

MICHIGAN DEPARTMENT OF TRANSPORTATION/LOCAL AGENCY PROGRAM  
WORK SPECIFICATIONS FOR  
PHASE Ia ARCHAEOLOGICAL SITE IDENTIFICATION SURVEYS  
ON TRANSPORTATION UNDERTAKINGS

April 2024

1. PROFESSIONAL STANDARDS

The archaeological Principal Investigator for all Michigan Department of Transportation (MDOT) and Local Agency Program (LAP) archaeological projects shall meet the Secretary of the Interior's Professional Qualification Standards for Archaeology as set forth in 48 FR 44716 and published in the Code of Federal Regulations, 36 CFR Part 61. The archaeological work is also expected to be carried out in accordance with SHPO's Archaeological Standards and the Code of Conduct and Standards of Research Performance as established by the Register of Professional Archaeologists (RPA). RPA accreditation is not mandatory to undertake an MDOT/LAP project.

2. ARCHAEOLOGICAL SITE LOCATION SURVEY OBJECTIVES

The objective of a Phase Ia archaeological site identification survey is to conduct a "reasonable and good faith effort" (see [https://www.achp.gov/sites/default/files/guidance/2018-05/reasonable\\_good\\_faith\\_identification.pdf](https://www.achp.gov/sites/default/files/guidance/2018-05/reasonable_good_faith_identification.pdf)) to locate archaeological sites within the archaeological Area of Potential Effects (APE) and, when appropriate, to determine the potential for buried deposits to exist in alluvial/colluvial/urban settings. Failure to meet MDOT/LAP expectations of what constitutes a "reasonable and good faith effort", as outlined in these specifications, will result in unacceptable reports and, potentially, additional fieldwork.

For MDOT/LAP projects, the archaeological APE is defined as the existing and proposed right-of-way required for a given project as well as all necessary easements, consents to grade, and temporary right-of-way where direct effects to archaeological deposits may occur. In other words, the archaeological APE constitutes the survey area. The survey area may include the entire APE of the proposed undertaking, or select areas with the APE identified by the MDOT/LAP archaeologist as having the greatest potential of containing archaeological deposits.

Professional standards and techniques are expected to be sufficiently rigorous to demonstrate the presence or absence of sites and/or buried archaeological sites within the APE. To the extent possible, the National Register of Historic Places (NRHP) eligibility of identified sites will be evaluated using survey data (see National Register Bulletin 36: <https://www.nps.gov/subjects/nationalregister/upload/NRB36-Complete.pdf>). If the eligibility of a site cannot be determined using survey data, the need to evaluate that site through additional Phase II testing must be justified in a logical and consistent manner. Please note that the priority of MDOT/LAP regarding archaeological sites is avoidance of impacts, rather than Phase II testing to determine eligibility.

3. METHODOLOGY

**A. Background Research**

Prior to conducting field survey, the Consultant must conduct thorough background research. The goal is to gather sufficient and relevant environmental and archaeological site data to develop survey expectations, describe the relevant environmental contexts of the archaeological APE and vicinity, and prepare pre-contact and historic period sensitivity models for the survey area. Many

of the recommended data sets and sources are available as on-line GIS data (<https://gis-michigan.opendata.arcgis.com/>; <https://datagateway.nrcs.usda.gov/>), or at the State Historic Preservation Office, the Library of Michigan, and the Archives of Michigan.

Topics and sources for background research include, but are not necessarily limited to:

- current and past land uses;
- Physiography and topographic/glacial landforms;
- streams/rivers/lakes/springs and wetlands;
- soil characteristics ([Web Soil Survey \(usda.gov\)](http://Web%20Soil%20Survey%20(usda.gov)); <https://soilseries.sc.egov.usda.gov/scname.aspx> and <https://www.nrcs.usda.gov/sites/default/files/2022-06/Soil%20Taxonomy.pdf>);
- pre-settlement land cover and General Land Office Survey maps (Albert and Comer 2008, *Atlas of Early Michigan's Forest, Grasslands, and Wetlands*, MSU Press; Trygg Historical Maps);
- lake level data;
- raw material sources;
- deep site potential (Monaghan and Lovis 2005, *Modeling Archaeological Site Burial in South Michigan: A Geoarchaeological Synthesis*, MSU Press);
- previously recorded sites and archaeological compliance reports;
- historic plat maps ([Map, Available Online, Michigan | Library of Congress \(loc.gov\)](#));
- current and past topographic maps ([topoView | USGS](#));
- current and historical aerial photographs (<https://rsgis.msu.edu/aerial/about>);
- Michigan Land Records and Sanborn insurance maps;
- local and county histories;
- MDOT As-Built drawings and right-of-way maps; and
- government/legal documents and published literature that provide insight into local and regional prehistory and history.

## **B. Phase Ia Field Methods**

Different field conditions call for different methodologies. The specific methods utilized during any Phase Ia archaeological site identification survey should ideally be based on a sound research design that considers environmental variables, documentation of known and suspected archaeological sites in the general vicinity of the archaeological APE, and a thorough understanding of the relevant pre-contact and post-contact contexts for a given survey area. If archaeological resources are present, the Phase Ia archaeological site identification survey also seeks to define the horizontal and vertical extent of those resources, as well as the cultural affiliation and integrity of the deposits to determine if the site(s) are eligible for listing in the NRHP.

For Phase Ia site identification surveys, all portions of a survey area, or select sensitive areas identified by the MDOT/LAP archaeologist, must be examined by systematic pedestrian survey, systematic shovel testing, or a combination of both, and/or additional techniques such as augering, depending upon the surface conditions and potential for deeply buried archaeological deposits.

Professional judgment in the selection of strategy, the array of transects, and the placement of subsurface tests must be justified in the report. Field conditions that limit or prevent investigation of an area such as inundation, disturbance, steep slopes, etc. must be delimited on a map of the survey area and explained in the report. Photographs of non-tested areas are essential for reviewers to understand the rationale behind “writing-off” certain areas. Investigators are encouraged to discuss survey strategies with the MDOT/LAP archaeologist prior to field work if difficult or unique conditions are anticipated.

## *Standard Methodologies*

### Pedestrian Survey

If ground surface visibility is 25% or greater and survey conditions are adequate for detecting archaeological sites (i.e., there is a reasonable expectation that artifacts would be readily exposed on the surface, such as in rain-washed, plowed fields), a pedestrian surface survey not to exceed 10-meter transect intervals may be conducted. No-till agricultural fields, frozen ground surfaces, and wooded areas do not constitute survey conditions adequate for detecting archaeological sites, regardless of the amount of surface visibility.

Once artifacts are identified on the ground surface, or if surveying on a known or reported site, transect interval spacing is to be reduced to 5-meters. On sites investigated by pedestrian surface survey, one or more shovel tests should be excavated to characterize the vertical extent and integrity of subsurface deposits. One shovel test is the minimum requirement; additional shovel tests should be excavated based on variable such as:

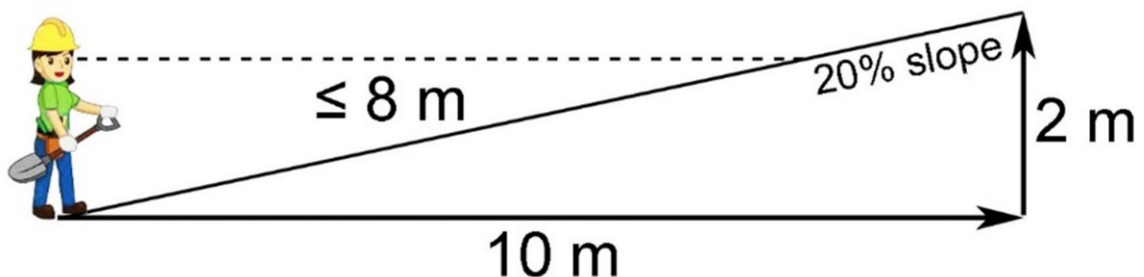
- Site size
- Known or suspected intrasite areas:
  - House footprint vs. yard in historic sites.
  - Artifact concentrations and possible features vs. other areas of a site.
  - Areas of suspected disturbance vs. undisturbed areas.
- Landform
  - Different topographic areas within a site should be tested.

### Slopes vs. Disturbance

Areas with slopes greater than 20% or 11° may be investigated by a walkover visual survey at 30-meter intervals. However, if areas with potential for archaeological resources are identified (such as caves, sinkholes, rock shelters, rock ledges, chert outcrops, etc.) they should be investigated using standard survey methodologies (shovel testing in rockshelters should be minimized to avoid damaging fragile deposits).

Keep in mind that road disturbances are not slope. Some disturbed settings like embankments, berms ditches, or road fill may be sloping, but they lack the potential to contain archaeological deposits because no intact soils are present. Slope greater than 20% (11 degrees), on the other hand, refers to a natural, intact surface that is unlikely to contain cultural materials because its steepness limits the potential for human activity or occupation.

A 20% slope means that in 10-meters the slope will rise or fall 2-meters. One rough estimate to assess slope is, from down slope, estimate the horizontal distance at eye level to the ground up slope. For slopes of 20% or more the distance will be about 8-meters or less for most people.



### Shovel Test Survey

If ground surface visibility is less than 25% and the slope is less than 20% or 11°, shovel testing is required. In addition, shovel tests are required in any settings where artifacts would not be expected to be readily exposed on the surface (e.g., no-till agricultural fields, freshly plowed or non-rain-washed fields, some alluvial settings, forest with thick humus layers, etc.). Shovel testing shall occur at intervals not to exceed 15-meters. If the survey area is in an area with a high potential for archaeological sites, a smaller interval should be considered. Shovel tests must be at least 40 cm in diameter and excavated into at least 10cm into subsoil or to culturally sterile horizons. Soil excavated from shovel tests must be screened through a ¼” wire mesh. All probes must be backfilled and returned to their original condition as much as possible.

Shovel testing should not be conducted if the ground is frozen, covered in more than two-inches of snow, or when near-surface features like ruins or foundations are expected. MDOT/LAP expects its consultants to meet the “reasonable and good faith effort” required in Section 106 to determine when winter survey conditions are appropriate for survey.

### Site Identification

If artifacts are discovered or when shovel testing on a known or reported site, the shovel test interval is to be reduced to 5-meters near the periphery of the site and continued until two sequential negative probes are excavated to determine the site boundaries. Additional radial probes are also recommended around any positive probe, even if it is not located in the site boundary, that (for example):

- Contains an unusually high number of artifacts.
- Contains pre-contact pottery or similar diagnostic materials.
- Exhibits evidence of a possible midden or other buried horizon.

Mapped historic resource locations should be treated as potential archaeological sites and efforts to identify and evaluate mapped resources should be made during the Phase Ia site identification survey. When warranted, mapped historic resource locations should be investigated at a reduced survey interval of 5-meters. Additional shovel tests may need to be excavated off the established grid to test areas such as foundation interiors, root cellars, depressions, and other surface features.

Previously recorded site locations identified during the records check as being within or adjacent the survey area must also be surveyed at a reduced 5-meter interval. A sufficient area around the recorded location within the survey area is to be investigated to determine whether additional associated artifacts or deposits are present.

### Site Delineation

In general, if a site is identified in an area of existing or proposed right-of-way, temporary right-of-way, consent to grade, or other easement, the best practice is to delineate the site at least 5-meters past the right-of-way, temporary right-of-way, consent to grade, or other easement limits when applicable and appropriate. This will provide more informed recommendations regarding eligibility, ineligibility, and avoidance measures.

To be potentially eligible, a site must have both information potential (based on the artifact assemblage, site type, and historic context) and integrity. Information potential is the primary requirement and should be evaluated first. For sites that have good information potential, the site’s integrity (including subsurface integrity) must be evaluated and documented (this is the reason that at least one shovel test be excavated in sites identified during pedestrian survey). To sufficiently document a site’s integrity, it may be necessary to place a transect of shovel tests, or

two perpendicular transects across a site. Shovel test intervals must be at least 5-meters within the boundary of a site but may be reduced even further at the discretion of the principal investigator based on site size, presence of midden, or other relevant variables.

### Buried Deposits

Augering is required for any Phase Ia archaeological site identification survey that contains well-drained alluvial soils, colluvial or aeolian deposits, or urban fill. The purpose is to determine the absence or presence of subsurface paleosols or other archaeological deposits that may have become buried by alluvial sedimentation, wind-blown sands, erosion, or historical fill. Auger cores are to be placed in systematic intervals not to exceed 15m. Paleosols or other potential cultural deposits collected from augers must be screened through ¼ inch mesh. The results of this testing should be used to justify the recommendation for or against Phase Ic investigations and supported with information including:

- Soil age and topographic setting
  - Alfisols typically developed on landforms dating from the Pleistocene or earlier.
    - Any archaeological deposits on these landforms would usually be expected to be on or near the surface rather than being buried.
  - Entisols are typically found on recently formed landforms and exhibit little to no pedogenic (soil horizon) development beyond the possible presence of an A-horizon.
    - Due to their recent age and development history, such landforms are unlikely to contain buried archaeological deposits.
  - Soil orders found on landforms that formed during the late Pleistocene or Holocene, such as Inceptisols, Spodosols, and Mollisols, may have the potential to contain buried archaeological deposits, depending on their topographic setting and the local depositional environment.
    - Soils on landforms such as alluvial terraces, floodplains, and alluvial fans have a greater potential to contain buried archaeological deposits than soils on uplands and slopes or in wetlands.
  - Areas of colluvial or aeolian deposition, such as the bases of slopes or in dune environments may contain buried archaeological deposits below the depth of a typical shovel test.
  - In urban settings, deep fill deposits may cover earlier historic or pre-contact cultural surfaces and deposits.
    - This should be evaluated on a case-by-case basis, keeping in mind the proposed depth of project disturbance, to determine whether Phase Ic stripping of fill may be required.
- Soil profile descriptions documented during the Phase Ia investigation (e.g. results of augering)
  - Note if soils are aggrading or eroding.
  - Finer grained sediments on floodplains such as silty, loamy, or clay loam soils reflect a low energy depositional environment and may have a higher potential for to contain buried archaeological deposits.
  - Coarse grained sediments containing sand and gravel reflect high energy depositional environments and reflect settings that are unlikely to contain archaeological deposits because deposition involved the scouring away of upper soil horizons.
  - Deeply gleyed soils or the presence of deep, strong redox features may indicate a long history of poor drainage or frequent flooding and suggests a setting not favorable for the presence of buried archaeological deposits.

Soil orders may be looked up for specific soil series on the USDA-NRCS website:  
<https://soilseries.sc.egov.usda.gov/scname.aspx>

Additional information about the ages and settings of soil orders may be found in the USDA-NRCS publication:  
<https://www.nrcs.usda.gov/sites/default/files/2022-06/Soil%20Taxonomy.pdf>

If deep testing is required by MDOT/LAP, the resulting report in its entirety will comprise the final Appendix of the Phase Ia archaeological site identification survey report. The pertinent results are to be fully integrated into the Survey Results and Site Description sections.

### Best Practices

The entire project right-of-way (proposed and existing), temporary right-of-way, consents to grade, easements, and/or sensitive areas as identified by the MDOT/LAP archaeologist must be included in the Phase Ia archaeological site identification survey. The investigation should be designed to maximize the testing of undisturbed portions of the project area, not to minimize the amount of work. In other words, it is more important to excavate shovel tests than to stay on grid. If a shovel test falls on some sort of obstacle or disturbance, like a tree or buried cement, then offset the shovel test by moving a step or two away from the obstacle or disturbance. **For MDOT/LAP projects, the best practice is to work from the outside edge of the survey area and proceed inward toward the road.** This will ensure that the area with the least potential to be disturbed is examined, and therefore that a good faith effort to locate cultural resources has been demonstrated. Some additional best practices include:

- The survey area width should be paced or measured from the centerline.
- If the survey area extends into a wooded area, then the survey transect should go into the wooded area.
- If the survey area extends to the top of a road cut, then it is necessary to examine the top of the road cut and test any undisturbed soils.
- If sidewalk replacement is included as part of a road project, then the shovel test transect should be placed on the outside edge of the existing sidewalk.
- A survey transect that is 30-meters long should have three probes excavated when possible (at 0 m, 15 m, and 30 m) rather than a single probe in the center.
- An undisturbed survey area that is 30-meters wide should have three transects completed (at 0 m, 15 m, and 30 m) rather than one or two transects down the center.
- An ideal one-acre (64m<sup>2</sup>) survey area constitutes twenty-five (25) shovel tests.
- Any areas that have been previously surveyed must be resurveyed in accordance with these methodologies as part of the current investigation.

Please note that:

- Agricultural activity (i.e., plowing/disking) does not constitute a severe level of disturbance.
- Residential properties (i.e., lawns) cannot be assumed to be disturbed. Suspected disturbance by grading/filling or landscaping must be verified by subsurface testing.
- Existing right-of-way cannot be assumed to be disturbed.
- Fill is not a disturbance; an attempt must be made to penetrate and test beneath fill.

The presence of utilities should not in itself result in whole transects being untested. The avoidance of buried utility corridors should be appropriate for the level of potential disturbance. Transects may be offset from the original grid to safely test undisturbed portions of the survey area in the following manner:

1-meter to 1.5-meters for a buried water line or cable.

2-meters to 3-meters for sewer lines or large gas pipelines.

|   |   |
|---|---|
|  | Red: Electric Power Lines, Cables, Conduit & Lighting Cables              |
|  | Yellow: Gas Oil, Steam, Petroleum or Gaseous Materials                    |
|  | Orange: Communication, Cable TV, Alarm or Signal Lines, Cables or Conduit |
|  | Blue: Potable Water   |
|  | Green: Sewers and Drain Lines   |

MDOT/LAP expects consultants to employ visual and shovel test survey techniques and, when warranted and specified by the MDOT/LAP archaeologist in the Scope of Work, deep testing using auger cores or trenching, or a combination of the two. The above guidelines should not prevent consultants from making common sense adjustments to survey intervals and shovel tests in the field due to site types, disturbances, drainage characteristics, steep slopes, etc. Predictive models, remote sensing, and other innovative survey techniques and methodologies shall be reviewed and approved by the MDOT/LAP archaeologist prior to implementation.

MDOT requires that the consultant employ sub-meter GPS technology in recording select survey data. GIS shape files of field data will be created as polygons using the Michigan GeoRef Coordinate System. The shape files must include a projection file. The shape files of each survey area and identified site(s) must be submitted with the final technical report.

All pre-contact artifacts found in shovel tests and, except in unusual situations, all pre-contact artifacts observed on the surface of a site will be collected. Should a high-density pre-contact site be encountered, and the consultant believes that complete collection of fire-cracked rock (FCR) will be unduly burdensome, the consultant may implement a grid strategy, count and weigh the FCR, and discard in the field.

For historic period artifacts, the MDOT/LAP archaeologist expects that the consultant will distinguish between incidental, non-diagnostic findspots; secondary or recent roadside scatters and dumps; and historic archaeological sites worthy of site designation in the field. Historic archaeological sites will consist of either a variety of functional artifact groups (e.g. architectural, kitchen, and personal) or more than one functional artifact type (e.g. brick, window glass, and nails). Only historic archaeological sites meeting these criteria are to be included in the report and artifact inventory. Nondiagnostic items such as brick, mortar, clinker, etc. may be discarded in the field provided that these are summarized in the report. At a minimum, count and weights must be collected on non-field collected artifacts. For historic period archaeological sites with dense deposits of artifacts, the MDOT/LAP archaeologist expects the consultant to use their judgement in collecting representative artifacts and describe in field notes what was observed, but not collected.

### **C. Laboratory Analysis and Curation**

The MDOT/LAP archaeologist expects the consultant to employ standard, professional techniques to process and analyze artifacts with the goal of documenting site type(s), function(s), and temporal range(s) of occupation. The level of detail included in the analysis will depend upon the type(s) of site(s) found. Curation requirements are as follows: 1) contact the SHPO and obtain the trinomial site number for each site identified and the current procedures and standards for



collections curation, including the purchase of archivally acceptable materials for storage and preservation; 2) prepare and deliver all artifacts and field documentation along with a hard copy of the final report and artifact inventory for curation to MDOT's archaeology lab. Schedule the drop-off date and time with the MDOT/LAP archaeologist.

#### **D. Report and Data File Submission Procedures**

The draft reconnaissance report is to be submitted electronically to the MDOT /LAP archaeologist for review and comment. Also include GIS shapefiles for the survey area(s) and all sites in the submission. The Archaeological Short Report is to be used when the Phase Ia archaeological site identification survey results in either no sites identified or single isolated findspots. Full archaeological reports detailing archaeological site results and recommendations must follow MDOT's Report Format in Section 4 below.

Once all comments and reporting deficiencies have been addressed, the MDOT/LAP archaeologist will formally approve the document via email and request that it be submitted to SHPO for formal review or for its records only. Upon MDOT's approval, send one hard copy of the final report to the MDOT Lead Archaeologist (Shaun Miller) or LAP Archaeologist (Patricia Jo Korzeniewski) at the below address.

Michigan Department of Transportation  
Environmental Services Section  
425 W. Ottawa St.  
PO Box 30050  
Lansing, MI 48933

The final reconnaissance report is to be submitted electronically to SHPO through its on-line Section 106 Consultation Portal (<https://app.smartsheet.com/b/form/666db3059c9d40828eafdbb66e61a2fc>). Fill out the required information in the Portal and upload the final report, completed Application for Section 106 Review Form, and GIS shapefiles of the survey area(s) and all sites, and check the box for "Send me a copy of my responses" then submit. Send a copy of the Portal responses and receipt from SHPO indicating that the submission was received to the MDOT/LAP archaeologist.

SHPO does not formally review MDOT archaeological reports, except in cases of "no adverse effect" or "adverse effect" determinations, or when the NEPA documentation requires an Environmental Assessment (EA) or Environmental Impact Statement (EIS). MDOT/LAP Phase Ia archaeological site identification surveys are primarily conducted as part of a NEPA Categorical Exclusion (CE) and will typically result in a determination of "no historic properties affected" and thus are provided to SHPO for their records only. To make this clear to SHPO on the application, check the box for "Submitted under a Programmatic Agreement" and use "MDOT/FHWA/SHPO PA 2022" as the PA Name/Date. For Project Name, use the MDOT Job Number followed by "Report Submission for Records Only; No Review Required". Fully complete the remaining required fields in the application.



4. FULL REPORT FORMAT WHEN SHORT REPORT IS INAPPLICABLE

**I. Title Page**

- A. Report title (indicate if the report is a draft) shall include type of investigation, location of work (city, township, county, state, as appropriate), and MDOT job number.
- B. Prepared for (MDOT and address) and Prepared by (Consultant and address).
- C. Author(s).
- D. Date of Report.

**II. Abstract**

- A. Not to exceed one-page.
- B. Identify specific type of project (e.g., road widening, bridge replacement, etc.) and pertinent project details.
- C. Provide concise and brief summary of survey results, including numbers of site(s) identified, site number and type/function, NRHP eligibility, and if additional work is/is not recommended. Include total acres surveyed.

**III. Table of Contents**

**TABLE OF CONTENTS**

Abstract ..... ii

Chapter 1 Introduction ..... 1

    1.1 Project Description ..... 1

    1.2 Area of Potential Effects and Survey Area Location ..... #

Chapter 2 Background Research ..... #

    2.1 Environmental Setting ..... #

    2.2 Previously Located Prehistoric Sites and Archaeological Sensitivity ..... #

    2.3 Previously Located Historic Sites and Archaeological Sensitivity ..... #

Chapter 3 Methodology and Results of Investigations ..... #

    3.1 Field and Lab Methods ..... #

    3.2 Survey Results ..... #

    3.3 Site Descriptions ..... #

        3.3.1 Site Number ..... #

        3.3.2 Site Number ..... #

Chapter 4 Conclusions ..... #

References Cited ..... #

Appendix A. Figures

    Figure 1. Project Area Location

    Figure 2. Survey Area

    Figure 3. etc.

Appendix B. Tables

    Table 1. List of Artifacts from Site "A"

    Table 2. List of Artifacts from Site "B"

    Table 3. etc.

Appendix C. Artifact Inventory

Appendix D. Deep Testing Report

#### IV. References Cited

- A. MDOT/LAP expects parenthetical references in the body of the text.
- B. The consultant should use the *American Antiquity* Style Guide in assembling the list of references that concludes the body of the report.

#### V. Appendices

- A. All illustrations called out in the text, including photographs, are considered figures and comprise Appendix A. Figures should be consecutively numbered in the order they are called out in the body of the text and be accompanied by a brief caption. Figures must be listed in the Table of Contents under Appendix A.
- B. All tables called out in the text, if employed in the report, comprise Appendix B. Tables should be consecutively numbered in the order they are called out in the body of the text and be accompanied by a brief caption. Tables must be listed in the Table of Contents under Appendix B.
- C. An all-inclusive artifact inventory organized by site will comprise Appendix C.
- D. If Phase Ic Subsurface Investigation (deep testing) is required by MDOT/LAP, the report in its entirety will comprise the final Appendix of the report. The pertinent results will be fully integrated into the Survey Results and Site Description sections.
- E. Completed Michigan Archaeological Site Forms (<https://www.miplace.org/historic-preservation/archaeology/>) for all new and resurveyed sites.

### 5. REPORT CONTENT

#### I. Introduction

The introduction shall describe the proposed project, define the archaeological Area of Potential Effects (APE), and describe the physical location, size (acres and hectares), and setting of the survey area(s). For MDOT projects with simple APEs, Chapter 1 need not exceed three paragraphs. Projects with multiple alternatives/survey areas will require greater effort. The consultant will prepare two figures to accompany this chapter: 1) a USGS topographic map(s) depicting the archaeological APE (1:24,000 scale or a fraction thereof) and 2) a more detailed aerial map(s) of the area surveyed to accompany the text.

#### II. Background Research

The second chapter shall discuss the results of background research pertaining to the archaeological APE and vicinity and present 1) an analysis and description of the environmental setting through time; and sensitivity models for 2) pre-contact archaeological sites and 3) historic archaeological sites. Topics and sources for background research have been suggested above in Section 3A. The Consultant shall not include boilerplate-style or generic overviews of the environment or prehistory and history. The focus of the background research is the archaeological APE and vicinity, and the goal is to produce a meaningful and comprehensive analysis of the environmental and cultural settings that culminate in an integrated cultural and environmental sensitivity model specific to and as they apply to the survey area through time.

This does not imply that one can ignore regional environmental and archaeological data. MDOT/LAP assumes that the principal investigator: 1) has a well-grounded knowledge of Michigan's environment, prehistory, and history; 2) that they will interpret and analyze the background data and expand or contract the spatial or temporal extent of

background research according to the adequacy of the data; and 3) produce the sensitivity models, including statements of what is/is not likely to be found in the survey area(s).

MDOT/LAP understands that some areas are poorly known or have less than optimal datasets that can be applied to a project. In such cases, the sensitivity models may necessarily need to be more general. MDOT /LAP also expects that additional “background” research will take place after the field work is completed to better evaluate and understand each site found or build a strong case for why no sites were found.

The consultant will prepare illustrations to accompany the text, including, but not necessarily limited to a USGS topographic map of the archaeological APE that includes previously recorded sites and potential sites (e.g., potential historic farmstead sites based on plat map analysis) that are relevant to explaining the sensitivity models. The following project examples are provided to help convey the content and level of detail for the three background sections.

1) Environmental Setting: You have been contracted to survey a 40-acre wetland mitigation site in the Lake Erie drainage basin in Monroe County. From recent aerial photos, you establish that extant wooded wetlands occupy about 10 acres and a small low order stream crosses along the north edge of the APE. The rest of the field is fallow. Pre-settlement vegetation maps show this APE as wet prairie. Topographic maps at five-foot intervals show that most of the APE lies below 575 ft asl; the 575-ft contour line does cross the southeast corner of the APE. In an interview with the landowner, you find out that he regularly dredges the creek and installed field tiles to drain most of the field. Historic plat maps and the 1918 USGS 15’ topographic map depict the creek in different locations. This section, therefore, should paint a detailed picture of the environmental setting of the APE today, describe how the setting has changed through time, and identify the environmental factors and how they have affected the potential for archaeological sites and the physical integrity of the sites.

2) Previously Recorded Pre-contact Sites and Archaeological Sensitivity and 3) Previously Recorded Historic Period Sites and Archaeological Sensitivity: You have been contracted to conduct a survey for a bridge replacement project on US-2 over the Brevoort River in the Upper Peninsula. In doing the site file research, you establish that 43 previously recorded sites are located within a six-mile radius. However, 29 of the sites are found in just two Sections (22 and 23 of T41N/R05W). The survey reports available for this area demonstrate that the USDA Forest Service has conducted numerous surveys on Pointe Aux Chenes. Looking at the topographic setting on the state site file topo map, you see that Sections 22 and 23 comprise the bulk of Pointe Aux Chenes peninsula, a topographically unique area with a sheltered bay and flanking a series of nested wetlands and dune ridges, that would have attracted both historic and pre-contact occupations. You the review MDOT Dune Study by Lovis et al. (2012) and read that this is an extremely dynamic environmental setting for thousands of years with embayments, river shifts, dune formation, etc. You also review the historic period site data and see that they include stagecoach trails, logging camps, pit features, and early recreational cottages.

For the pre-contact sensitivity, you can discuss sites by type, age, and function and determine if there are settings adjacent to the Brevoort River analogous to those occupied in the six-mile radius. You can also look to see if the elevations in the survey area correspond with time periods when all or part of the archaeological APE would have been inundated by high lake levels or elevations that correspond to habitable beach ridges overlooking water. You would also look at comparisons along the Brevoort River and contrast them with the Pointe Aux Chenes sites and previously recorded sites along the Brevoort River. Survey reports would also provide comparative data.

You synthesize the data and describe what you expect to find (or not find), in what settings, and why.

For the historic section, you would do additional research on Upper Peninsula logging and logging in the Brevoort Lake/River drainage. More generally, expectations for early period versus CCC era logging camps could be assessed. Survey reports would also provide comparative data. Historical research into the use of US-2 as a Stagecoach trail might indicate that the original US-2 route is located well inland and that historic sites might be infrequent or less common in the survey area of the current river crossing area. You could confirm this by looking at historic transportation maps or and 15-minute topographic maps dating before the 1940s construction of this part of US-2. You synthesize the data and describe what you expect to find (or not find), in what settings, and why.

### **III. Methodology and Results of Investigations**

Field and Lab Methods: this section will describe the application of the methods employed in the field and any changes or modifications made necessary by field conditions and circumstances encountered in the field. Lab methods should be no more than two short paragraphs stating briefly how the artifacts were analyzed. Also, note that artifacts and field documentation were prepared according to curation standards of the archaeology lab in the Michigan History Center. Excessive detail and boilerplate regarding cleaning, measuring, excessive details of typology are discouraged.

Survey Results: this section will describe the features and characteristics observed in the field and the method(s) of survey employed. The way in which the archaeological APE is broken up into logical areas for description in the report is at the discretion of the principal investigator. An illustration(s) depicting survey coverage types and sites found within the survey area shall be prepared to accompany the text. Total acres surveyed must be included. The results of deep testing, if required by MDOT/LAP, will be summarized in this section, as well.

Site Descriptions: each site found will be described individually. Site descriptions will include but not necessarily be limited to: Township/Range/Section with  $\frac{1}{4}$ ,  $\frac{1}{4}$ ,  $\frac{1}{4}$  section and UTM locations; vertical and horizontal extent of site; representative photographs of the site in relation to natural and man-made features; topographic setting; vegetation; general soil characteristics, elevation; proximity to water, and the nature and extent of disturbances. The consultant is responsible for obtaining state site numbers from SHPO.

The methods used to identify the site shall be described (including totals of negative and positive shovel tests) and accompanied by a detailed site map(s) documenting the site boundary in relation to natural features and the overall archaeological APE. If surface survey was employed, GPS piece-plot data and/or surface scatter polygons should be included on the map. If shovel testing was undertaken, positive shovel test locations should be based on GPS coordinates; negative shovel tests may be sketched in at the appropriate intervals on the site map. The results of deep testing, if required by MDOT/LAP, shall be integrated into these site-specific discussions and map(s). Representative positive shovel tests may be described to provide information regarding the depth of artifacts and soil associations observed but illustrations/photographs of all shovel tests are not required.

Each site shall include descriptions of the numbers and types of artifacts recovered. Diagnostic artifacts should be described, and photographs provided. For complex sites, representative examples of diagnostic artifacts may be chosen for illustration by the principal investigator. To the extent possible, each site should be described in terms of site type(s), site

function(s), and the temporal range(s) of occupations and placed within its context of local and regional prehistory/history.

The National Register eligibility of each site will also be evaluated in this section in terms of its potential to contribute to local and regional, archaeological research issues. These issues, and an assessment of the integrity of the site, must be clearly articulated. The rationale for a site's ineligibility or the need for additional work to determine eligibility must be explicitly stated and supported by the background research, survey data, and integrity.

#### **IV. Conclusions**

This chapter should be comprised of brief concluding remarks about eligibility and avoidance. For those sites that are not eligible, the consultant shall specify why the site(s) is (are) not eligible. For sites for which eligibility cannot be determined, the consultant shall specify why the sites may be eligible. The consultant then shall discuss the integrity and significance of the site in relation to the proposed construction and how impacts to the site(s) might be avoided or if the portion of the site within the survey area does not have the integrity and significance to be eligible for listing on the NRHP.