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1.0 INTRODUCTION

In October 2017, the Henry County Transportation Improvement District (HCTID) contracted The Mannik & Smith Group, Inc. (MSG) to conduct Phase III archaeological data recovery of a portion of the Ritter No. 1 site (33HY0167) in Harrison Township, Henry County, Ohio (Figures 1.1-1.2). The archaeological data recovery is being conducted as a condition of a U.S. Army Corps of Engineers (USACE) permit for the New Maumee River Crossing (NMRC) project – which involves the construction of a new bridge spanning the Maumee River in Napoleon, Ohio – pursuant to a Memorandum of Agreement (MOA) among the USACE, Buffalo District, the Ohio Department of Transportation (ODOT), the Henry County Engineer’s Office (HCEO), and the Ohio State Historic Preservation Officer (OSHPO).

As part of the research design, data recovery activities were divided into two stages. Stage 1 activities included a geomorphological assessment of the project location, a soil phosphate survey of the project area and a microdebitage survey of the project area. The results of these activities were reported in February 2018 (Chidester 2018), and helped to shape the approach to data recovery excavations during Stage 2 of the project. This Executive Summary documents the activities conducted during Stage 2 data recovery as well as preliminary results and interpretations.

Several key personnel have contributed to this project. Dr. Robert Chidester, RPA (MSG) is the Principal Investigator for the project and the author of this Executive Summary. Mr. Phillip Bauschard, M.S. (MSG) served as Field Director during the Stage 2 data recovery excavations. The field crew for the Stage 2 data recovery excavations included Meagan Bell, Bridget Bennane, Sam Burns, Tarey Carter, Rachel Davies, Kayce Humkey, Kirstyn Leque, Katrina Newburn, Aaron Okkonen, Kathryn Slocum, Lavinia True-Raffoul, Hannelore Willeck, and Bill Yates. Project Archaeologist Kate Hayfield, B.S. assisted in the organization of activities for two Public Dig Days that were held in April. Ms. Hayfield and GIS Specialist Bryan Agosti, M.A. prepared the graphics in this document. Ms. Karen Braxton was responsible for document formatting and production.

1.1 Project Setting

As described in MSG’s Phase II report for the NMRC project (Chidester et al. 2016), archaeological site 33HY0167 (Ritter No. 1) is located in an agricultural field on the south side of the Maumee River in Harrison Township, just outside the corporate boundaries of the City of Napoleon, Ohio. This location lies within the Central Lowland Physiographic Province and is situated in an area of low relief, the Glacial Lake Plain (Feldman et al. 1977). Fluctuating glacial lake levels defined the character of northwest Ohio during Holocene times. The glacial lake waters that covered northern Ohio deposited fine lake silts and clays (Forsyth 1968:14). The relatively low terrain that characterizes this region is a reflection of its location near the vicinity of the former Great Black Swamp, a poorly drained morass that cut off northwest Ohio from the rest of the state until it was drained in the late 19th century (Mayfield 1969; Camp 2006:50-52).

The Ritter No. 1 site is located on a high alluvial terrace in a meander bend above the deeply incised Maumee River. The upper 3.3 ft (1.0 m) of sediment in this location appears to represent a mantle of Holocene overbank deposition that lies on top of an older ridge-and-swale landform. Bucket auger probes and a cut bank examination completed (Purtill 2018) have indicated a typical Ap/A-E-Bt-BC horizonation within the area of 33HY0167. The E horizon is relatively deep and eluvial in origin, and transitions into a BtE horizon. Given the pedogenic formation of the BtE horizon, any archaeological features located in this horizon are likely intact. However, the swales on either side of the levee within the site area have likely served as floodchannels during flood events, resulting first in a scouring of the ground surface and then slackwater deposition when flood waters recede. This differential burial and scouring of the area may explain why some older (Late Archaic) material have been found on the plowed ground surface, above later Woodland deposits as well as Late Archaic deposits in the BtE horizon.
Figure 1.1
New Maumee River Crossing Project
Napoleon, Ohio
Figure 1.2
New Maumee River Crossing Project
Napoleon, Ohio

Notes
The Henry County photography, dated April 2011, is provided by OGRIP as part of the Ohio Statewide Imagery Program.
1.2 Previous Archaeological Investigations

1.2.1 Phase I Cultural Resources Survey

MSG conducted a Phase I survey of the NMRC project area in the fall of 2014 (Chidester et al. 2015). This survey included two areas, one on the north side of the river and one on the south side of the river. As a result of the Phase I survey, a prehistoric artifact scatter consisting of non-diagnostic lithic debitage and fire-cracked rock (FCR) was identified within the project area in a corn field on the south side of the Maumee River. This artifact scatter was interpreted by the Principal Investigator as an extension of previously recorded archaeological site 33HY0167, the Ritter No. 1 site. Originally identified in 1981, the Ritter No. 1 site was recorded as a late Paleoindian – Early Archaic lithic scatter, possibly a workshop, located on a natural levee approximately 164 ft (50 m) south of the river. The 2014 survey conducted by MSG, which included shovel testing and controlled surface survey, resulted in the recovery of 68 lithic artifacts (including FCR and lithic debitage from the whole spectrum of the reduction process).

1.2.2 Phase II Archaeological Testing

In April and November 2015, MSG conducted Phase II archaeological testing of that portion of 33HY0167 that falls within the proposed construction zone for the NMRC project. MSG subcontracted Ohio Valley Archaeology, Inc. (OVAI) to conduct a magnetic gradient survey of that portion of 33HY0167 located within the NMRC project area. OVAI identified 17 magnetic anomalies of potential archaeological interest during this survey; soil coring resulted in the reduction of the number of potentially cultural anomalies to 11. The identified anomalies appear to be clustered between the N940-N980 survey grid lines, which corresponds to the western end of a natural levee on which 33HY0167 was originally recorded in 1981. On the basis of the magnetic gradient survey and soil coring, OVAI recommended test excavations of four of the anomalies. MSG then conducted a two-stage field investigation in April 2015: a timed, controlled surface collection of 16.4-ft (5.0-m) blocks throughout the site boundaries within the project area, followed by test excavations of the four magnetic anomalies suggested by OVAI. Test excavations of an additional five magnetic anomaly locations (representing a wider variety of anomaly types, including two that had been characterized by OVAI as non-cultural) were conducted in November 2015.

Only one Phase II test unit (Anomaly 1, which had been identified by OVAI as a possible pit feature or large rock) failed to yield any evidence of cultural activity. The remaining eight test units all revealed at least one cultural feature or cultural deposit. (Several additional soil stains and areas of obtrusive fill that were initially recorded as features were later determined to be likely root casts or rodent burrows.) In total, eight prehistoric features or possible living surfaces representing occupations dating to the Late Archaic, Middle Woodland, Late Woodland and Late Prehistoric periods were identified within the NMRC project area. No Paleoindian or Early Archaic components were identified.

While site-specific natural formation processes were found to have complicated the archaeological record in this location, that portion of 33HY0167 that is within the NMRC project area appeared to exhibit physical integrity despite over 100 years of agricultural disturbance (primarily from plowing activity). While the overall surface-collected assemblage exhibited some aspects of spatial patterning that differed from subsurface cultural contexts, this patterning may represent cultural activity that did not result in the formation of sub-plow zone features or features that possess a distinctive magnetic signature. Furthermore, the majority of test units exhibited a general similarity between artifact assemblages from screened plow zone samples and assemblages from sub-plow zone feature and living surface contexts, indicating direct association. In those cases that did not
exhibit such similarity, the discrepancies were explained with reference to site formation processes. Furthermore, it was demonstrated that the intact sub-plow zone cultural features and deposits within the project area have the ability to yield data that can address a wide variety of research questions relevant to the investigation of the Late Archaic, Middle Woodland, and Late Woodland/Late Prehistoric periods in northwestern Ohio. Therefore, MSG recommended that the portion of 33HY0167 that is present within the NMRC project area is eligible for the NRHP under Criterion D (information potential).

Following the Phase II investigation, the U.S. Army Corps of Engineers determined that 33HY0167 is eligible for the NRHP and initiated consultation with ODOT, the Henry County Engineer’s Office, and the OSHPO, as well as tribal consultation. This consultation resulted in an MOA among the consulting parties that stipulated data recovery as mitigation for the adverse effects to 33HY0167 that will result from the construction of the new bridge and associated roadways.

1.2.3 Phase III, Stage 1 Data Recovery Activities

Due to several important questions regarding site formation processes that were not answered by the Phase II investigations, the Phase III data recovery investigations were divided into two stages. Designated Stage 1 activities were intended to provide answers to these research questions, in order to better inform the data recovery excavations that were designated as a Stage 2 activity. The Stage 1 activities were stipulated in the document Data Recovery Plan for a Portion of the Ritter No 1. Site (33HY0167) for the New Maumee River Crossing Project, Harrison Township, Henry County, Ohio (ODOT PID #22984) (Chidester 2017), which was incorporated into the MOA as an attachment. Specifically, three separate but related activities were described: a geomorphological assessment of site formation processes within the impacted portion of 33HY0167, a soil phosphate survey to identify potential prehistoric activity areas, and a microdebitage soil coring survey, also to identify potential prehistoric activity areas. The first two activities were completed by the Applied Anthropology Laboratories (AAL) at Ball State University, while the third activity was completed by MSG, all in the fall of 2017.

The geomorphological assessment resulted in the finding that the swales on either side of the levee that runs east-west through the project area likely act as floodchannels during high-volume flood events. This has likely resulted in differential scouring of landforms within the project area followed by slackwater deposition of sediments as floodwaters recede. This suggests that the swale areas have a higher probability of containing more deeply buried cultural deposits. Furthermore, a BtE horizon resulting from pedogenic processes was identified between the Ap and Bt horizons. It can be assumed that any features within the BtE horizon are intact.

The microdebitage survey revealed a spatial distribution of microartifacts consistent with the distribution of magnetic anomalies documented during the Phase II investigation of 33HY0167 – namely, along the western end of the levee running through the project area. However, the results of the soil phosphate survey present a negative image of the results from the magnetic gradient and microdebitage surveys. High soil phosphate values were recorded to the northwest and southeast of the magnetic anomaly cluster. This indicates that prehistoric activity may have been widespread across the Phase III project area, with the high soil phosphate zones and the magnetic anomaly cluster representing functionally distinct activity areas within the site.

Based on these results, MSG recommended that the plow zone be mechanically stripped from the entire Phase III project area at the start of data recovery excavations. Following the mapping and excavation of any potential cultural features within the BtE horizon, manual or mechanical stripping of the BtE horizon was recommended in locations where (a) features within the BtE horizon were
distinctly mismatched with the size, shape, and/or orientation of recorded magnetic anomalies, indicating the potential for more deeply buried features/contexts, and (b) high soil phosphate levels suggested potential areas of human activity not indicated by the magnetic gradient survey. Any cultural contexts/features identified within the Bt horizon were then to be mapped and excavated.

1.3 Phase III, Stage 2 Data Recovery Activities

Two primary groups of related activities were designated as Stage 2 activities by the DRP. One group of activities consists of extensive research to place 33HY0167 within a broader regional context. This research includes the re-examination of lithic artifact assemblages from three other pre-contact archaeological sites / site clusters in the mid-Maumee River Valley: the Gunn-Eberle site (33HY0033, 33HY0077, and 33HY0081–0083), the Campbell’s Soup site (33HY0181–0184), and the Johnson site (33HY0207). Artifact collections from all three sites are currently housed at the Cleveland Museum of Natural History (CMNH). MSG’s lithic specialist, Phillip Bauschard, M.S., visited the CMNH in January and February, 2018 to examine these site collections and to re-catalog the lithic material in a manner consistent with the cataloging methods used for the lithic artifacts recovered to date from 33HY0167. Once the cataloging of lithic artifacts recovered from 33HY0167 during Phase III investigations is completed, the data from all four sites / site clusters will be compared using advanced statistical methods in order to identify any patterns that might be present and attributable to similar or differing site functions.

A second research activity has been the collection of detailed paleoenvironmental data for northwest Ohio, to be used in a site catchment analysis of 33HY0167. This research is still ongoing.

The second group of Stage 2 activities consists of data recovery excavations of that portion of 33HY0167 that falls within the construction limits for the NMRC project, as described above, as well as the laboratory processing and analysis of recovered materials. Following the approval of the Stage 1 report by all consulting parties in March, 2018, MSG conducted the data recovery excavations from March 26 – May 11, 2018. The next section of this document summarizes the research questions posed for 33HY0167, the methods used during data recovery excavations, and several deviations from the field methodology as proposed in the DRP. Section 3 of this document then provides a preliminary summary of the results of data recovery excavations.
2.0 METHODOLOGY

This section will summarize the research design for Phase III investigations of 33HY0167, as presented in full in the DRP; describe the proposed field methods for data recovery excavations; and discuss several deviations from these proposed methods during the actual excavations.

2.1 Research Domains

Previous investigations of 33HY0167 have identified Late Paleoindian/Early Archaic, Late Archaic, Middle Woodland, Transitional Middle / Late Woodland, and Terminal Late Woodland/ Transitional Late Prehistoric components at the site, although no Paleoindian/Early Archaic components appear to be present within the NMRC project area. Based on this information, it appears that any additional data recovered from 33HY0167 is most likely to be relevant to the reconstruction of settlement and subsistence patterning in northwest Ohio as local populations grew and evolved from an economic system based exclusively on foraging to one that included at least rudimentary subsistence agriculture from the Late Archaic through Late Prehistoric periods. In addition, 33HY0167 may yield data relevant to the reconstruction of cultural and economic relationships between populations residing in the Maumee River Valley and adjacent regions during this same time span.

Based on this understanding of 33HY0167, the DRP offered the following list of research hypotheses for the Phase III investigations of the site, as well as specific means of testing these hypotheses:

Hypothesis #1: The Accuracy and Utility of Magnetic Gradient Survey in Guiding Archaeological Test Excavations

Hypothesis:
Certain types of archaeological deposits or cultural activities are characterized by lower magnetic visibility than others. In addition, site-specific environmental formation conditions can lower the magnetic visibility of features over time, or alternatively result in false positives. A site-specific understanding of these variables can therefore help to guide the interpretation of the results of magnetic gradient survey.

Means of Testing:
Comparison of the results of the magnetic gradient survey conducted during the Phase II investigations of 33HY0167 with the results of mechanical and manual excavations during the Phase II and Phase III investigations can identify the types of deposits and/or activities that are most likely to be missed or overlooked during magnetic gradient survey. In addition, a detailed, site-specific geomorphological investigation can reveal important elements of site formation processes that previous investigations may not have revealed, and that can be correlated with either or both the lower magnetic visibility of certain types of features or cultural deposits, and the formation of environmental conditions that create false positives.

Hypothesis #2: Changing Patterns of Raw Material Utilization and Stone Tool Manufacturing Techniques across Prehistory in Northwest Ohio

Hypothesis:
According to David Stothers and his colleagues, patterns of raw material utilization, ratios of specific tool types within toolkits, and preferred manufacturing techniques changed over time during prehistory in northwestern Ohio.
Means of Testing:
The patterns of raw material utilization, preferred tool types and manufacturing techniques proposed for the Late Archaic through Late Prehistoric periods by Stothers and his colleagues in various publications (e.g., Bechtel and Stothers 1993, Stothers 1999, Stothers and Abel 1993, Stothers and Bechtel 2000, Stothers et al. 2001), which sometimes include specific ratios, can be tested by comparison to lithic assemblages from dated contexts at 33HY0167. In addition, patterns observed within controlled sub-plow zone contexts at 33HY0167 can be compared with patterns observed within the surface-collected plow zone assemblage to determine the likely temporal and/or functional associations of the plow zone assemblage (or sub-assemblages within the larger assemblage).

Hypothesis #3: Stone Tool Production and Craft Specialization

Hypothesis:
Craft specialization in the manufacture of stone tools increased over time from the Late Archaic through Late Woodland periods.

Means of Testing:
Craft specialization in lithic manufacture is often correlated with increasing spatial segregation of craft activities from domestic activities. Comparison of assemblages from archaeological contexts at 33HY0167 dating from different time periods should be able to demonstrate whether any chronological trends exist in the spatial correlation (or lack thereof) of stone tool production and domestic activities, such as food preparation. In addition, the presence of microdebitage in areas otherwise lacking evidence of stone tool manufacture/maintenance or other activities is considered to be indicative of lithic workshop activity. Thus, systematic sampling of the plow zone for microdebitage may help to determine whether lithic workshops were present within the NMRC project area.

Hypothesis #4: Late Archaic Settlement Patterning – Catchment Zones and Site Types

Hypothesis:
The Late Archaic component of 33HY0167 represents a base camp within a previously undefined catchment zone, or alternatively, a lithic workshop associated with a nearby/adjacent base camp.

Means of Testing:
A combination of GIS-based landscape analysis and a re-evaluation of data collected during the University of Toledo’s 1980 Mid-Maumee River Valley Survey (as well as subsequent CRM investigations in the region) can be used to determine whether the Late Archaic component of 33HY0167 more likely represents a base camp (or a lithic workshop that is part of a larger base camp site), or a separate lithic workshop site within either a previously defined or previously undefined catchment zone.

Hypothesis #5: Late Archaic Band Mobility or Trade/Exchange Networks?

Hypothesis:
During the Late Archaic period in Northwest Ohio, band mobility decreased and reliance on trade/exchange networks increased. This is demonstrated by a predominance of artifacts manufactured from exotic raw material types during earlier portions of the Late Archaic period, gradually shifting to a predominance of artifacts manufactured from locally available materials during later portions of the Late Archaic period.
Means of Testing:
This hypothesis can be tested through the full excavation and comparison of previously identified Late Archaic deposits at 33HY0167 as well as the identification, excavation and dating of additional Late Archaic deposits, if such exist.

Hypothesis #6: The Middle Woodland Bipolar Settlement Pattern Model

Hypothesis:
The Seasonal Coalescence-Dispersal Pattern and the Focal Settlement Pattern represent temporally sequential developments within the Western Basin Middle Woodland culture area, with the former developing out of earlier Early Woodland patterns and the latter presaging increased sedentism during the Late Woodland period.

Means of Testing:
This hypothesis can be tested through the full excavation and comparison of previously identified Middle Woodland deposits at 33HY0167 as well as the identification, excavation and dating of additional Middle Woodland deposits, if such exist.

Hypothesis #7: The Western Basin Middle Woodland and the Hopewell Interaction Sphere

Hypothesis:
While Western Basin Middle Woodland populations were not full participants in the Hopewell Interaction Sphere, increased contact and trade/exchange relationships with Hopewell populations to the south are evident at 33HY0167. In particular, the presence of surprisingly high percentages of “exotic” tool stone varieties in Middle Woodland contexts at this site indicates an economic connection to Hopewell populations.

Means of Testing:
Building on the results of the Phase II investigation, this hypothesis can be tested through the full excavation and statistical comparison of previously identified Middle Woodland deposits at 33HY0167 as well as the identification, excavation and dating of additional Middle Woodland deposits, if such exist. Furthermore, comparison of the Middle Woodland assemblage from 33HY0167 to coeval assemblages from other sites in the Maumee River Valley could help to determine whether 33HY0167 represents an outlier or a typical site in regards to this hypothesis.

Hypothesis #8: Cultural Origins of, and Influences on, the Late Woodland Western Basin Tradition

Hypothesis:
Contra Stothers and Bechtel (2000), Late Woodland Western Basin Tradition populations in northwestern Ohio developed out of existing Western Basin Middle Woodland populations rather than migrating from the St. Clair-Detroit River region after ca. A.D. 600.

Means of Testing:
This hypothesis can be tested through the full excavation of previously identified Middle and Late Woodland deposits at 33HY0167 as well as the identification and excavation of additional Middle and Late Woodland deposits. Statistical comparisons of these temporal sub-assemblages can be used to determine whether any evidence of cultural change exists between these site components, and comparison to similar assemblages from other sites in both northwest Ohio and southeast Michigan could address the specific scenario postulated by Stothers and Bechtel (2000).
Hypothesis #9: Settlement Patterning during the Late Woodland Period

Hypothesis:
Along with sites 33HY0181-0184 (collectively, the Campbell Soup site), 33HY0167 represents a warm-season focal settlement and/or associated satellite stations at the center of a band-level territorial range similar in size or slightly smaller than those previously documented for the Late Archaic period in the Maumee River Valley. Furthermore, this focal settlement/catchment zone was part of a larger system that included the neighboring focal settlements/catchment zones represented by the Gunn-Eberle site complex (33HY0033, 33HY0077, 33HY0081-0083) and the Johnson site (33HY0207).

Means of Testing:
Absent additional archaeological investigation outside of the APE for the New Maumee River Crossing Project, the hypothesized relationship between the Late Woodland component of 33HY0167 and sites 33HY0181-0184 will necessarily remain speculative. However, a re-examination of the artifact assemblages from the Campbell Soup site (focusing on lithic artifacts) and statistical comparison of the aggregated assemblages from the Ritter No. 1/Campbell Soup sites, the aggregated Late Woodland assemblages from the Gunn-Eberle site complex, and/or the Late Woodland assemblage from the Johnson site may be able to demonstrate or refute similarity of function. Furthermore, a combination of GIS-based landscape analysis and a re-evaluation of data collected during the University of Toledo’s 1980 Mid-Maumee River Valley Survey (as well as subsequent CRM investigations in the region) can be used to test different catchment zone models for the Late Woodland period in the mid-Maumee River Valley.

Hypothesis #10: The Fate of the Western Basin Tradition

Competing Hypotheses:
According to a model developed by Stothers and his students, cultural changes evident in the Western Basin and the Maumee River Valley during the terminal Late Woodland / Late Prehistoric transition period were the result of the displacement of Western Basin Tradition, Younge Phase populations by an intruding population belonging to the Wolf Phase of the culturally distinct Sandusky Tradition (e.g., Bechtel and Stothers 1993; Stothers 1999; Schneider 2000; Stothers and Bechtel 2000). However, Pratt (1993) and Brose (2000) have advanced a competing model which explains cultural changes during the terminal Late Woodland / Late Prehistoric transition period as in situ cultural development in response to environmental stresses brought about by the “Little Ice Age.” The evidence from 33HY0167 provides support for the latter model.

Means of Testing:
Published descriptions of the cultural changes that are at the heart of these competing models focus heavily on ceramic styles, mortuary behavior, and ethnohistoric/linguistic data. Missing from this debate is any consideration of changing lithic technology, raw material preferences, etc. Full excavation of previously identified terminal Late Woodland/Late Prehistoric deposits at 33HY0167, in addition to the identification and excavation of additional terminal Late Woodland/Late Prehistoric deposits as well as earlier Late Woodland deposits, could allow for both quantitative and qualitative comparisons of assemblages between temporal contexts in an attempt to determine whether the evidence from 33HY0167 supports either model. Additionally, it is possible that soil phosphate analysis (see Nolan 2014) could be used to test the Pratt/Brose hypothesis that the onset of the “Little Ice Age” resulted in a retreat from maize agriculture by Late Prehistoric populations in the Maumee River Valley, as well as to identify whether 33HY0167 likely represented a warm-season focal settlement during the terminal Late Woodland / Late Prehistoric transition period.
The field methods for Stage 2 data recovery excavations that were proposed in the DRP were developed to maximize the probability that the type and amount of data necessary to address these research questions would be collected when the DRP was implemented.

2.2 Proposed Field Methods

Depending on the results of the Stage 1 data recovery activities, one of the following two methods was to be utilized during the second phase:

- **Method #1:** If the soil phosphate testing and core sampling indicated that potential prehistoric features or activity areas were more widespread than has been suggested by the Phase I and Phase II investigations, the Principal Investigator was to direct a skilled backhoe operator, using a backhoe with a smooth-bladed bucket, in the stripping of the plow zone from all or a portion of the data recovery project area.

- **Method #2:** If the soil phosphate testing and core sampling indicated that it was unlikely that prehistoric features or activity areas existed outside of the areas identified as containing such deposits during Phase I and Phase II investigations, more targeted backhoe or manual excavation of block units (e.g., 4\(m^2\) blocks) was to be conducted. These block units were to be placed so as to uncover all of the potential anomalies of archaeological interest identified by the Phase II magnetic gradient survey, as well as at least one negative space (defined as a space where the magnetic gradient survey, soil phosphate testing, and core sampling failed to indicate the potential presence of prehistoric archaeological deposits).

As a result of the soil phosphate testing, Method #1 was recommended in the Stage 1 report. Following the plow zone stripping, all potential cultural features were to be mapped in relation to the site grid and assigned feature numbers. In order to maintain consistency with the field methods utilized during the Phase II investigation of 33HY0167, one-quarter of the plow zone soil removed from the vicinity of suspected prehistoric features or activity areas (as identified by the Phase II magnetic gradient survey and/or the Phase III soil phosphate testing and core sampling) was to be screened. In areas where no potential features were visible at the base of the plow zone, the BE soil horizon was to be removed and screened in a similar manner. Following the removal of the plow zone and/or BE soil horizon and feature mapping, each feature was to be trowel excavated by either natural stratigraphic levels (where present) or arbitrary 3.9-in (10-cm) levels within the BE and/or B soil horizons. All features were first to be bi-sected; all features confirmed to be cultural in origin (as opposed to being the result of rodent burrowing activity, historic farming activity, etc.) were then to be subjected to full-fill excavation.

All soil (except for unscreened plow zone soil) was to be screened through ¼-inch wire mesh, and all recovered artifacts were to be bagged and labeled by provenience. Organic materials were to be collected and wrapped in foil, and soil samples for botanical analysis were to be collected from all excavated feature contexts. Digital photographs were to be taken of all features and other relevant contexts, and plan/profile views of excavation units and features were to be drawn to scale. Detailed notes regarding soil types, colors, textures, and inclusions were also to be kept.

2.3 Deviations from the Data Recovery Plan

During the course of the Stage 2 data recovery excavations, several deviations from the proposed field methods were made. These deviations were planned in consultation with Thomas Grooms of the OSHPO and Laura Segna, Stanley Baker and Jason Watkins of ODOT. In each case, the justification for deviating from the field methodology contained in the DRP was a combination of (a) additional information about the
site that came to light during the Stage 1 and Stage 2 investigations, and (b) the need to maximize time and resources in extracting the most useful data from the site during Stage 2 investigations.

First, no plow zone soil was screened during the data recovery excavations. The geomorphological assessment indicated that cultural materials within the plow zone likely represented a mixed assemblage due to episodic flood scouring followed by slackwater deposition. Therefore, any analysis dependent upon a strong correlation of plow zone artifact patterning and intact, sub-plow zone cultural contexts would be relatively weak at best. However, following the mechanical removal of the plow zone, loose artifacts were collected from the trench floor and assigned a plow zone provenience based on a 33 x 33 ft (10 x 10 m) site grid.

Second, no additional stripping of the BE soil horizon was conducted. Potentially cultural features were found to be widespread across the site, and while some smaller areas lacked such features, the distribution of features across the project area was generally consistent with the results of the soil phosphate testing. Instead of additional stripping, three deep trenches were mechanically excavated, two along the western edge of the project area running from grid north to grid south, and one through the middle of the site running from grid north to grid south (Figure 2.1). Each trench was approximately 4.0 ft (1.2 m) wide by 6.0-8.0 (1.8-2.4 m) deep. These trenches allowed for the collection of additional geomorphological data, particularly as pertains to differences across the site, and provided support for the interpretation of several test units that contained cultural artifacts but which failed to produce cultural features.

As a corollary to the decision to excavate deep trenches rather than conduct additional stripping of the BE soil horizon, several planned test unit excavations (placed so as to investigate magnetic anomalies identified during the Phase II testing that did not correlate with any visible features at the base of the plow zone) were not conducted. Specifically, it was determined that Anomalies 2, 12, 15 and 17 were likely the result of either gravel deposits (including some cultural material) resulting from slackwater deposition following flood events or deeply buried large rocks, rather than cultural features. Anomalies 12 and 17 were partially investigated during the Phase II investigation through 6.6 x 6.6 ft (2 x 2 m) test units; these units were to be re-opened and excavation continued. New 2 x 2 m test units were to be opened and excavated for Anomalies 2 and 15. (The source of all other magnetic anomalies was identified either during the Phase II testing or after the plow zone was removed.) However, test units excavated on top of three other, similar anomalies (1, 5 and 11) during both Phase II and Phase III investigations failed to yield intact cultural deposits. Therefore, no attempt was made to identify the source of anomalies 2 and 15 or to further investigate anomalies 12 and 17. The remaining Phase II test units were re-opened and excavation finished as planned; in addition, a new 2 x 2 m test unit was excavated to test the location of Anomaly 6 (see Figure 2.1).
Figure 2.1
Test Units and Trenches
New Maumee River Crossing Project
Napoleon, Ohio

Notes
The Henry County photography, dated April 2011, is provided by OGRIP as part of the Ohio Statewide Imagery Program.
3.0 PRELIMINARY RESULTS

The Stage 2 data recovery excavations were conducted from March 26 – May 11, 2018. The month of April witnessed higher than normal rain amounts, resulting in several days when excavation was halted due to standing water across portions of the site and poor drainage throughout the project area. Temperatures ranged from the 40s – 70s °F. Two Public Dig Days were held (on April 7 and 21), with a total of 64 visitors/volunteers participating. In addition, representatives from the OSHPO, ODOT’s Office of Environmental Services, and the Miami Nation visited the project site on multiple occasions during the Stage 2 data recovery excavations. The following sections summarize the results of the three primary activities conducted during the excavations: feature identification and excavation, test unit excavation, and deep trenching.

3.1 Plow Zone Stripping and Feature Identification / Excavation

Heavy equipment and operators for the mechanical removal of the plow zone was provided by the Henry County Engineer’s Office. The top half of the plow zone (averaging 4.9 in [12.5 cm] across the site) was removed using a bulldozer with a flat-bladed bucket, while the bottom half of the plow zone was removed using a backhoe with a flat-bladed, 4.0-ft (1.2-m) wide bucket. Following this, the trench surface was shovel-scraped in order to clearly delineate all soil stains and other features. Plow zone removal and shovel scraping was conducted in 33 x 33 ft (10 x 10 m) blocks, designated by the coordinates of the southwest corner of each block. A total of 60 such blocks were cleared in this way, ranging from N900 E940 in the southwestern corner of the project area to N990 E990 in its northeastern corner.

During the Phase II investigations, excavation units placed in search of magnetic anomalies were designated by the anomaly number while features were assigned a two-part decimal designation, with the first part being the anomaly number and the second part being assigned consecutively to features within the test unit. Thus, for instance, the test unit for Anomaly 16 contained Features 16.1, 16.2 and 16.3. In order to maintain some consistency with this method, during the data recovery excavations newly discovered features were either assigned to one of the magnetic anomaly numbers (if the features matched the location of the anomaly), or were assigned a new number beginning with Feature 18 (since 17 magnetic anomalies were identified during the Phase II investigation) and increasing sequentially. However, decimal designations were not used during the data recovery excavations. In a few cases where a soil stain was originally identified as a single feature but was later determined to represent two separate, closely spaced features, the two separate features were designated as #a and #b. In total, 106 features (soil stains, large rocks or gravel / lithic material scatters) were identified at the base of the plow zone (Figure 3.1). Two additional features were identified within test units or deep mechanical trenches. When combined with the features identified during Phase II investigations, the total number of features recorded within the NMRC project area is 124. These features are listed and some relevant attributes summarized in Appendix B, Table B1.

As can be seen on Figure 3.1, the features identified within the NMRC project area are widespread across the site. However, a major cluster of features is visible in the area from N960-N980 and E960-E995 on the project site grid, and several smaller, more diffuse groupings are present further to the south. The location of the major cluster of features corresponds to the area of highest density of magnetic anomalies as identified during the Phase II investigation, which is also the western end of the natural levee that extends from the project area eastward.
Figure 3.1: Features Identified During Stage 2 Data Recovery
New Maumee River Crossing Project
Napoleon, Ohio
With one exception, all newly identified features were investigated in some form. The exception was Feature 69, which consisted of a large, rectangular soil stain with rock piles at each corner. This feature was identified as a historic farm structure, likely a storage building or animal pen/house. No excavation of this feature was attempted. Upon hand troweling, several other features were found to be extremely shallow, ephemeral soil stains, and were not further investigated. The majority of features, however, were subjected to manual excavation. All such features were first bisected, with the first half excavated in arbitrary 3.9-in (10-cm) levels and the second half excavated according to natural strata (if present). In many cases, following the excavation of the first half of the feature, an additional rectangular “window” was excavated in order to clearly delineate the feature profile.

As can be seen in Table B1, 17 of the 124 features recorded within the NMRC project area have been determined to have non-cultural origins (e.g., insect activity, rodent burrows, root casts, flood deposits, or large rocks). An additional three features contain cultural material but appear likely to be flood deposits, and five features are associated with 19th- or 20th-century farming activity (plow scars and farm structure remnants).

Of the 99 remaining features, 13 exhibited moderate to heavy bioturbation, making identification of function or origin difficult. Forty-five of the 99 features yielded pre-contact material culture (chipped or ground stone artifacts, FCR, ceramics, faunal remains, or ochre), and 17 features contained carbonized organic material. In addition, many features appear to have been severely truncated by the plow zone. Nevertheless, identifiable profile shapes included basins, bowls, depressions, pits, and cultural material scatters.

Samples or carbonized or other organic material were collected from 40 distinct feature contexts; these will be evaluated for the likelihood that AMS dating of the samples would return useful data, and if so, the samples will be submitted to Beta Analytic, Inc. for processing and analysis. Similarly, 47 soil samples were collected from feature contexts; these will be submitted to a professional paleoethnobotanist for flotation and retrieval of macrobotanical remains.

### 3.2 Test Unit Excavation

As discussed briefly in Section 2.3, original plans called for the re-opening several test units from the Phase II investigations in order to complete the excavation of these units or the features within them. In addition, new test units were to be opened in any location where magnetic anomalies had been identified during the Phase II investigation but in which no obvious source of the anomaly could be seen following the removal of the plow zone during the Stage 2 data recovery. In part, both of these related activities were planned as a result of the possibility of deeply buried deposits at the site, as indicated by the geomorphological assessment (Purtill 2018).

During the Stage 2 data recovery excavations, Test Units 5, 8, 10, 11, 14, and 16 were all re-opened. Test Units 8, 10, 14 and 16 were re-opened in order to re-locate, and complete the excavation of, Features 8.1, 10.1, 14.1 and 16.1. Each of these cultural features was either bi-sected or quarter-sected during the Phase II investigations, but not fully excavated. All four features were successfully re-located and completely excavated during the Stage 2 data recovery excavations.

During the Phase II investigations, Test Unit 5 revealed a scatter of lithic material that was recorded as Feature 5.1. While this scatter did contain culturally modified lithic artifacts, it was not associated with an identifiable, bounded soil deposit. Therefore, this test unit was re-opened during the Stage 2 data recovery in order to determine how deep the lithic deposit extended as well as to determine whether it represents a

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1 The feature identifications contained in Table B1 should be considered to be in draft form, and all counts discussed in this and the following two paragraphs are subject to change upon further analysis.
prehistoric living surface or something else. Excavation of this unit proceeded in 3.9-in (10-cm) levels, eventually extending to a depth of approximately 21.7-23.6 in (55-60 cm) below the scraped trench surface (cmbss / inbss). A small boulder was uncovered in the center of the unit at a depth of 10.2 inbss (26 cmbss); this boulder appears to have been the source of Anomaly 5. The boulder was located within a gravelly, irregularly-shaped soil deposit that appears to represent a post-flood slackwater deposit. Although a lithic tool was recovered from the interface of this deposit and the level above it, it seems likely that this artifact – as well as the artifacts from the deposit designated as Feature 5.1 – was also deposited in this location after having been moved by floodwaters.

In addition, a new soil feature (designated as Feature 115) was recorded within Test Unit 5, Level 3 and excavated. This feature, however, does not appear to have been cultural in origin, and may simply have been a concentration of organic matter within a larger flood-deposited soil layer.

During the Phase II investigation, Test Unit 11 revealed a small, irregularly-shaped, dark soil stain near the southern edge of the unit at the base of the plow zone. This stain, although likely not cultural, was interpreted as the source of Anomaly 11 and was completely excavated at that time. However, due to the possibility of more deeply buried cultural features within the site, Test Unit 11 was re-opened and excavated to a depth of 18.9 inbss (48 cmbss) (in 3.9-in [10-cm] levels). No new cultural features were identified within the unit. However, a thin lens of water-worn gravel was identified at a depth of 15.7 inbss (40 cmbss), likely representing a post-flood slackwater deposit. This gravelly lens may have been the source of the magnetic anomaly in this location.

In addition to the re-opened test units, one new test unit – Test Unit 6 – was opened. The southwestern corner of this 6.6 x 6.6 ft (2 x 2 m) unit was placed at N960.5 E985, in an attempt to locate the magnetic anomaly designated as Anomaly 6. Jarrod Burks had identified this anomaly as a possible subtle pit feature during the Phase II investigation (Burks 2015). This test unit was opened near the close of Stage 2 data recovery excavations. Since only one cultural feature had been identified within the project area at a depth lower than the Ap / BtE soil horizon interface to that point in the Stage 2 excavations, and that feature (Feature 116) was located just 3.9 in (10 cm) below this interface, only one 3.9-in (10-cm) level was excavated within Test Unit 6. No features, either cultural or non-cultural in origin, were identified within the test unit, and no artifacts were recovered. Given what was learned from the excavation of Test Units 5 and 11, it seems likely that Anomaly 6 was the result of a similar non-cultural site formation process.

Due to the new information collected from Test Units 5, 6 and 11, as well as the geomorphological assessment, planned new test units to investigate magnetic anomalies 2 and 15 (which were characterized by Burks [2015] as “not archaeology”) were not excavated. The planned re-opening of Test Units 14 and 17 were also scrapped, as the non-feature deposits of lithic material encountered in these units during the Phase II investigation (the latter having been designated as Feature 17.1) highly resembled that recorded in Test Unit 5. Due to this resemblance, it seems likely that Anomalies 14 and 17 were also the result of post-flood slackwater deposits of gravelly material, including some displaced lithic artifacts.

Sources for the remaining magnetic anomalies that had not been investigated during the Phase II site investigations – Anomalies 3, 4, 7, 9, and 13 – were identified within the BtE horizon following the removal of the plow zone and were recorded as features. Therefore, no test units were necessary in these locations.

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2 “Scraped surface” here refers to the interface between the plow zone and the BtE soil horizon, as uncovered via mechanical excavation and shovel scraping during Stage 2 data recovery excavations.

3 Test Unit 14 was re-opened during the Public Dig Day on April 7 and the top 3.9 in (10 cm) of Phase II backfill dirt was re-excavated by volunteers. However, no previously undisturbed soil was newly excavated within this unit.
3.3 Deep Trenching

As discussed in Section 2.3, three deep trenches were mechanically excavated (using a backhoe) in order to provide a better picture of site geomorphology and soil stratification, including how these might change across the site as well as the potential for deeply buried cultural deposits. The locations of these trenches are shown in Figure 2.1. Each trench was approximately 4.0 ft (1.2 m) wide and excavated to average depths of 6.0-8.0 ft (1.8 – 2.4 m). The trench locations were as follows:

- Trench 1 was located at E949 and extended from N1000 to N968.
- Trench 2 was located at E946 and extended from N968 to N937.
- Trench 3 was located at E978 and extended from N1000 to N945.

According to U.S. Department of Agriculture soil maps, soils in all three trenches are mapped in the Haney Series (Fine-loamy, mixed, active, mesic Aquic Hapludalfs). Observed soil profiles within the trenches generally fell within the range of characteristics described in the Official Soil Description, with most variation being in the number, size, and color of redoximorphic features. Soil characteristics (color; texture; structure; consistence; roots; ped and void features; redoximorphic features; inclusions; and boundary) were recorded in the field according to the Field Book for Describing and Sampling Soils (Schoeneberger et al. 2012).

Representative soil profiles revealed by the deep trenching are described in narrative form in Appendix C. These soil profiles generally confirm the results of the geomorphological assessment (Purtill 2018) and reinforce the interpretation of Test Units 5 and 11. The landform is primarily silty and sandy loams, with thin discontinuous horizontal layers of gravel and sand at various depths throughout. These layers likely represent post-flood slackwater deposits, and were slightly more common in Trench 3 than in Trenches 1 and 2.

One cultural feature was identified below the surface of the BtE soil horizon during the deep trenching. Designated Feature 116, this feature was located at a depth of 3.9 in (10 cm) below the top of the BtE horizon and contained charcoal and burnt earth. As this feature was only discovered after approximately half of the feature fill had been removed by the backhoe, it was quickly recorded and the remaining half of the feature excavated. No artifacts were recovered. Apart from this feature, no evidence for more deeply buried features was observed within any of the three deep trenches.
4.0 SUMMARY AND PRELIMINARY ANALYSIS

Site 33HY0167 (Ritter No. 1) is a multi-component, prehistoric archaeological site located on the south side of the Maumee River just outside of the Village of Napoleon in Harrison Township, Henry County, Ohio. As a result of Phase I and Phase II archaeological investigations conducted for a proposed new bridge construction project, the site was determined eligible for the NRHP under Criterion D (information potential). Because a portion of the site will be adversely impacted by the construction of the proposed bridge, which will require a permit from the USACE, an MOA among the USACE Buffalo District, ODOT, OSHPO, HCEO, was negotiated. The MOA incorporated a DRP to direct the collection of archaeological data from the site prior to the proposed bridge construction. In the fall of 2017 the HCEO contracted MSG to implement the DRP.

The DRP stipulated that data recovery activities should be divided into two stages. Stage 1 activities (a geomorphological assessment, soil chemistry analysis, and a microdebitage survey) were intended to provide important information about site formation processes that could be used to direct Stage 2 data recovery excavations. The results of the Stage 1 activities were presented in a report to the consulting parties to the MOA in February 2018. Stage 2 data recovery excavations were conducted from March 26 – May 11, 2018. Three primary activities were involved:

- Mechanical stripping of the plow zone followed by identification and excavation of potential cultural features;
- Excavation of 6.6 x 6.6 ft (2 x 2 m) test units, both to finish the excavation of features and cultural deposits initially identified during the Phase II investigation as well as to explore the locations of magnetic anomalies identified during the Phase II investigation that could not be associated with any features visible at the base of the plow zone; and
- Mechanical deep trenching of selected areas in order to collect additional geomorphological data, particularly as pertains to differences across the site.

As a result of these efforts, a total of 108 new features were identified within 33HY0167, bringing the total number of recorded features at the site (combined between Phase II and Phase III investigations) to 124. A major cluster of features is located in the area between N960-N980 and E960-E995 on the project site grid, corresponding to the western end of a natural levee that runs from the project area eastward.

Approximately 20 of these features identified within the NMRC project area appear to be either definitively or likely non-cultural in origin, while an additional five features are the result of historic-period farming activity. While some of the remaining 99 features may be determined to be non-cultural upon further analysis (and many exhibited evidence of either bioturbation, truncation from plowing, or both), many of them do represent a range of pre-contact cultural activities. While artifact processing and analysis is still ongoing, a range of material types were recovered, including ceramics, chipped and ground stone artifacts, FCR, ochre, faunal remains, and carbonized organic material. Soil samples were recovered from 47 discrete feature contexts and will be submitted to a professional paleoethnobotanist for flotation and retrieval of macrobotanical remains. In addition, carbonized or other organic remains were recovered from 40 distinct feature contexts; these will be evaluated and some will be submitted to Beta Analytic, Inc. for AMS dating.

In addition to the feature identification and excavation, the excavation of test units in the locations of selected magnetic anomalies (that could not be associated with visible sub-plow zone features) and the mechanical excavation of three deep trenches across the site provided valuable information about site formation processes that support the interpretation offered in the Phase III, Stage 1 geomorphological assessment of 33HY0167 (Purtill 2018). Specifically, a number of post-flood slackwater deposits were identified, some of which contained cultural material in the form of lithic debitage and small FCR, but that did not otherwise appear to represent in situ cultural deposits. Several of these deposits appear to have been the source of magnetic anomalies as identified during the Phase II investigation (Burks 2015).
In addition to the data recovery excavations, Stage 2 research activities include the re-examination of lithic artifact assemblages from three other pre-contact archaeological sites/site clusters in the mid-Maumee River Valley (the Gunn-Eberle site, the Campbell’s Soup site, and the Johnson site) and the collection of paleoenvironmental data on the Maumee River Valley in order to construct a site catchment analysis for 33HY0167. The examination of the three other site assemblages has been completed, and statistical analysis will be used to compare these three sites to each other and to 33HY0167. The collection of paleoenvironmental data is ongoing.

In sum, MSG successfully completed the fieldwork in accordance with the intent of the DRP. Deviations from the DRP were made in consultation with ODOT-OES and the OSHPO. MSG has collected an appropriate sample of the prehistoric cultural remains present at the site. This sample of material remains will be integrated with data from the Phase I, Phase II and Phase III, Stage 1 investigations in order to address, as far as the data will allow, the research questions that were posed in the DRP. At this time, it appears that the portion of 33HY0167 that has been investigated for the NMRC project consists of multiple temporally ephemeral but geographically overlapping occupations spanning from the Late Archaic through the Late Prehistoric periods. The repeated use of this locale over time indicates that it was an environmentally or socially important location (or both), although at this time its exact role in the evolving social and settlement-subsistence patterns employed by the pre-contact inhabitants of the mid-Maumee River Valley is still uncertain.
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APPENDIX A
10x10 METER GRID BLOCK MAPS
Figure A1
N900 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 114
10YR3/2
sandy clay loam
with charcoal

10YR5/6
sandy clay
Figure A2
N900 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

Feature 89
10YR3/2
silty clay loam

Feature 88
10YR3/2
silty clay loam
10YR3/2
sandy clay loam
with charcoal

10YR5/6
sandy clay
Figure A8
N910 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/2
sandy clay loam

Feature 90
10YR3/1
silty clay

10YR5/6
sandy clay

Plowscar
Figure A10
N910 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/2
sandy clay loam

Feature 69
10YR3/3
sandy clay

10YR5/6
sandy clay

Plowscar
Rock Pile

0 0 2 6
feet meter
Figure A11
N910 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/4 silt clay
10YR3/2 sandy clay loam
10YR5/6 sandy clay

Feature 31
7.5YR4/4 burnt earth

Plowscar
Figure A12
N910 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

- 10YR5/6 sandy clay
- 10YR3/2 sandy clay
- 7.5YR2.5/2 sandy clay with charcoal inclusions

Feature 27
Feature 28

Legend:
- Plow scar
- Rock

Scale:
0 feet
0 meter
6
10YR5/6 sandy clay

Feature 112

10YR3/2 sandy clay loam with charcoal

Feature 113

Feature 111
Figure A14
N920 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/2
sandy clay loam

Feature 91
10YR3/1
silt loam

10YR5/6
sandy clay

Plowscar
Figure A15
N920 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

10YR3/2
sandy clay loam

Feature 71
10YR3/1
tsilt loam

Feature 72
10YR3/2
silty clay

Feature 73
2.5YR4/8
silt loam

Plowscar
Glass Slag
Charcoal

0 2 6
0 feet
meter

Plowscar

Glass Slag

Charcoal
Figure A16
N920 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A19
N930 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 109
10YR3/2
sandy clay loam with charcoal

Feature 110
10YR5/6
sandy clay

Feature 111
10YR3/3
sandy clay loam

10YR3/2
sandy clay loam with charcoal

Plowscar

0 2 6
0 6
feet
meter
Figure A20
N930 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/2 sandy clay loam

10YR5/6 sandy clay

0 feet
0 meter
2
6
Figure A21
N930 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A22
N930 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 67

10YR3/1
silty clay

10YR5/6
sandy clay

10YR3/2
sandy clay loam

10YR3/2
sandy clay loam

Plowscar

Rock

0 feet
0 meter
6
Figure A23
N930 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

- 10YR3/3 sandy clay loam
- 10YR3/3 silty clay
- 10YR5/6 sandy clay

Legend:
- Plowscar
- Phase II Test Unit
- Metal Object
- Rock

Scale:
0 2 6 feet
0 meter
Figure A24
N930 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

10YR4/4
sandy clay loam

Feature 60
10YR3/2
silty loam

Plowscar

0 2 6
feet meter

0
**Feature 94**
10YR3/1
sandy clay loam

**Feature 93**
10YR3/1
sandy clay loam

**Feature 92**
10YR3/1
sandy clay loam

**10YR5/6**
sandy clay

**10YR3/2**
sandy clay loam
Figure A27
N940 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A28
N940 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A29
N940 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/3 sandy clay

Feature 24
10YR5/4 sandy clay

10YR3/3 sandy clay

Feature 13
10YR3/1 sandy clay

N945 E989.5

10YR3/3 sandy clay

10YR5/6 sandy clay

Plowscar

Phase II Unit

0 2 6
0 2
feet
meter

Plowscar

Phase II Unit
Figure A30
N940 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Phase II Test Unit

Lithic/Biface

Historic Ceramic

Brick Fragment

Feature 56
10YR3/3 sandy clay loam with charcoal

Feature 57
10YR3/3 sandy clay loam with charcoal

10YR5/6 sandy clay

10YR3/3 sandy clay loam with charcoal

N945 E989.5
Figure A31
N950 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A32
N950 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

N957 E949

10YR3/3 sandy clay loam

10YR5/6 sandy clay

Feature 95
10YR3/2 sandy clay loam

Plowscar
Phase II Test Unit

0 2 6
feet
meter

0

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Figure A33
N950 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A35
N950 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 25
10YR4/3
sandy clay loam

Feature 24
10YR4/4
sandy clay

Feature 23
10YR4/3
sandy clay loam

Feature 26
10YR4/3
sandy clay loam

Gravel Deposit

0 2 6
meter
feet
Feature 22
10YR4/4 silt loam

10YR4/4 silt loam

10YR5/6 sandy clay

Plowscar

Rock
Figure A37
N060 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

Feature 104
10YR3/2
sandy clay loam
with charcoal

Gravel Deposit

0 2 6
feet
meter
Figure A38
N960 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 97
10YR6/4
silty clay

Feature 96
10YR6/4
sandy clay

10YR3/2
sandy clay loam

10YR5/6
sandy clay

Plowscar

0 0 6 2
feet
meter
Figure A39
N960 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 85
10YR6/4
silty clay

Feature 82
10YR2/1
sandy clay loam

Feature 83
10YR3/2
silty clay

10YR5/6
sandy clay

10YR3/2
sandy clay loam

Iron Stain
Plowscar
Gravel Deposit
Iron Stain
Figure A40  
N960 E970 Block  
Ap/BtE Horizon Interface  
Phase III Data Recovery, 33HY0167  
Napoleon, Ohio

- Feature 51
- Feature 52
- Feature 50
- Feature 49
- Feature 48
- Feature 47
- Feature 46
- Feature 53

Legend:
- Plowscar
- Feature/Stain 10YR3/3 sandy clay loam with charcoal

Map showing archeological features and soil types.
Figure A41
N960 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

- Feature 33: 10YR2/2 sandy clay loam
- Feature 41: 10YR4/2 silty loam with charcoal
- Feature 4: 10YR4/2 silty loam
- Feature 34: 10YR4/2 silt loam
- Feature 35: 10YR4/2 silt loam
- Feature 19: 10YR5/6 sandy clay with gravel concentration
- Feature 45: 2.5YR3/6 sandy clay
- Plowscar
- Phase II Test Unit
- Lithic
- Rock
Figure A42
N960 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A43
N970 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/3
sandy clay loam

10YR5/6
sandy clay
Figure A44
N970 E950 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A45
N970 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A46
N970 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A47
N970 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 44
10YR2/2
silty loam

Feature 42
10YR4/2
silty loam with charcoal

10YR5/6
sandy clay

Feature 43
10YR3/2
silt

10YR4/2
sandy clay loam

Legend:
- Plowscar
- Phase II Unit
- Rock
Figure A48
N970 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio
Figure A49
N980 E940 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Plowscar
Rock

Feature 103
10YR3/2
sandy clay loam
with charcoal

Feature 102
10YR3/2
sandy clay loam
with charcoal

Feature 101
10YR3/2
sandy clay loam
with charcoal

10YR5/6
sandy clay

10YR3/3
sandy clay loam

0 2 6
0 feet

meter

N
Figure A51
N980 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR3/2
sandy clay loam

Feature 59
10YR3/2
silty clay

10YR3/1
silty clay

10YR5/6
sandy clay

Plowscar
Lithic Biface Fragment
Figure A52
N980 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Feature 58
10YR3/2
silty clay

Feature 59
10YR3/2
silty clay

10YR5/6
sandy clay

Lithic Flake
10YR5/6 sandy clay
10YR5/6
sandy clay
10YR5/6
sandy clay

10YR3/2
sandy clay loam with charcoal
Figure A57
N990 E960 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

Lithic Core
Historic Button
Lithic Core
FCR
Rock

Feature 55
10YR3/2
silty loam

N998
E967

10YR4/4
sandy clay loam

10YR5/6
sandy clay

Phase II Test Unit
Figure A58
N990 E970 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

Lithic Biface
Lithic Core Fragment
Charcoal
Figure A59
N990 E980 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

Feature 7

10YR3/2
silty clay

0 feet
0 meter
6
2

Rock

N

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Figure A60
N990 E990 Block
Ap/BtE Horizon Interface
Phase III Data Recovery, 33HY0167
Napoleon, Ohio

10YR5/6
sandy clay

Feature 18
10YR3/2
sandy clay

Feature 19
10YR3/2
sandy clay
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<th>Feature #</th>
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<th>Ceramic</th>
<th>Lithic</th>
<th>FCR</th>
<th>Ochre</th>
<th>Carbon</th>
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The Mannik & Smith Group, Inc.  
APPENDIX B
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<th>Ochre</th>
<th>Carbon</th>
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### Table B1
Features Recorded within 33HY0167

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Mechanical Deep Trenching: Representative Soil Profiles
(Recorded by Samuel Burns, M.Phil)

Soil Trench 1

N990 West Wall

0-65 centimeters below scraped surface (cmbss)\(^1\): dark yellowish brown (10YR 4/6) sandy clay loam; moderate very coarse angular blocky structure parting to moderate fine angular blocky; firm; few very fine roots in the matrix; many distinct brown (10YR 4/3) clay films on faces of peds; few fine light brownish gray (10YR 6/2) iron depletions in the matrix; few fine to medium strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent fine to medium gravel; clear smooth boundary.

65-90 cmbss: brown (7.5YR 4/4) sandy loam; massive in place parting to weak medium angular blocky structure; firm; many very fine roots in the matrix; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common coarse light brownish gray (10YR 6/2) iron depletions in the matrix; many very fine olive (5Y 5/3) masses of iron accumulation in the matrix; common very fine black (10YR 2/1) masses of manganese accumulation in the matrix; 10 percent fine to medium gravel.

N980 East Wall

0-60 cmbss: brown (10YR 5/3) sandy clay loam; weak medium angular blocky structure; firm; many very fine to fine roots in the matrix; common distinct brown (10YR 4/3) clay films on faces of peds; few fine light brownish gray iron depletions in the matrix; few fine dark brown (10YR 3/3) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; clear wavy boundary.

60-90 cmbss: grayish brown (10YR 5/2) sandy clay loam; weak very coarse angular blocky structure; firm; common very fine roots in the matrix; clay bridging between sand grains; common medium light brownish gray iron depletions in the matrix; many very fine brown (10YR 3/3) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 10 percent fine to medium gravel; gradual wavy boundary.

90-110 cmbss: gray (10YR 6/1) fine gravelly sandy clay; massive; firm; clay bridging between sand grains; many medium light gray (10YR 7/1) iron depletions in the matrix; many medium yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many fine to medium black (10YR 2/1) masses of manganese accumulation in the matrix; 45 percent fine gravel; a band of 80 percent fine to coarse gravel at 93-98 cmbss.

Soil Trench 2

N960 East Wall

0-60 cmbss: brown (10YR 5/3) sandy clay loam; weak medium angular blocky structure; firm; many very fine to fine roots in the matrix; common distinct brown (10YR 4/3) clay films on faces of peds; few faint brown (10YR 4/3) clay films on faces of peds; clay bridging between sand grains; few faint brown (10YR 4/3) clay films on faces of peds; clear smooth boundary.

60-80 cmbss: grayish brown (10YR 5/2) sandy clay loam; weak very coarse angular blocky structure; firm; many very fine roots in the matrix; few faint brown (10YR 4/3) clay films on faces of peds; clay bridging between sand grains;

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\(^1\) "Scraped surface" here refers to the interface between the plow zone and the BtE soil horizon, as uncovered via mechanical excavation and shovel scraping during Stage 2 data recovery excavations.
common medium light brownish gray iron depletions in the matrix; many very fine brown (10YR 3/3) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 15 percent fine to medium gravel; gradual wavy boundary.

80-110 cmb: grayish brown (10YR 5/2) sandy clay loam; weak very coarse angular blocky structure; firm; clay bridging between sand grains; common medium light brownish gray (10YR 5/6) iron depletions in the matrix; many very fine yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many very fine black (10YR 2/1) masses of manganese accumulation in the matrix; 15 percent fine to medium gravel; gradual wavy boundary.

110-140 cmbs: gray (10YR 6/1) gravelly sandy clay; massive; firm; clay bridging between sand grains; many medium light gray (10YR 7/1) iron depletions in the matrix; many fine to medium yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many fine to black (10YR 2/1) masses of manganese accumulation in the matrix; 25 percent fine gravel.

N950 East Wall

0-45 cmbs: brown (10YR 5/3) sandy clay loam; weak coarse angular blocky structure; firm; many very fine to fine roots in the matrix; common distinct brown (10YR 4/3) clay films on faces of peds; few fine light brownish gray iron depletions in the matrix; few fine yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; clear wavy boundary.

45-90 cmbs: grayish brown (10YR 5/2) sandy clay loam; weak very coarse angular blocky structure; firm; few faint brown (10YR 4/3) clay films on faces of peds; clay bridging between sand grains; common medium light brownish gray (10YR 6/2) iron depletions in the matrix; many very fine yellowish brown (10YR 5/8 and 10YR 5/6) masses of iron accumulation in the matrix; many fine black (10YR 2/1) and dark brown (10YR 3/3) masses of manganese accumulation; 15 percent fine to medium gravel; gradual wavy boundary.

90-130 cmbs: gray (10YR 6/1) gravelly sandy clay; massive; firm; clay bridging between sand grains; many medium light gray (10YR 7/1) iron depletions in the matrix; many fine to medium yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many fine to black (10YR 2/1) masses of manganese accumulation in the matrix; 25 percent fine gravel.

Soil Trench 3

N995 East Wall

0-70 cmbs: brown (7.5YR 4/6) sandy clay loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; few very fine and fine roots in the matrix; many distinct brown (10YR 4/3) clay films on faces of peds; gradual wavy boundary.

70-95 cmbs: brown (10YR 4/3) sandy clay loam; weak coarse angular blocky structure parting to weak fine subangular blocky; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; clay bridging between sand grains; many fine black (10YR 2/1) masses of manganese accumulation in the matrix; common coarse grayish brown (10YR 5/2) iron depletions in the matrix; 5 percent fine gravel; gradual smooth boundary.

95-100 cmbs: grayish yellow brown (10YR 5/2) gravelly clay loam; moderate coarse angular blocky structure; firm; clay bridging between sand grains; many fine brownish gray (10YR 6/1) iron depletions in the matrix; common fine to medium yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine black (10YR 2/1) masses of manganese accumulation in the matrix; 25 percent gravel; abrupt wavy boundary.
N980 East Wall

0-65 cmbss: brown (7.5YR 4/4) silt loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; many very fine roots in the matrix; many distinct brown (10YR 4/3) clay films on faces of peds; common coarse to very coarse brownish gray (10YR 6/2) iron depletions in the matrix; few fine to coarse strong brown (7.5YR 5/8) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few fine black (10YR 2/1) masses of manganese accumulation in the matrix; 5 percent gravel; gradual smooth boundary.

65-110 cmbss: yellowish brown (10YR 5/4) sandy loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; few very fine roots in the matrix; few faint dark grayish brown (10YR 4/2) clay films on ped faces; clay bridging between sand grains; many fine brownish gray (10YR 6/2) iron depletions in the matrix; many fine strong brown (7.5YR 5/8) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine black (10YR 2/1) masses of manganese accumulation in the matrix; 5 percent gravel; gradual wavy boundary.

110-150 cmbss: yellowish brown (10YR 5/4) sandy clay loam; massive; few very fine roots in the matrix; clay bridging between sand grains; many fine to medium brownish gray (10YR 6/2) iron depletions in the matrix; many fine strong brown (7.5YR 5/8) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few olive (5Y 5/4) masses of iron accumulation in the matrix; many fine black (10YR 2/1) masses of manganese accumulation in the matrix; 35 percent fine to medium gravel; a band of 80 percent fine to coarse gravel at 130-140 cmbss.

N970 East Wall

0-70 cmbss: brown (10YR 4/4) silt loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; many very fine roots in the matrix; common distinct brown (10YR 4/3) clay films on faces of peds; few fine black (10YR 2/1) masses of manganese accumulation in the matrix; 5 percent gravel; a band of 60 percent fine to coarse gravel at 32-38 cmbss; a band of 80 percent fine to coarse gravel at 58-66 cmbss; clear wavy boundary.

70-110 cmbss: yellowish brown (10YR 5/4) sandy loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; common very fine roots in the matrix; common faint dark grayish brown clay films on ped faces; clay bridging between sand grains; common medium to coarse brownish gray (10YR 6/2) iron depletions in the matrix; common fine to medium brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few fine black (10YR 2/1) masses of manganese accumulation in the matrix; 10 percent gravel; gradual wavy boundary.

110-135 cmbss: yellowish brown (10YR 5/4) sandy clay; massive; clay bridging between sand grains; many fine to medium light gray (10YR 7/1) iron depletions in the matrix; many fine strong brown (7.5YR 5/8) and yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few olive (5Y 5/4) masses of iron accumulation in the matrix; many fine to medium brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; common fine shell fragments; 35 percent fine to medium gravel; a band of black (10YR 2/1) medium sand at 109-114 cmbss.

N960 East Wall

0-60 cmbss: brown (7.5YR 4/4) silt loam; moderate coarse angular blocky structure parting to moderate fine subangular blocky; firm; many very fine roots in the matrix; common distinct brown (10YR 4/3) clay films on faces of peds; common fine brownish gray (10YR 6/2) iron depletions in the matrix; common fine strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few medium yellowish red (5YR 4/6) nodules of iron accumulation in the matrix; few fine black (10YR 2/1) masses of manganese accumulation in the matrix; clear wavy boundary.
60-110 cmbss: yellowish brown (10YR 5/4) sandy loam; weak coarse angular blocky structure parting to weak fine subangular blocky; firm; common very fine roots in the matrix; common distinct brown (10YR 4/3) clay films of faces of peds; clay bridging between sand grains; common coarse brownish gray (10YR 6/2) iron depletions in the matrix; common medium yellowish brown masses of iron accumulation in the matrix; few fine black (10YR 2/1) masses of manganese accumulation in the matrix; common fine shell fragments; 15 percent fine to medium gravel; a band of 60 percent fine to coarse gravel at 65-80 cmbss; abrupt smooth boundary.

110-135 cmbss: yellowish brown (10YR 5/4) sandy clay; massive; few very fine roots in the matrix; clay bridging between sand grains; common coarse light gray (10YR 7/1) iron depletions in the matrix; common coarse yellowish brown (10YR 5/6 and 10YR 5/8) masses of iron accumulation in the matrix; 30 percent gravel; a band of black (10YR 2/1) medium sand at 109-113 cmbss.