

ARCHEOLOGICAL FIELD MANUAL
FOR
THE NEW PHILADELPHIA PROJECT
PIKE COUNTY, ILLINOIS

12/03

FIELD PROCEDURE GUIDE

EXCAVATION UNITS

Digging will be done in 5 ft by 5 ft units, although partial units may also be excavated.

Each unit will have an identification number in addition to the coordinates of the site grid. A unit's designation is its northeast corner coordinates, written N_____E_____.

Corners of the unit will be marked with spikes holding jar lids with grid coordinates written on them. Try to keep the string around the edge in place as long as possible.

GENERAL EXCAVATION FOR STRATIFIED SITES

Be sure you have the correct side of the tape measure: tenths of feet.

Each stratum and feature will be dug separately. Strata and features are distinguished by differences in color, texture, compactness, inclusions of rock, gravel, cinders, charcoal, coal, etc. Check with supervisor when you feel something should be designated as a feature. As for the floor of the unit, artifacts and rocks embedded in the surface of the stratum below the one just dug should be left in place -- they belong to the level below. Similarly, be sure to leave all but the smallest artifacts in place until they are completely exposed. By doing so, you will increase the likelihood that you and your supervisor will be able to recognize instances in which artifacts were deposited in a particular pattern or context.

The first layer below the sod is A, the next B, and so on. If a stratum is more than 0.5 ft thick, it will be subdivided into arbitrary levels 0.5 ft thick (or whatever is there). Substrata are designated by numbers: B1, B2, for example. Fill and plowzone may be exempted from this subdivision. Check with the supervisor.

Features are numbered. Cultural strata within a feature are named by lower case letters: Feature 345 stratum b. If arbitrary levels are used, they will get numbers: c1, c2. The feature number is the next one available in the Feature Log. Fill in the log immediately.

Sometimes a soil that was first called a feature is redesignated as a stratum, or vice versa. See below on how to fill out the forms.

Maintain a level floor as you dig so that if you need to dig

arbitrary levels you can do so easily. This approach also makes it easier to see features and soil changes. Don't cut down a full 0.5 ft at a time -- the stratum may not be that deep. Slices of 0.1 to 0.2 ft will allow you to look for changes. Working one quadrant at a time may help you pinpoint artifact concentrations.

Keep profiles straight and clean as you dig, and watch for spots that are dry and likely to collapse. Pedestal large rocks that threaten to fall and leave a hole. Make a note on the level form about artifacts in profiles so that if any fall, we can get them into the right bags in the lab. When cleaning walls, do only the current stratum -- the wall surface above will produce artifacts from other strata.

When excavation of a stratum is complete, the floors and walls should be toweled so that any features and new strata can be seen, drawn, and photographed. The bottom of a substratum should also be clean, but less recording is needed in most cases.

Small features may be dug a bit at a time as you work down the soil around them. Make a note that this was done on the feature form. Intermediate drawings and photos should be made to document changes.

Take care not to back into profiles or gouge them with a shovel handle or bucket. Also, don't stand or sit on the edges of units. They crumble and you could get hurt.

Try to time your work so that you don't have unscreened dirt at the end of a day. If you should have some, put it in a bucket inside the unit, under the plastic. The Supervisor will give warning 10 minutes before cleanup time.

RECORDING

Level and Feature Forms

Each provenience unit (stratum, substratum, feature, and any strata within a feature) gets its own form. Start filling in the appropriate form **before** you dig, including opening elevations, instrument heights, and soil descriptions.

Level/Stratum Description: should cover the general size and shape of the stratum or feature, such as whether the layer was fairly uniform in thickness, sloping downward in a particular direction, location of a feature within the unit, stratum found only in part of a unit, stratum matrix is hard to distinguish from a feature...

Color: Munsell number and color name. For mottled soil, give more than one reading and an estimate of the proportion (slight, moderate, 50%). Readings should be taken on dampened soil dug from the floor.

Texture: Use a damp sample. Include coarseness, organic content, and degree of compactness.

Inclusions: Shale, gravel, pebbles, brick fragments, mortar, small pockets of sand, cinders, coal. Note size range of the pieces, any concentrations, changes within stratum and proportion (i.e. few, moderate, many, more rock than dirt). A representative sample of all of these (except unmodified stone) should be kept.

Relationship: what's above, what's below, what cuts through what, similar soils in adjacent units.

Features Associate (stratum form only): all features that are visible when digging the stratum should be listed and their relationship described. This includes ones appearing at the top of the stratum and those first seen within it.

Artifacts: Don't bother with counts. List general categories, unusual and small items. Note samples of materials like coal or brick. Describe any concentrations or changing quantities of artifacts within a level or feature. If nothing is collected, say so.

Interpretation: feature type (post hole, wall, etc.) hypotheses about feature type (possible rodent burrow), possible relationship between features (such as two post holes of similar size in same level). If you feel that a feature might have started higher but was too vague there, describe the situation.

** Cross-reference all forms if feature or stratum designations are changed, but do not erase numbers. For example, if soil was dug first as F436 and it was renamed Stratum D, simply record that F436 and Stratum D are equivalent on all the relevant forms.*

** Feel free to write on the back of the form if needed. Include sketches to show details or explain relationships. If you use additional pages, put the project, unit number and coordinates, stratum, feature, date, and your initials in the upper right corner.*

Photos

A black and white photo and a color slide will be made at the bottom of any provenience where features or uneven layers are showing. Check with supervisor if you feel there is no need for photos.

Intermediate shots may be made of features.

Profiles will be photographed after the unit is completed.

Use apertures between 5.6/8 and 16 to ensure adequate depth of field.

Clean unit for photo. (No foot prints)

Photos are taken before doing Munsell, elevations, and drawings.

Place arrow and scale in the unit where they will not obscure features. The signboard may be placed outside the unit, at the nearest edge. For profiles, the board should be propped on the surface, and the long scale should be placed vertically in a corner.

The board should give the names of all strata and features that are showing

i.e. "Top of Stratum B"

Roll and frame number are recorded on Stratum and Feature Forms. Photos are entered in the Photo Log when they are taken. Supervisor will change the film.

For comparison purposes, stratum photos should be taken from the south whenever lighting permits. If this doesn't show important details clearly, do an additional view from another side. More than one angle may be needed for features as well.

Photograph the profile as nearly level and square-on as possible. If it is impossible to photograph the entire profile with one exposure, take more than one shot and overlap them. Photographs of profiles show much more detail if taken on a cloudy day or in artificially contrived indirect lighting (e.g., shading with plastic sheeting). To enhance color contrast, you can dampen the profile with a hand sprayer filled with water. If you elect to do this, remember that this is an additional photo; you should take at least one color and one black-and-white photograph of a stratigraphic profile that has not been dampened or modified in any other way. If you take additional photographs, record on the photo log how the face was modified for each photo.

Roll numbers for Black and white photos use odd numbers (193,195) and color slides use even numbers (194,196).

Plans

Use graph paper with stamp in the corner. Fill out the stamp. Write "top" in the space for Plan_____.

Use a pencil and ruler.

North is always at the top of the plan.

Usually 1 inch on paper equals 1 foot. Detailed drawings to show features may be drawn at 2 inches to a foot.

A plan is not drawn at the bottom of a stratum or substratum where nothing new is visible. For an uneven surface with no other distinguishing characteristics, a plan with numerous elevations may suffice. Ask supervisor.

Draw and Label:

- rocks. Smaller ones can be roughed in. For a wall, once drawn in detail for an upper level, it can be shown in outline on later drawings. However, you'll need to measure the lower edge of the wall again as more is exposed. R = rock, B = brick
- concentrations or patches of gravel, mortar, cinders, charcoal, etc. (dashed line)
- gradual changes can be shown with a dashed line and explanation
- artifacts *in situ*
- burrows and roots
- features
- all strata that are visible
- unexcavated areas

Include elevations for all strata, features, larger stones. Write the Instrument Height (IH) under the stamp.

Label corners with grid coordinates

Profiles

When the unit is completed, all four walls are drawn. Supervisor may exempt those that are redundant or so rocky that they are not informative.

Measurements are made from a level string above the surface. Be sure to draw and label the surface.

Label each stratum and feature.

Label corners with grid coordinates.

Write the side (N, E, W, S) in the space for Profile_____.

Elevations

Readings are done by transit. Copy the current IH from the Transit Book before you do readings. If it hasn't been recorded, do it yourself.

Be careful not to bump the tripod. Never move the transit without permission. If the transit is bumped or moved, it must be reset and the new IH recorded.

For relatively even stratum, record elevations for the center and all four corners. Take extra readings for the plan drawing when you need to show an irregular surface or feature.

For a large feature or a stratum that doesn't cover the entire unit, record at least three elevations. One or two are sufficient for small features.

Check the numbers: subtract IH from the readings. The resulting numbers are depths below datum (BD). The depths for the top elevations should be higher than those for the bottom ones.

If the Instrument Station is changed to cover a different area of the site, put it in parentheses after the IH (A, B, etc).

HANDLING DEPOSITS OF HUMAN REMAINS

If participants in the field school encounter a burial, grave, substantial articulated remains, or an in situ concentration of human bone during excavations, operations in the immediate vicinity of those remains will temporarily cease. We will promptly notify the Illinois State Archaeologist's office in such instances and ascertain an appropriate way to proceed.

EQUIPMENT AND SUPPLIES

Keep tools handy, but not where you'll step or sit on them. Shovels should be laid upside down so they don't flip if stepped on.

Return borrowed tools immediately.

Keep shovels and trowels clean and sharp.

Report broken or damaged equipment so that it can be repaired or replaced.

Cover the transit, paper work, and cameras immediately if it starts to rain. The supervisor will decide whether fieldwork will be halted for the day.

Equipment is kept in an appropriate indoor facility overnight. Screens and buckets will remain on site.

If you notice any supplies are running low or you take the last one, report it. For example, stamped paper bags, Sharpies, forms, etc.

Pick up all trash.

SCREENING AND ARTIFACTS

The sod is not screened.

Be aware of environmental conditions while screening, such as wind.

Do not overload the screen.

Stop occasionally while shaking the screen to see if small items such as straight pins have "floated" to the top. Once the dirt is out of the screen, look over the screen's contents systematically, moving rocks and small clods as you go.

Keep all objects made or altered by humans. This includes both prehistoric and historic artifacts. The only exceptions are brick, mortar, plaster, cinders, slag, charcoal, and coal. Save only a small representative sample of these.

As you find them, put the artifacts in plastic bags. Punch a few pinholes in the bags to let moisture out. Small and fragile items should be stored in separate containers such as small bags or film canisters. Put a "do not wash" warning on fragile materials such as leather and cloth.

When in doubt, bag it.

Each stratum, substratum, etc., is assigned a bag number from the Bag Inventory. Take the next number from the list, fill out the stamp on a bag and record the number on the Level or Feature Form.

If you need more than one bag for a Bag Number, write "1 of 2," etc. by the Bag Number on the bags, and record the total number of bags on the Level Form and Bag Inventory.

If there are no artifacts for a provenience, record this on the Bag Inventory, but do not take a number. Also, write "none" on the Level or Feature Form in the space for Bag Number.

When the provenience is completed, put the bag into the white bag bucket. Completed bags will be turned in at the end of the day to the lab. Bags for unfinished levels will be kept with the field equipment.

SAFETY

Watch where you sit and step.

Report even minor injuries, just in case it gets worse.

Sturdy shoes are necessary. No bare feet.

Hats, sunglasses, and sunscreen are recommended.

Tell supervisor in advance about allergies or other problems, special medications, etc.

PUBLIC ARCHEOLOGY

Be polite. Talking to visitors is part of your job.

Answer questions as best as you can. Refer people to a more experienced person at the site, if necessary.

If a visitor asks to see artifacts (this is extremely rare), show a few examples, but discourage handling. Artifacts are dirty, possibly sharp, fragile, and easily lost if dropped. Consider yourself a steward: Take care of the artifacts, but remember that they belong to everyone.

** Relate the archaeology to the area being excavated. Try to place the artifacts within larger context.

** Stress project goals.

** Archaeology is more than just digging up stuff. Remind visitors of the work done in the lab, well after we return inside. Archaeology has value for more than the items we find--it is also useful in generating information from which to interpret the past.

** The artifacts we find are more than just broken junk. They are items left by human beings. When viewed as such they can provide valuable information about everyday life for those who once lived here in town.

** Remember that we are not Treasure Hunters. Be aware that "relic hunters", "bottle hunters", etc., may approach you and ask questions. Don't snub them, but try not to give information that helps or encourages them (For example don't tell them where the bottle dump is or where you found a gold coin). Let people know that we rarely, IF EVER, find these items and that they are not really what we are looking for.

** Many visitors are curious if we are affiliated with some university. Let them know that the National Science Foundation is sponsoring this scientific research and the University of Maryland, Illinois State Museum, and University of Illinois are all key institutions in this project.

** Be aware that people are watching and listening to you. While at work, you are a member of this cooperative project sponsored by the National Science Foundation. Watch your language and actions.

** Our goal in public interpretation should be to provide the visitor with an example of how archaeology, as a reflective discipline, lends to our understanding of both the past and present. This, in turn, contributes to our stated goal of preserving historical sites.

PROCEDURES FOR SAMPLING OF ARCHEOLOGICAL SOIL

1. Prepare for taking samples by assembling all supplies needed.
 - a. Trowels
 - b. four plastic bags for each level or feature to be sampled (for most cases unpunched 6 x 6 plastic bags will suffice)
 - c. sharpie
 - d. paper towels
 - e. distilled water in spray bottle
 - f. isopropyl alcohol
2. Get bag numbers located in the soil samples notebook for each stratum or feature.
3. Make sure the proper information is written in sharpie on the plastic and paper bags.
 - a. Bag #
 - b. Description of site or site #
 - c. Provenience coordinates
 - d. Unit #
 - e. Stratum #
 - f. Feature # (if it calls for one)
 - g. Level of feature (if it calls for one)
 - h. Date
 - i. Initials of excavators
 - j. Write whether sample is pollen, phytolith, chemical or parasite
4. Clean trowels with distilled water and paper towels before and after each sample is taken.
5. Stratigraphic samples should be sampled so that the shape of the area from which the sample is removed is rectangular, being 2 cm (1 inch) in height. Extend this sample as far into the side wall as necessary to procure an adequate volume of soil.
6. Fill bags with soil.
7. It is **important** to take the samples of a layer within ten minutes from exposing the soil surface less the chance of contamination.
8. It may be requested that more soil be taken for a control of for other special reasons. This will be up to the field supervisor.
9. Parasite samples may also need a capful of isopropyl alcohol to discourage the occurrence of mildew and decay.
10. Each filled sample bag should be placed into its proper bag and placed into the artifact bucket for eventual lab processing.

WET ARTIFACT CONSERVATION

We occasionally uncover the archaeological remains of past privies in excavations. The anaerobic environment of privy remains can preserve both organic and inorganic materials, such as seeds, pits, bone, wood, leather and textiles. Special procedures for the proper field curation of these artifacts are needed. This section will deal with curation guidelines that can be applied in the field or laboratory with little knowledge of curation and with little expense.

Wet site archeology has been a hot topic for many years due to the amount, type, and preservation of artifacts. Artifacts such as bone, leather, textiles, seeds, and others have a better chance of survival in an anaerobic environment rather than other environments. Even though the preservation is welcome by many archaeologists, problems arise when proper conservation measures are not taken and materials are lost. As in most archeological excavations, monies are short and conservation is often foregone.

The following guidelines will allow the archeologist time to appropriate funds without giving up any preservation.

Careful excavation should always be on the mind of the archeologist whether the soils are dry or wet. However, while excavating a wet site, particular attention should be given to the proper excavation techniques and recording of stratigraphy. When the matrix in the remains of a privy is very soft a lot of damage to artifacts can easily occur. Careful excavation is a must when excavating a wet site.

Artifacts that survive in this type of environment come in two classes: organic and inorganic. Organic artifacts are most important because they survive in so few environments. The artifacts include seeds, pits, beans, bone, leather, and some textiles. Inorganic artifacts include metal and textiles. While both organic and inorganic materials are fragile and need curation measures for survival, organic materials require special attention so additional information is not lost.

Wood artifacts are rare and fragile and special measures are necessary to properly curate these artifacts. Small artifacts, such as matches, handles, and poles, do not need as much curation as big artifacts, such as bakers sieves, buckets, and yokes. Small artifacts (in most cases) should be cleaned carefully on the site, placed in a bag, sprayed with a fungicide, and the bag should be sealed. Big artifacts need to be supported well before lifting the artifact out of the ground. When excavating these artifacts, make sure as much of the matrix is left on and around the artifacts as possible. This ensures the artifact has enough support to safely make the transportation to the laboratory. When

needed, a board covered with a plastic bag can be used as support for the object. Make sure the moisture content will not be sacrificed; before sealing the bag spray the artifact and matrix with water and when needed also spray with a fungicide.

Seeds, pits, and beans, such as shells, cherry pits, walnut, brazil, and hazel nut shells preserve well in this type of environment. They do not, however, require the amount of curation as do wood artifacts. In most cases of digging a privy, a water screening process is used due to the wet, clay-like soils. In this type of condition, seeds can be captured in the screen. Any seeds that are too small for the screen to catch will show up in the flotation sample. It is recommended that an extra flotation sample be taken to ensure enough soil is collected. When collecting the macro floral seeds, put them into a plastic bag without holes. The rest of the procedures will be done in the laboratory.

Bones are usually well preserved and little to no special procedures need to be followed. Many times in a privy situation bones are articulated. When bones are found, check to see if they are articulated before removing them from the surrounding matrix.

If they are, clean around bones leaving them *in situ*. It is recommended that a faunal analyst see these bones before they are excavated from the matrix, or if an analyst is not present, a series of photographs showing the bones *in situ* will suffice. After this step, the bones can be exhumed from the soil and placed in a separate bag, marking it accordingly. When the bones are not articulated, bag them and put them in the "wet bag" for the laboratory.

Bone implements such as bone handled utensils and pocketknives need additional care. These should be cleaned of any excess soil and placed in a clean, unpunched bag. Make sure that the artifact is wet and sprayed with a fungicide before sealing the bag.

Most metals are found in poor condition, even in an anaerobic environment such as a privy. When such an artifact is found carefully excavate paying close attention to support factors. If the artifact needs support, it is best to leave the soil around the artifact and let the laboratory take the soil off the object.

Put the metal object into a bag, making sure the moisture content is maintained.

Leather comes in two conditions: cohesive and noncohesive. Cohesive artifacts can be sponged clean and placed in a bag and sealed with moisture. Noncohesive artifacts need a little more care. The noncohesive leather should be carefully excavated from the matrix. Depending upon how big an artifact is, support may be needed. Place the artifact on the support, wet and spray a fungicide and place in a separate bag and seal.

Textiles are very fragile when they come from an environment such as a privy. When a textile is found, leave it the way it is as much as possible, carefully excavating around the object and using support when needed. Do not spread out the textile. Bag the textile, making sure the moisture content is maintained and a fungicide is used. Use proper marks on the bag to show the correct contents. Most of the curation process will be done in the laboratory.

The above-mentioned artifact types; wood, bone, leather, seeds, etc., only cover some of the artifact types found on archeological wet sites. One other type of artifact that is frequently found is ceramics. Even though there are conservation guidelines to conserve ceramics, most ceramics found in archeological sites remain in very good condition, whether they are in dry or wet sites. There may be times when conservation measures need to be done to ceramics, but they should be dealt with on a case-by-case basis.

CONSERVATION PROCEDURES AT A GLANCE

1. Make sure you have all materials needed.
 - a. unpunched, clean plastic bags
 - b. cardboard or plywood for support
 - c. sharpie
 - d. water, either in a spray tank or spray bottle
 - e. a fungicide (lysol)
 - f. wooden tools, such a popsicle sticks, for excavation
 - g. wet site bag inventory form
2. Get a separate bag number for the wet bag.
3. Carefully excavate the matrix.
4. Artifacts ?
 - a. consult the wet site procedure section of this manual
 - b. assess the impact and how the object will be excavated
 - c. support, when needed, using the surrounding matrix, cardboard, and/or plywood.
 - d. leave the object in the same shape as excavated
 - e. keep the moisture content the same (keep wet)
 - f. use a fungicide to deter mold and mildew
 - g. mark the contents on each bag
 - h. make sure the bag is sealed so not to lose the moisture
5. When taking soil samples, consult the field procedures in the field manual.
6. Record all data on both bags and on the level/feature forms.

7. At the end of the day, both the wet artifact bags and the wet bag inventory form should be taken into the laboratory so the materials can be stored and conserved properly.

MAIN POINTS

1. Use proper excavation techniques carefully.
2. Keep moisture content at the same level.
3. Keep artifact the same shape as in the field.
4. Clearly label bag(s) to be processed quickly.
5. Spray a fungicide (lysol) to keep down mold and mildew.

FIELD BAG PROCEDURES

Assigning Bag Number

Bag numbers are assigned in the field to bags containing artifacts, soil samples, parasite samples, phytolith samples, and pollen samples. The different sample and artifact bags should be separated in the field and the appropriate inventory forms completed (see enclosed forms). The numbering sequence for each package begins with number 1. The inventory forms for the different field samples and artifacts will therefore start with 1.

Each provenience receives a bag number. When a provenience generates more than one bag of artifacts, a single bag number is still assigned but the bags are also given sequential numbers (bag 1 of 5). A supervisory archeologist assigns bag numbers when a new provenience is begun. After completing a provenience, the bags should be placed in boxes for easy transfer to the laboratory.

Field bags must be inventoried and turned into the laboratory on a daily basis unless a provenience was not completed. After completion, the bags may be turned in.

Recovering Artifacts

When collecting artifacts, the field crew should make an effort to separate the items by material of manufacture. The separated materials are to be placed in plastic bags and then put into the paper field bag. Glass, plastics, rubber, and ceramics may be bagged together, as may bone and shell. Metal should be kept separate. Small or fragile items must be placed in plastic vials or individual plastic bags. If time does not allow the separation of material, efforts should be made to at least protect the small and fragile objects.

Filling Out The Field Bag

All lines on the paper field bag (see enclosed form) must be filled out. Check with the assistant project director if there are any questions. The following information explains the terms on the field bag.

Bag Number: The number assigned to the provenience. If more than one bag per provenience is used, the information "Bag ___ of ___" should be placed in the upper right corner near the bag number.

Site: The site number and designate the area within a package. Building

and lot numbers are examples.

Provenience: The unit being excavated. The unit number plus the grid coordinates should be recorded. A feature number would also be recorded here.

Stratum: The level being excavated.

Date: The day a level is excavated. If more than one day, enter the day the excavation began and the day it was completed.

Initials: The crew working on the unit including the excavator, screener, and any helpers. Include initials for first, middle and last names.

Contents: This term refers to the artifacts in the field bag or the sample type (pollen, parasite). General terms for artifacts (bottle glass, ceramics) can be used, but small or fragile items should be recorded.