnostic Hopewell bladelets and ceramics, with very low densities of FCR. It was chosen during the stratified random sample and represents a green anomaly. The edges of these pits can be quite subtle in some photographs.

In one case, secondary refuse in a basin-shaped pit included numerous Hopewell artifacts that may represent the remains of a tool kit. This feature, F196, was also a green class anomaly chosen during the stratified random sample. Two very interesting and unique artifacts were recovered from F196. The first of these artifacts is a large cord

marked sherd with a foot—part of a tetrapodal vessel (Figure 6). While tetrapodal vessels are often found in mound contexts, such as the classic "duck" pot from Mound City, several were recovered by Prufer *et al*. (1965) during his McGraw site excavation just up the Scioto River about 4.5 miles from Brown's Bottom. The second unique artifact is a small piece of copper that we think is an awl or punch (Figure 7). Support for this interpretation is provided by the recovery of a small bone handle into which the copper was wedged. The handle had clearly broken, but it is unclear why the copper tool was discarded instead of being refit with a new handle.

In addition to these unique artifacts, sixteen Hopewell bladelets were recovered from this feature, rounding out the possible tool kit. An image of these bladelets is included in Snyder *et al*. (2008:45). Ten of the bladelets possessed use-wear attributable to sawing, cutting, scraping, and graving. Snyder *et al*. (2008) plausibly make the case that the graving use-wear pattern is attributable to working mica. While mica was not recovered from F196, several cut pieces were found during the 2005 field season (Pacheco, Burks, and Wymer 2005) and from other features during the 2006 field season.

The second class of basin-shaped features found in 2006 exhibited evidence of *in situ* burning. They are represented by the strongest magnetic signatures, and hence were classed as black anomalies within our four class scheme. As noted previously, we interpret these features to be earth ovens. As such, the features represent pits in which fires were built to heat up cobble-sized rocks obtained from nearby Dry Run or the more distant Scioto River. The hot rocks, when covered over, then served to keep the ovens cooking their contents for an extended period of time. The earth ovens appear to have been used a variable number of times; some were only used once, while others were

cleaned out and re-used a number of times. While all of these features contained FCR, sometimes in the fill, and sometimes at the bottom of the features above a layer of charcoal, the amount of FCR varied considerably (see Figure 8).

Likewise, the degree to which the pits were backfilled with culturally sterile soil or secondary refuse also varied considerably. F38, which contained the large quantities of faunal and shell materials described earlier, contained *only* 87.15 kg of FCR, while other earth ovens contained prodigious quantities of FCR. For example, F308 contained 425.5 kg of FCR and F237 topped out at 542.6 kg of FCR. In contrast, the basin-shaped pits discussed above, F196 and F283, contained 7.25 kg of FCR and 2.07 kg of FCR, respectively.

Ceramic artifacts were also recovered in significant quantities from the earth ovens. For example, 243 sherds were recovered from F308, with 458 sherds from F237, and a whopping 1077 sherds from F38. These three earth ovens combined produced 40% of the Brown's Bottom #1 ceramic assemblage. In contrast, the basin-shaped pits had considerable variability in the number of sherds recovered. For example, only 3 sherds were recovered from F283, while 207 sherds were found in F196.

All of the earth ovens excavated in 2006 contained Ohio Hopewell diagnostics, except for one, F274, which was chosen purposively for excavation after the stratified random sample was completed. F274 contained artifacts diagnostic of the Jack's Reef horizon, a Late Woodland period culture that is poorly known in Ohio (Figure 9). In the Middle Scioto Valley these types of artifacts are also associated with a complex known as the Intrusive Mound culture. Presumably these are the same cultural entities. While little has been published about this culture in Ohio, one of the rare documented sites is also

located on the Harness Farm. The ceramic and lithic assemblage recovered from this site, referred to as the C + site by Bob Harness, is very similar to the assemblage recovered from F274 (Seeman 1992). Bob named the site after the field in which it was found—to keep artifacts separated by their field of origin, Bob named all of his agricultural fields with letters or numbers. The C+ site got its name because it is located on a small sliver of land adjacent to field C. In Bob's labeling system, the Brown's Bottom #1 site is in field T.

Diagnostic ceramics related to this late Late Woodland occupation were recovered from one other feature besides F274. This feature, F214, is a shallow basin-shaped pit that is a green class anomaly chosen by the stratified random sample. Both of these Late Woodland features are located well over 50 meters from the Hopewell structure and about 25 meters from the arc of excavated Hopewell earth ovens (see Figures 2 and 4), so there is little spatial overlap between the two components. In fact, the magnetometer data show a cluster of five other potential earth ovens (based on them being black anomalies) near F274 in the southwest corner of the magnetic survey area, distributed in two rows of three features, which may also relate to this later occupation. Unfortunately none of these other potential pit features was investigated.

There was, however, one Hopewell earth oven excavated during the 2006 field season that is located on the south side of the site, like F274. Nonetheless, this feature, F308, which is over 75 meters from the Hopewell structure, does not appear to be aligned with the group of potential Late Woodland earth ovens clustered near F274. It should also be pointed out that the black anomaly located near F308, which was selected for excavation during the stratified random sample, turned out to be a piece of recent iron

farm equipment rather than a prehistoric pit feature. Excavating iron objects is a risk associated with the magnetic amplitude sampling strategy that we used since some iron objects produce magnetic anomalies that look quite like those associated with earth ovens. Of course, systematic coring would have identified this anomaly as non-feature-related had we chosen to core all of the anomalies.

Excavation of F274 provided excellent evidence that the feature was used only once, as there was an intact rock layer overlying a thick layer of charcoal (Figure 10). The charcoal layer contained several intact, carbonized branches. These have been identified as branches of red oak, white oak, hickory, and beech. A radiocarbon date was submitted from these branches in the fall of 2006. This sample (Beta 219946) returned a conventional date of 1040 +/- 60 B.P., which translates to a 2 sigma calibrated date of A.D. 890-1060 & 1080 -1150. Thus, this component dates to about 600-700 years later in time than the Hopewell occupation of the site.

Even though the F274 earth oven seems to have only been used once, there was abundant secondary refuse in the feature fill as exhibited by the lithic and ceramic artifacts shown in Figure 9. All told there were 123 sherds recovered, eight of which are rims from at least five different vessels. Cord-wrapped dowel impressions were the most distinctive stylistic elements present on the pottery. The small Raccoon-notched projectile point, made out of locally available Columbus-Delaware chert, which is located on the left end of the first row of bifaces in Figure 9, was recovered in the feature fill in association with the pottery and the radiocarbon date. In addition, 397 g of freshwater mussel shell and 461 g of animal bone were recovered from the feature fill. A minimum of three different species were identified in this sample by Dr. Jonathan Bowen. These

species are freshwater drum, turkey, and deer. The deer bones in F274 are represented by numerous vertebrae and long bones. The deer was young based on the presence of several unfused vertebrae and long bone epiphyses. Two bone tools were also recovered, including one worked antler tine and a fragment of a polished bone awl. These data from Brown's Bottom #1, in combination with the C+ site, and Jack's Reef/ Intrusive Mound dates at the nearby Edwin Harness Mound (Greber 1983), suggest a fairly significant Late Woodland presence on the Harness Farm long after the Hopewell had passed into history.

Another goal of the 2006 excavations, in addition to investigating magnetic anomalies, was to search for additional structures on the site. We used 20 m x 1 m trenches to search for additional structures, which was the same method we used in 2005 to locate the first structure. Trenches were placed so as to miss the black anomalies suspected to be earth ovens (Figure 11), since earth ovens are unlikely to be found inside structures. In all, four trenches were excavated in the search for additional structures, with an additional 16 square meter block attached to the final trench situated on the topographic high spot. Potential features were not excavated during the trenching operation, although it was noted if they corresponded to previously defined magnetometry anomalies. In contrast, all potential post molds were cross-sectioned. A few small post molds were identified in the final trench, but none of these were rock-filled like the ones associated with the 2005 structure. As a result of our trenching operations and the pattern of magnetic signatures associated with the known structure, we are fairly confident that no other Hopewell structures, especially ones similar to the 2005 structure, exist on this site. The entire landform, low as it is, has been sampled and very few artifacts are present in the lower ground around this little bump.

Our final excavation goal for 2006 was to complete excavation of the structure discovered in 2005. Previously unexcavated units were re-established to accomplish this goal (Figure 12, but also see Pacheco, Burks, and Wymer 2005 to identify areas within and around the house remaining to be excavated). A few probable bench posts, two probable hearths, symmetrical with the two probable hearths identified in 2005, and a small exterior basin-shaped pit (F330), were the only new features discovered during this operation. Trenches were also excavated around the second line of posts located south of the structure. We discovered that this line of posts does not represent a second structure. Instead, it probably represents some kind of screen or porch associated with the front door of the house. We are confident that we have completely examined the structure and that a prepared floor, if it once existed, has been thoroughly truncated by historic farming practices.

Conclusion

After two field seasons our basic interpretation of the Ohio Hopewell occupation at Brown's Bottom #1 is that it represents an example of a dispersed Ohio Hopewell household that engaged in the growing of Eastern Agricultural Complex plants (Wymer 1996) and the collecting of wild plants, animals, fish, and freshwater shellfish. Figure 13 provides a composite plan map of all features and units excavated during the 2005 and 2006 field seasons. The figure also shows our current interpretation of these features. The site appears to conform well to the expectations we have posited in our general model of Ohio Hopewell settlement patterns (Dancey and Pacheco 1997; Pacheco and Dancey 2006; Wymer 1996). The magnetic susceptibility data shared with Dalan

(2008:21), showing that the structure area was likely maintained through sweeping, is additional support for our interpretation that this is a well-maintained Hopewell house-lot with a structure, activity areas, at least two burials (no grave goods), and defined earth oven cooking zones.

We are hopeful that our research is beginning to fill a void that has long been recognized in Ohio Hopewell settlement studies (Griffin 1996). Preliminary results from the 2007 and 2008 field seasons on the Harness Farm at the adjacent Lady's Run site (33RO1105) also seem to indicate that our research methodology is paying off, as we have identified and excavated a second Ohio Hopewell household cluster, complete with another structure and a buried secondary refuse deposit similar to the one excavated by Prufer *et al*. (1965) at the McGraw site. A brief overview of the Lady's Run research will be presented in a similar manner on the OAC website in the near future.

Acknowledgements

We want to extend our warmest thanks to the landowners, Garnet Wiley and the late Robert L. Harness (Figure 14). Their support and cooperation have been essential to our successful field work. Sadly, Bob Harness passed away in January of 2008. He was a great friend and a kind soul and we miss having him come to visit us at the site. We hereafter dedicate our project and its results to Bob's memory. It was Bob's deep fascination with prehistory, cultivated by the late Alva McGraw, that really made the project possible. Most farmers in the Scioto Valley think archaeologists are a nuisance, but Bob recognized the importance of our work and its contribution to the legacy of the land his family came to steward. Bob's wife Garnet has also been a wonderful host while we have worked on the Harness Farm. In addition to cooking us several delicious meals,

our students have learned to keep a keen eye out for her 4-wheel cart, which she drives to the site laden with popsicles, sodas, and other treats. Her friendship and hospitality are greatly appreciated.

We also want to thank the students who have participated in the Geneseo and Bloomsburg archaeological summer field schools during the summers of 2005 and 2006. The 2006 group was very dedicated and hard working; obviously we could not have accomplished what we did without them. From this group we want to single out Brandy Rinck and Emily Isler for their work as field assistants during the excavation and help with the field notes and field maps; Ryan Murray and Kitawna Hoover for their work as field assistants; Judy Steinhilper for her help on the paleoethnobotanical analysis; and Rocky Brockway, Aaron Comstock, Dave Crawford, Dave Crego, Jon Gauthier, Angie Ip, Ryan Murray, Katy Meyers, Owen Murnane, Jen Odien, Tim Parrotte, Mike Powers, Ashley Treat, and Dan Snyder for their help with the site structure and artifact analyses. All maps in this article were drawn by Jarrod Burks and all photographs were taken by Dee Anne Wymer, except for Figure 9, which was taken on a light table in the Archaeology Lab at SUNY Geneseo.

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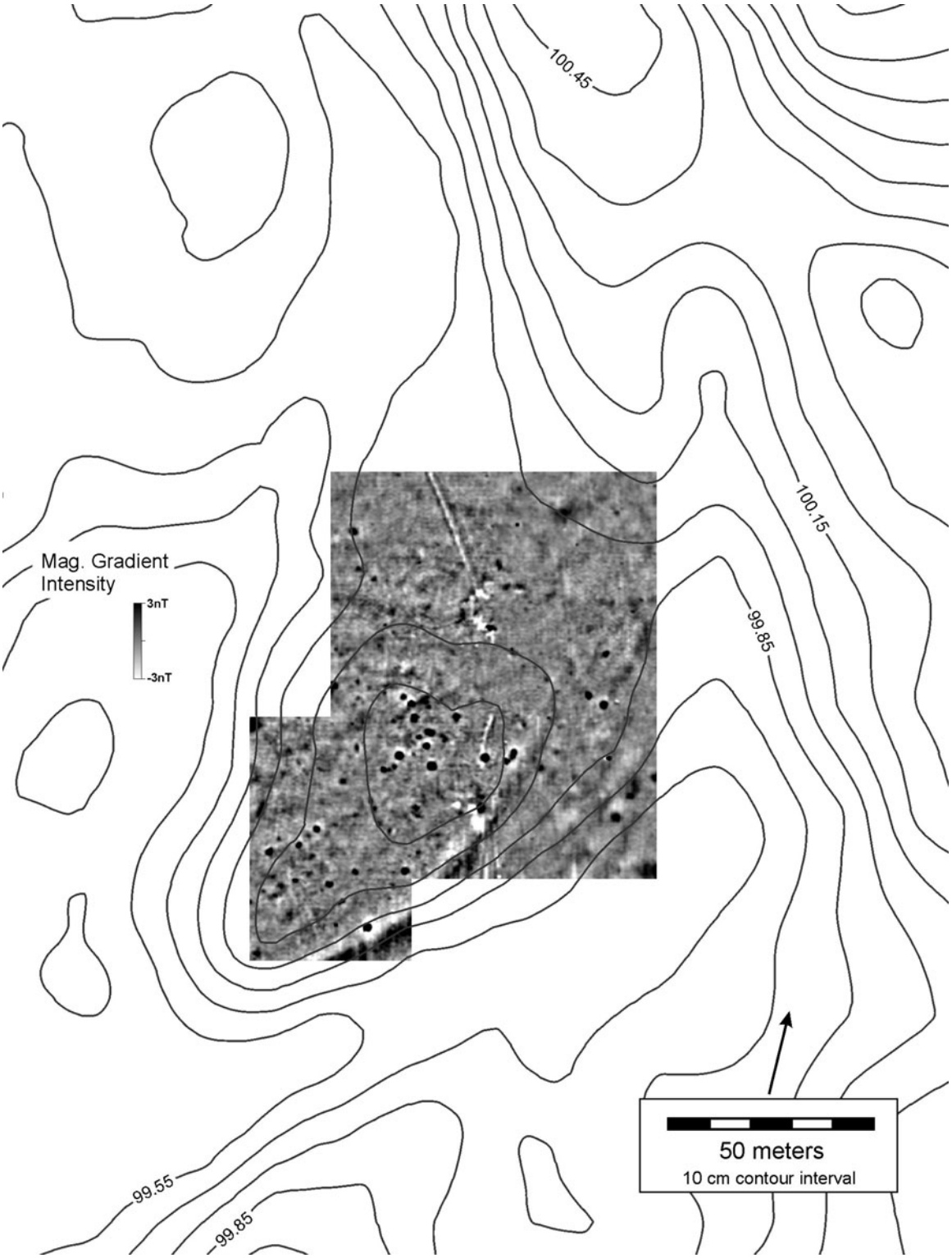

Figure 1. Magnetic gradient data map. The linear feature near the north end of the data is a bulldozer track.

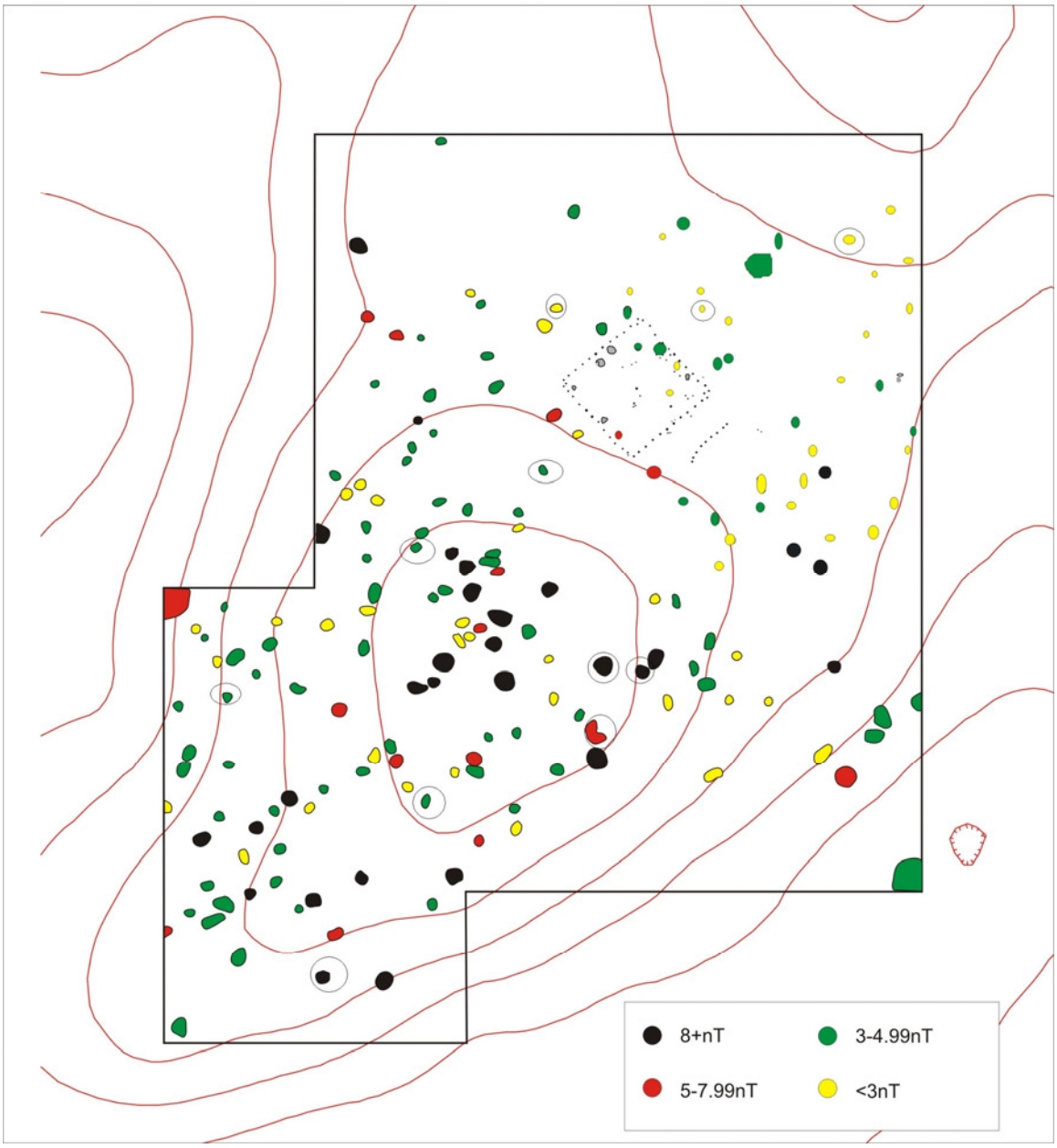

Figure 2. Stratified random sample of four classes of magnetic anomalies. The circled anomalies are those selected for excavation (10 cm topographic contour interval).

Figure 3. Excavation of magnetic anomalies, view looking southwest.

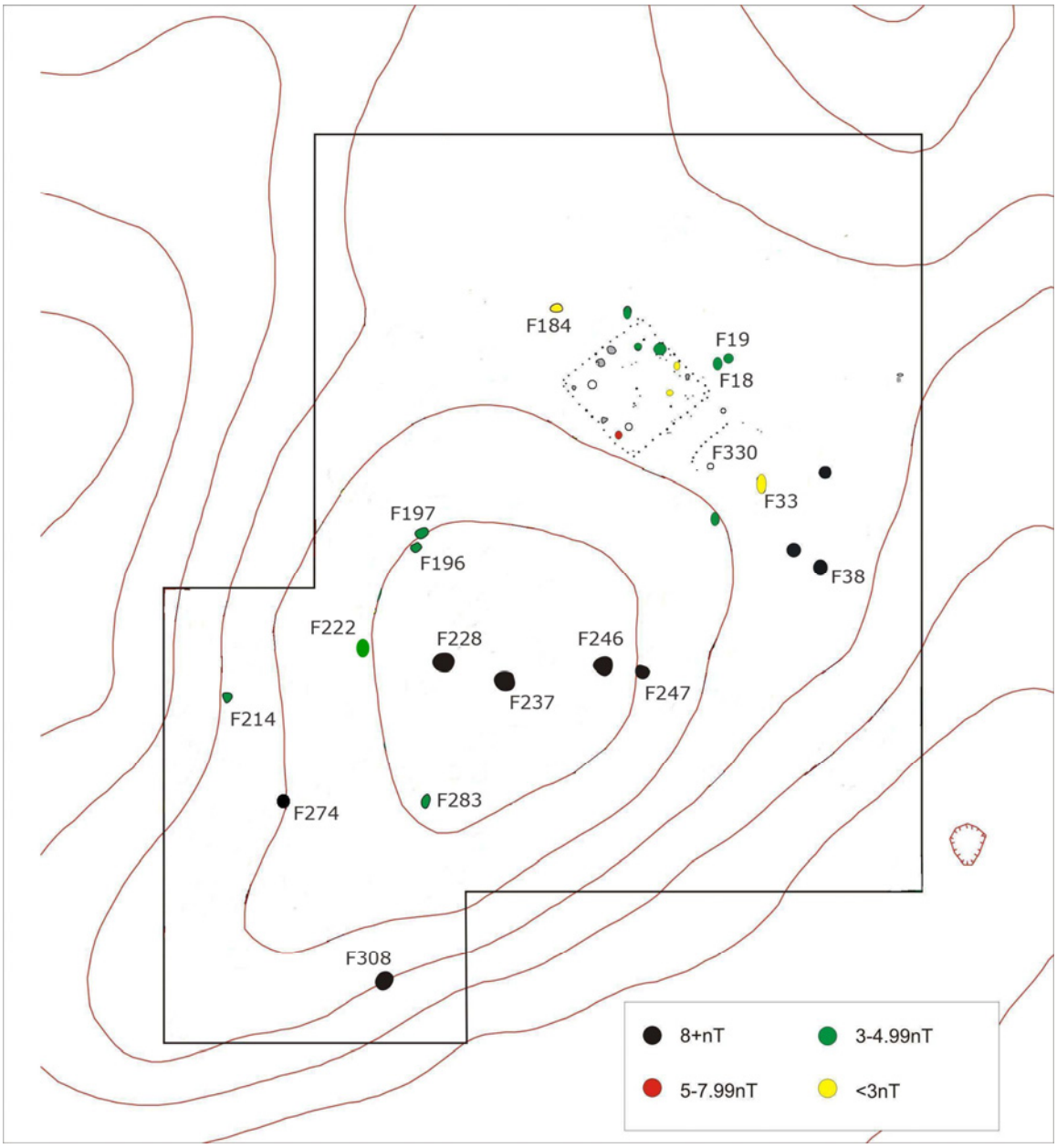

Figure 4. Location of magnetic anomalies found to be cultural features during 2006. Note: image does not label new features inside the structure, but does show location of F33 and F38 from 2005 (10 cm topographic contour interval).

Figure 5. Profile of F283 showing an example of a Hopewell basin-shaped pit.

Figure 6. Cordmarked sherd from tetrapodal vessel recovered from F196.

Figure 7. Small copper awl recovered from F196.

Figure 8. Plan view of F247 showing an example of a Hopewell earth oven.

Figure 9. Intrusive Mound/Jacks' Reef artifacts recovered from F274 and plowzone (5 cm scale).

Figure 10. View of F274 earth oven showing FCR layer in NE ¼ and burned logs in SW¼.

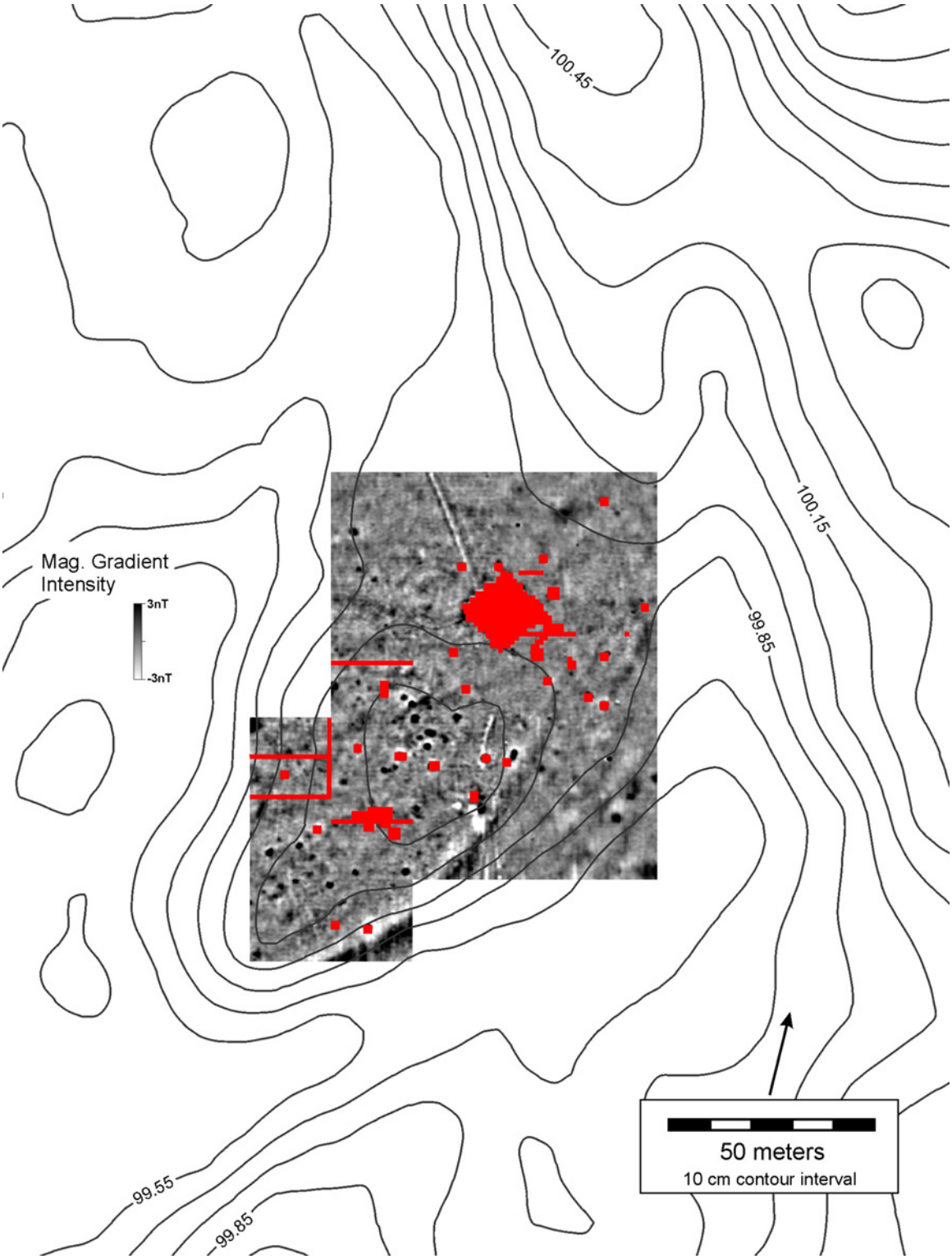

Figure 11. Composite map of all excavated units; 2005 and 2006 field seasons.

Figure 12. Excavating the remainder of the interior of the structure, view looking north.

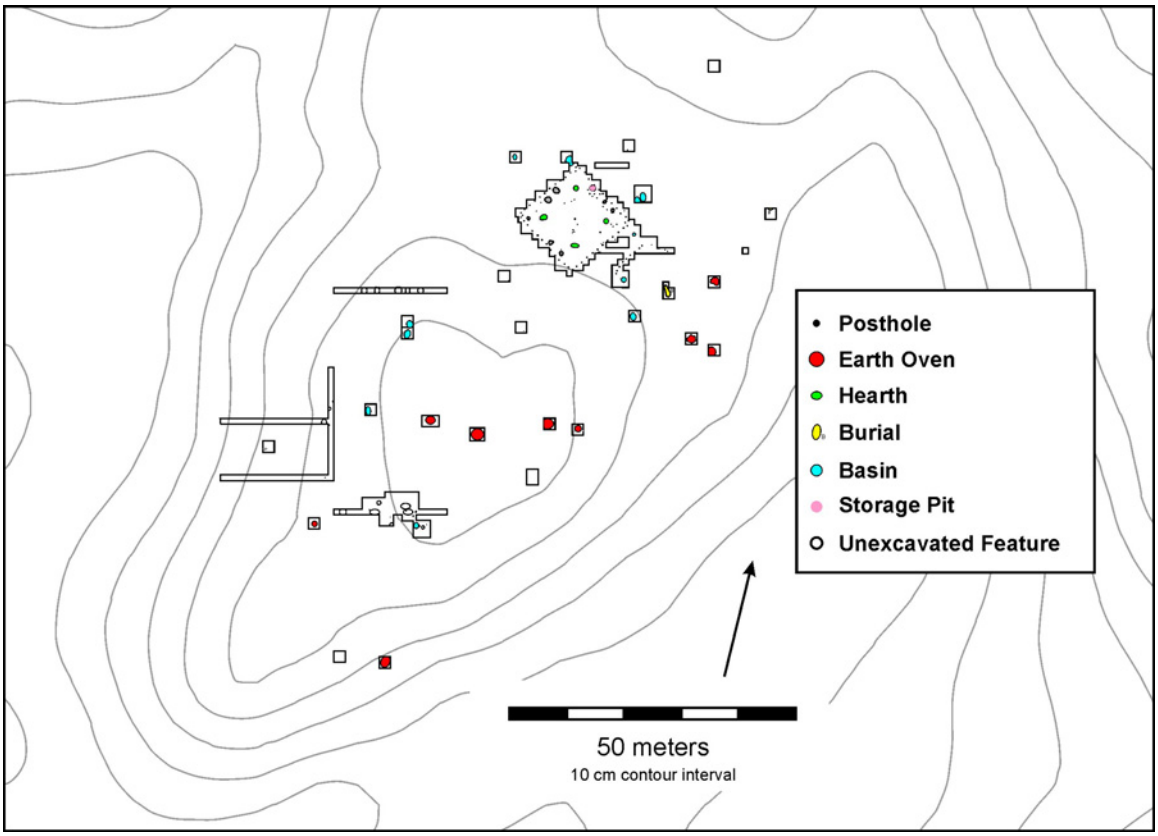

Figure 13. Composite plan view of 2005-2006 excavations at Brown's Bottom #1.

Figure 14. Bob Harness during one of his many visits to the site.