Anne Arundel County Archaeology Field Manual

Updated March 2022

Introduction to Field Procedures

This brief handbook is not intended as a "do-it-yourself guide" to archaeology. It is meant to serve as a handy reference for you to use during a field session. The focus here is to list and describe the various procedures for archaeological excavations as well as discuss the recording methods and forms used to document the work that you will be doing. Much of the information included in this guide is from the *Standards and Guidelines for Archaeological Investigations in Maryland* (Shaffer and Cole 1994).

It is important to remember that archaeology is a destructive process, so we must be observant when digging and record results accurately, completely, and clearly. The procedures outlined here are not all-inclusive nor are they totally inflexible. Always check with the supervising archaeologist if in doubt about what to do at any time.

Site Safety

Working at an archaeological site can be a very enjoyable experience. However, there are issues of health and safety that need to be observed. Here are some basic rules to follow:

1. Wear appropriate clothing for site work. This will depend on where you are, what you are doing, and the weather. Close-toed shoes are required. If you are in the woods, consider wearing long sleeves and trousers. Bring plenty of water and a lunch if you are coming for a full day. We also recommend bringing sunscreen and bug spray. If you need to sit down periodically, you may wish to bring a folding chair.

2. Before you start work, look around and check whether anyone is in your close vicinity and what they might be doing. Will they be affected by your work?

3. Keep away from the edges of an excavation unit. They are fragile and can easily collapse on those working below. This may also destroy the provenience of any finds from the wall and strata.

4. Always ask permission before entering the excavation unit where another person is working.

5. Project safety is up to everyone. If you see a tool lying on the ground or in a dangerous location, politely move it to avoid accidents.

Types of Archaeological Survey

Before any phase of an archaeological excavation, a research design is created through archival and other background research. Excavation is generally carried out in phases. These phases are:

Phase I: Investigations that serve to discover or locate archaeological sites and involve some form of sampling to inform potential further investigation of the site. These often consist of walkover and shovel test pit (STP) surveys.

Phase II: Investigations used to determine the size (both horizontally and vertically) of a site and its condition. It is done to determine whether the site can contribute any important new information to our understanding of local, regional, state, or national history and therefore if further excavation should be supported.

Phase III: If a site has been determined to contribute new information then full data recovery can be done, in consultation with all affected parties and agencies. As much of the site as possible is preserved for future excavations and research.

Basic Vocabulary Associated with Archaeology

Archaeology / Archeology - the scientific study of past human cultures by analyzing the material remains (sites and artifacts) that people left behind.

Archaeological site - a place where human activity occurred and material remains were deposited.

Artifact - any object which has been made or intentionally modified by human action. For the purposes of this document, the object must date from prehistoric or historic times (i.e ., generally at least 50 years ago) to be an artifact.

Artifact analysis - the process of studying and classifying artifacts, usually conducted in a laboratory after excavation has been completed.

Assemblage - artifacts that are found together and that presumably were used at the same time or for similar or related tasks.

Attribute - a characteristic or property of an object, such as weight, size, or color.

B.P. - years before present; as a convention, 1950 is the year from which B.P. dates are calculated.

Ceramic - pottery, fired clay.

Context - the relationship of artifacts and other cultural remains to each other and the site.

Culture - a set of learned beliefs, values and behaviors shared by the members of a society, way of life.

Debitage - the byproducts or waste materials left over from the manufacture of stone tools.

Diagnostic artifact - an item that is indicative of a particular time period and/or cultural group.

Excavation - the systematic digging and recording of an archaeological site.

Feature - a type of material remain that cannot be removed from a site such as roasting pits, fire hearths, house floors or post molds.

Grid - a network of uniformly spaced squares that divides a site into units; used to measure and record an object's position in space.

***In situ* -** used to refer to artifacts that have not been removed from their original position in the ground.

Level - a layer of soil that is excavated together. Levels are numbered from the top to bottom of the excavation unit, with the uppermost level being Level 1.

Lithic - stone, or made of stone.

Lot - a number assigned to each specific strata (soil layer) in a unit, and to all artifacts found within.

Material remains - artifacts, features and other items such as plant and animal remains that indicate human activity.

Midden - an area used for trash disposal.

Post hole - a type of feature; a stain left in the ground indicating the hole that was created to place a wooden post (see post mold).

Post mold - a type of feature; a circular stain left in the ground after a wooden post has decayed; usually indicates the former existence of a house or fence.

Projectile point - a general term for stone points that were hafted to darts, spears or arrows; often erroneously called "arrowheads".

Shovel test pit (STP) - a small excavation unit dug to learn what the depth and character of the stratum might be, and to determine more precisely which strata contain artifacts and other material remains.

Site - a place where human activity occurred and material remains were deposited.

Strata - many layers of earth or levels in an archaeological site (singular **stratum**).

Stratigraphy - the layering of deposits in archaeological sites. Cultural remains and natural sediments become buried over time, forming strata.

Survey - the systematic examination of the ground surface in search of archaeological sites.

Site Fundamentals

The most essential data for any archaeological excavation comes from the controls imposed upon the physical and geographic location of the site and any recovered artifacts. The primary control is the site number which for archaeology sites in Anne Arundel County will begin with 18AN followed by a site-specific number designated by the Maryland Historical Trust (MHT). The “18” represents Maryland and the “AN” stands for Anne Arundel County.

Horizontal control is achieved by using a grid coordinate system that extends over the entire site. This grid is usually established using compass and pull tapes on a magnetic north-south axis. A site datum is established at the corner of the grid with a visually permanent marker (like a stake) that all other site coordinates are based off of. Each STP and unit is assigned a northing and easting coordinate (as in N500/E500) and the northwest unit corner denotes its northing and easting. The STPs and units are numbered sequentially (i.e., 1, 2, 3, etc).

Vertical control (depth) is established using string line and line levels in units and the ground surface in STPs. In general, the highest unit nail is chosen to have the string line, and all elevations are taken from this point.

At sites excavated by Anne Arundel County Cultural Resources Section/The Lost Towns Project we will be using engineering scale measurements, which means we excavate in feet that are divided into tenths (i.e. 1.1-1.9 ft etc.). Occasionally, sites may be excavated using metric measurements.

Provenience and Site Data

Numerous records, bags, and artifacts are associated with each excavation. In order to record and track all of this data, specific site information is written on all records. This information deals with provenience. Provenience is the position of an artifact in time and space, recorded in three dimensions from a known datum point (either site or individual unit). Provenience is the link that connects all records and artifacts for analysis to the context of the site. Without this link, context is lost and artifacts become meaningless.

A lot number is assigned to each unique provenience, usually a stratum or feature, and appears on all documentation, artifact bags, and artifacts as a cross-reference. The specific sequential lot number, assigned by the supervisor, provides a mechanism for tracking all materials and documentation for the site.

The lot list is the register of these numbers for each excavation unit, stratum, feature, and shovel test pit at the site. BEFORE any new unit, feature, or stratum is opened or an STP is excavated, a lot number must be assigned. Unit strata are designated with numbers (Strata 1, 2, 3, etc.) while feature strata are designated with the feature lot number followed by a letter associated with the stratum within the feature (Feature 1 Strata A, B, C, etc). Units and STPs also receive unit numbers and STP numbers, respectively.

The following table provides an example of typical lot list for a site:

Lot	N	E	Unit	Stratum	Fea	STP	Date	Comment
1	500	500	1	1			6/1/16	Plowzone
2	500	525				1	6/1/16	In road
3				A	1		6/1/16	Hearth

Screening and Collecting Artifacts

Nearly all the soil that is excavated will be screened to look for artifacts, but there are a variety of ways to go about this. The most common method of screening involves pushing soil through 1/4" hardware mesh. Soil from shovel tests and most unit soil will be screened through 1/4" mesh. Another method of screening involves forcing soil through 1/8" mesh or window mesh using water from a hose. "Water screening" enables the capture of tiny artifacts that would otherwise fall through the 1/4" screen. Soil from features are generally water screened at sites excavated by Anne Arundel County Cultural Resources Section/The Lost Towns Project. Every third bucket of soils from intact buried horizons are water screened. You will be instructed by your site supervisor how each provenience will be screened and please ask if you are not sure.

Before screening for artifacts, you should have an artifact bag and a field bag tag prepared. Both the bag and the bag tag should be completed with provenience information, as shown below. In case the information on the outside of the bag is rubbed off, the bag tag (placed inside a small zip top bag) will provide necessary information. Remember to include the date and your initials on the bag and the bag tag.

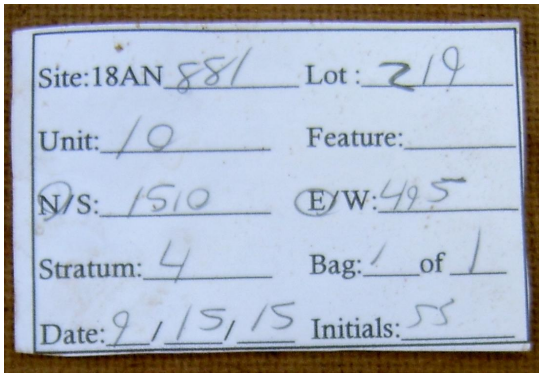


Figure 1: Example bag tag.

All artifacts should be recovered from screened soils unless otherwise directed by the field supervisor. Some small items may slip through the ¼" mesh, so keep a close eye out for items such as pins or beads.

Do not fill the bag more than 3/4 full to avoid breaking any artifacts or the bag. Some artifacts need to be handled in special ways before placing them in a field bag. These items include:

- **Beads** - place beads in a small medicine vial and seal.
- **Charcoal** - do not handle with hands, use the trowel. Place on a small piece of aluminum foil and close up to make a packet. On the outside of the foil write "charcoal' and the provenience information. Ask your field supervisor for help.
- **Small or fragile items** - placed in separate film canisters.
- **Bones and fish scales** - put into a separate zip-top bag without any other artifacts. Write "Bones" and the provenience information on the outside of the bag.

If you are not certain what to do with a particular artifact, err on the side of caution and ask your field supervisor.

Shovel Test Pits

Shovel test pits (STPs) are small holes dug as part of a site survey to retrieve artifact and stratigraphic information over large areas and are generally part of Phase I surveys. STPs are typically excavated at uniform distances (usually 25 or 50 ft) along the site grid, although they are occasionally dug in judgmental locations at the discretion of the site supervisor.

An STP is dug about 1.5 ft in diameter using a round-blade shovel. The hole should be excavated until .25 ft of sterile soil is reached. Soil is screened through ¼" mesh over a tarp and the recovered artifacts are bagged. Each bag is annotated with the STP number, lot number, and coordinates. The stratigraphy is recorded on the STP form, along with an artifact summary and any applicable notes (including location, notable stratigraphic changes, anything unusual, etc.). When all data has been collected the STP is refilled.

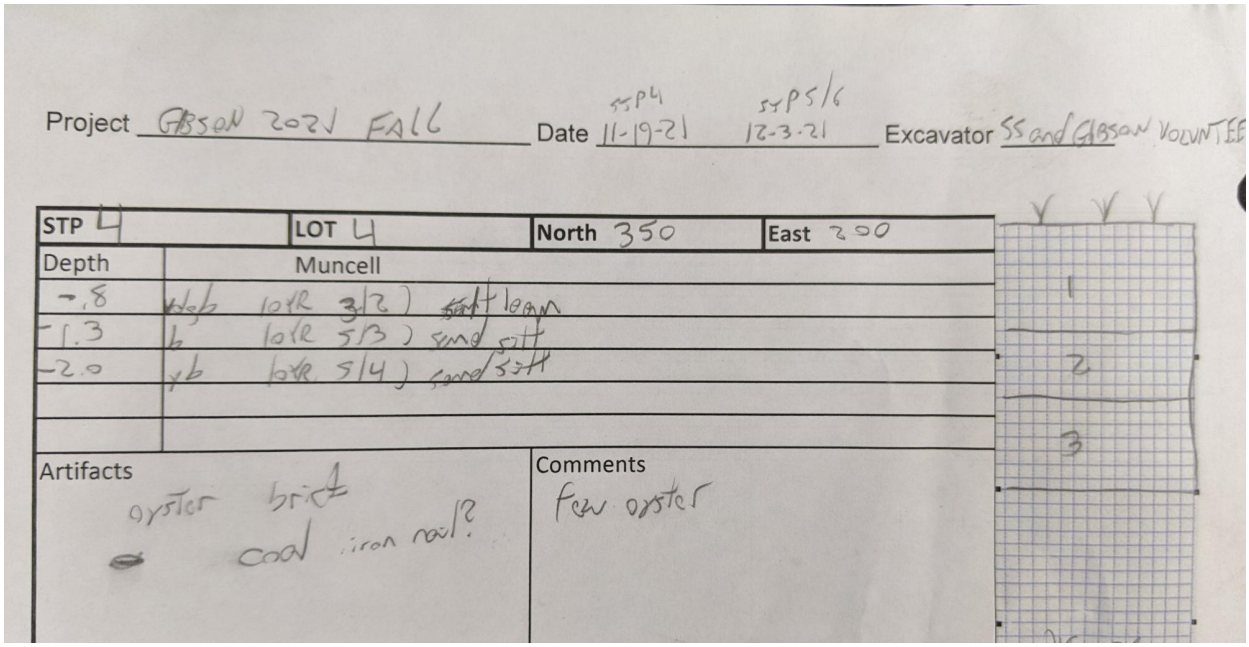


Figure 2: STP form example.

Unit Excavation

Lay Out a 5ft x 5ft Excavation Unit

Prior to excavation, a unit must be laid out and marked with string. Lay out the four corner nails of the unit along the site grid using tape measures. Tie and wrap string around all four nails, wrapping the string toward the inside of the unit. Tie an additional piece of string, about 10 ft long, to the nail with the highest elevation to use for taking vertical elevations in the unit.

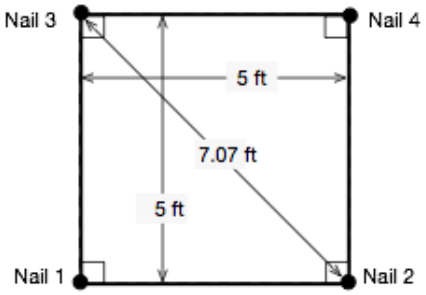


Figure 3: Example of unit dimensions.

Complete the basic information of the provenience card

Complete the first portion of the provenience card with the lot number, unit number, stratum, and coordinates. In order to do this, you must look at the lot list to get the next sequential lot number and fill out associated information completely. You ***must*** do this before any excavation occurs. Other portions of the card will be completed as you excavate. Obtain and fill out a bag and bag tag and label it with the unit data that you just put on the provenience card. Unit strata are assigned sequential numbers (1, 2, 3, etc) within your unit.

Opening elevations

It is necessary to determine the elevation of surfaces within the unit, using the string line from the highest corner of the unit. To take an elevation:

1. Stretch the string tightly across the unit. Place a line level on it about 1 ft from where you are holding the string. Keep the bubble centered between the two marks to keep the string horizontal.

2. While holding the string, use a folding ruler to measure the vertical height from the string to the level in tenths of an inch.

3. Opening elevations are taken at all four corners and the center of each stratum or feature.

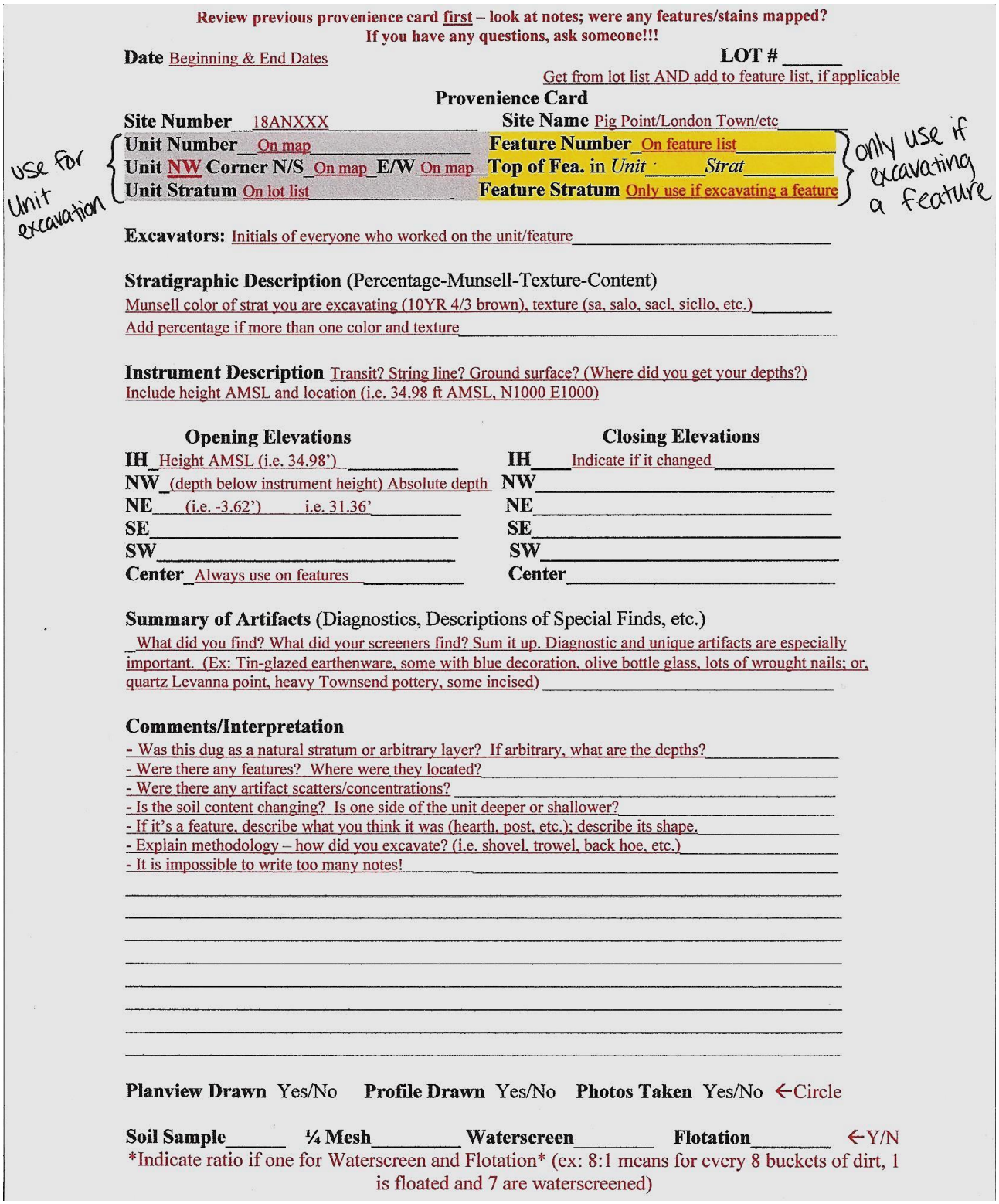
This information is transferred to the unit provenience card. For subsequent strata you will be using the string line method to take the measurements. All measurements are in tenths of an inch.

Excavate the unit

If necessary, field supervisors will assist you in removing any sod from the excavation area. They will also help in setting up screening areas.

Use the flat edged shovel to “skim” the soil, taking 1-2 inches off in even strokes all the way to the edges of the unit. This ensures that any subsurface features or changes in stratigraphy are seen prior to impacting them. Root clippers and dustpans will be used to keep the excavation surface neat and excavators should pay careful attention to ensure that the walls of the unit are cleanly cut at 90 degrees. Always look for changes in soil color, texture, or composition. When you see or feel any soil change, stop

your excavation and record your observation. You may be at a separate stratum or feature, and therefore at the base of the current stratum. When you notice a soil change, notify your field supervisor.



Review previous provenience card first – look at notes; were any features/stains mapped?
If you have any questions, ask someone!!!

Date Beginning & End Dates **LOT #** _____
Get from lot list AND add to feature list, if applicable

Provenience Card

Site Number 18ANXXX **Site Name** Pig Point/London Town/etc

use for Unit excavation

Unit Number On map **Feature Number** On feature list
Unit NW Corner N/S On map **E/W** On map **Top of Fea. in** *Unit* *Strat*
Unit Stratum On lot list **Feature Stratum** Only use if excavating a feature

only use if excavating a feature

Excavators: Initials of everyone who worked on the unit/feature

Stratigraphic Description (Percentage-Munsell-Texture-Content)
Munsell color of strat you are excavating (10YR 4/3 brown), texture (sa, salo, sacl, sicllo, etc.)
Add percentage if more than one color and texture

Instrument Description Transit? String line? Ground surface? (Where did you get your depths?)
Include height AMSL and location (i.e. 34.98 ft AMSL, N1000 E1000)

Opening Elevations		Closing Elevations	
IH	Height AMSL (i.e. 34.98')	**IH**	Indicate if it changed
NW	(depth below instrument height) Absolute depth	**NW**	
NE	(i.e. -3.62') i.e. 31.36'	**NE**	
SE		**SE**	
SW		**SW**	
Center	Always use on features	**Center**	

Summary of Artifacts (Diagnostics, Descriptions of Special Finds, etc.)
What did you find? What did your screeners find? Sum it up. Diagnostic and unique artifacts are especially important. (Ex: Tin-glazed earthenware, some with blue decoration, olive bottle glass, lots of wrought nails; or, quartz Levanna point, heavy Townsend pottery, some incised)

Comments/Interpretation
- Was this dug as a natural stratum or arbitrary layer? If arbitrary, what are the depths?
- Were there any features? Where were they located?
- Were there any artifact scatters/concentrations?
- Is the soil content changing? Is one side of the unit deeper or shallower?
- If it's a feature, describe what you think it was (hearth, post, etc.); describe its shape.
- Explain methodology – how did you excavate? (i.e. shovel, trowel, back hoe, etc.)
- It is impossible to write too many notes!

Planview Drawn Yes/No **Profile Drawn** Yes/No **Photos Taken** Yes/No ←Circle

Soil Sample_____ **¼ Mesh**_____ **Waterscreen**_____ **Flotation**_____ ←Y/N
Indicate ratio if one for Waterscreen and Flotation (ex: 8:1 means for every 8 buckets of dirt, 1 is floated and 7 are waterscreened)

Figure 4: Example of a provenience card.

Stratum Change

When there is a change in the natural or cultural characteristics of the stratum (e.g., a change of soil color, texture, and/or a difference in inclusions or artifact density), excavation should be halted. Let your field supervisor know what you found. If the soil difference is focused in one portion of the unit or is not uniform across the unit, a feature may be present.

In order to prepare for photographs, the stratum or feature should be cleaned of debris and loose dirt using a trowel. Any remaining tree roots should be clipped and then removed. The floor is then smoothed using a trowel, clearing all footprints and other digging marks. After an area is troweled, DO NOT WALK ON THAT SURFACE until it has been photographed. Even after photographing, care should be taken to minimize foot traffic on excavation surfaces unless absolutely necessary to work.

Photograph the completed stratum

Photographs will be taken of every closed stratum, but particular attention should be paid to a unique feature, significant stratigraphy, or other elements of interest present in the unit. Once the unit is prepared, place a sign board, as shown below, a north arrow or trowel pointing north, and a scale onto the unit where they will not obscure any pertinent features. Keep shadows out of the shot by using a tarp. There should be no equipment visible in the photograph.

Figure 5: Sample closed stratum photograph.

Draw a plan view of the unit

After excavation of a stratum is complete, a plan view of the unit should be drawn on the back of the provenience card for that stratum (i.e. when you finish digging stratum 2, draw what you see on the stratum 2 provenience card before you being excavation of stratum 3). Premature feature definition should be avoided. If you are not sure, record the feature objectively without interpretation. There is no such thing as too much information on a plan drawing. We will never be able to see what you see again. DETAILS are important!

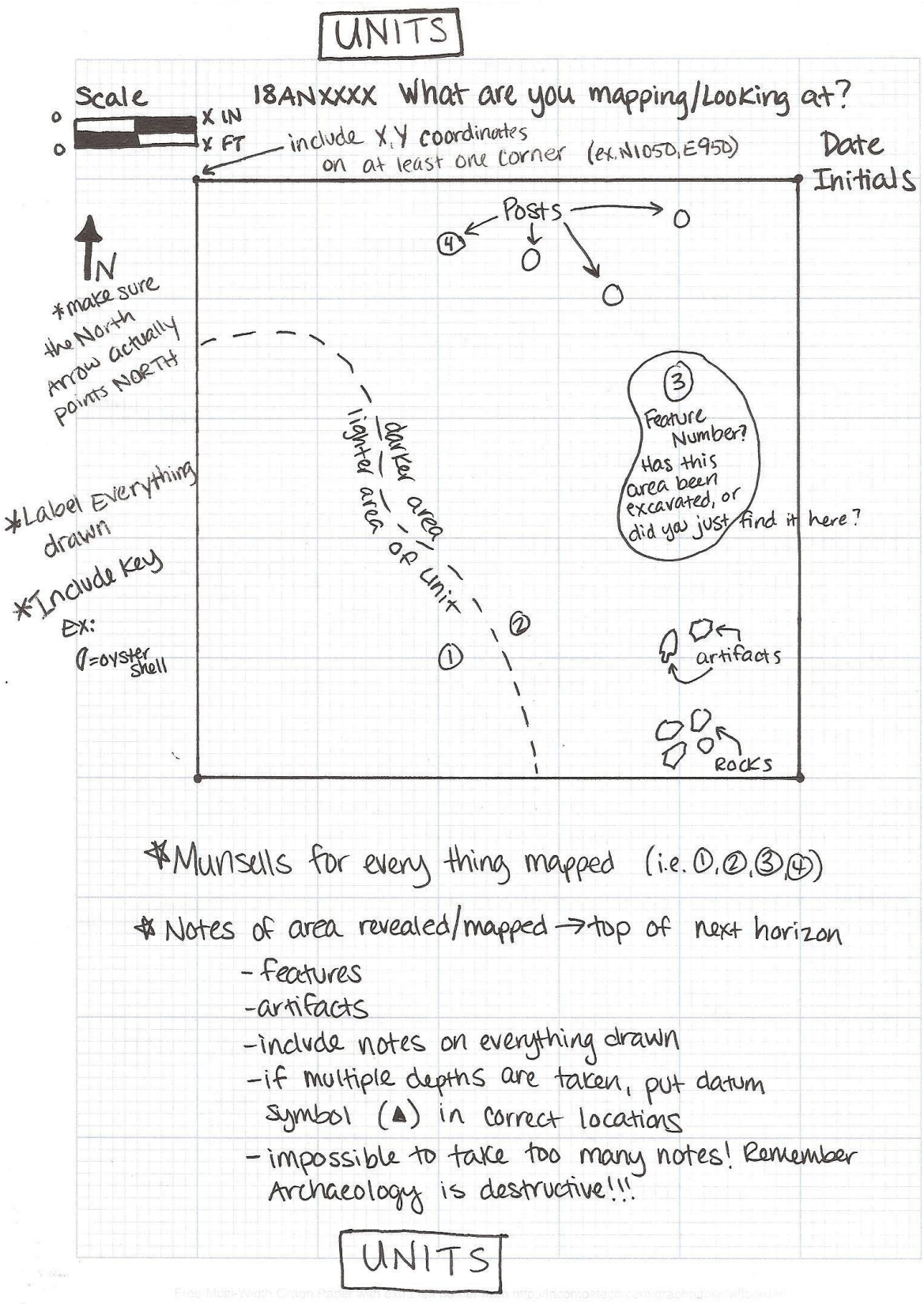


Figure 6: Sample unit plan view.

A plan view drawing shows the 5 by 5 ft unit on a grid to scale with measurements in tenths of a foot. All details, such as changes in soil, objects found, postholes, etc. are noted on the drawing. The drawing is oriented with grid north going toward the top of the drawing with an arrow. Horizontal grid locations are noted on at least one corner of the plan view drawing. All artifacts exposed on the floor of the unit, soil color (using a Munsell color chart), soil texture, features, and deposits should be accurately measured and plotted on the plan drawing. Every separate soil color and texture must be noted (by percentage across the unit) as soils may be mixed deposits. Descriptions of artifacts, soils, and symbols that were used are noted alongside the drawing. Check with a supervisor for the details on mapping the unit. Be sure to include a north arrow, scale, the site number, site name, unit number, and unit coordinates.

Take measurements using three folding rulers. Two of the rulers are perpendicular and are stationary, one along the north or south wall and one along the east or west wall. If you are unsure where to place them, ask your field supervisor. The third is used to measure the distance of the object from a wall.

If a feature was discovered during the excavation of the stratum, mapping the plan view should be done under the direction of the field supervisor. If an interesting feature is found, you may be asked to do separate drawings on graph paper mid-excavation of the stratum.

Take unit elevations

Vertical controls need to be re-established once any stratum has been removed. Elevations should be taken at all four corners and the center of the unit using the string attached to a nail with a line level and a folding ruler. Elevations should also be taken of any notable artifacts remaining on the floor. In taking these measurements, be sure that the string remains at the top of the nail and that it is not touching the ground or any other obstructions along its path. Record these closing elevations on the provenience card of the stratum that was just removed.

Complete the Provenience Card

The remaining areas of the provenience card should be completed with the appropriate information. Time should be taken to include remarks that will thoroughly describe the work that was done and the artifacts/features that were found. This information tells what, how, and why things were done, including an on–site analysis of the unit. Make sure you review your provenience card completely before you begin excavation on any further stratum. This is a good time to write detailed notes of your observations while excavating the stratum.

Draw a Profile View

Upon completion of the entire excavation unit, profile drawings (a view of a wall of the excavation unit) will be drawn. Your field supervisor will assist you in setting up a level string along the wall and with sketching the soil stratigraphy. We record the same information as above with the plan drawings, such as soil color and texture, inclusions, etc. just for the walls of the unit rather than the floor. The stratum you see in the walls may not reflect your unit paperwork, and that is OK. Please draw what you see rather than what you think you should see.

Feature Excavation

A feature is a type of material or cultural remains that cannot be removed from the site. It might just be a small area of different colored soil that was once a fire pit or post mold, it could be a cluster of artifacts, or even a foundation. If you find something that might be of interest, notify the field supervisor so that it can be evaluated for excavation as a feature. Features can provide a wealth of data and must be recovered with extreme care.

Your field supervisor will assign each feature a unique number. All features are bisected or quartered for more careful excavation depending on the size and perceived complexity and/or depth of the feature. Strata within the features are assigned letter values (A, B, C, etc.).

Excavating the feature

All of the same processes used in unit excavation also apply to feature excavation, such as identification, lot numbers, artifact recovery, careful note taking, elevations, plan and profile mapping, and photography. Excavating a feature, however, is more complex than a stratum. It is a slower and more detailed process that includes a more in-depth interpretation. Feature excavation requires a light touch and close, careful attention. You should always check with the field supervisor on how to proceed with a feature.

Documenting the Feature

The provenience card used for features is the same as a unit card, but different parts need to be filled out, including the feature number and stratum, unit stratum where the feature was found, and feature lot number (see Figure 4, above). Remember to include as many observations as possible on your drawings and notes. Extra graph paper is available if you want to make multiple drawings or more notes.

Photograph the feature

Features and special finds will be photographed *in situ*. Supervisors will help you to determine what pictures to take. Each photo should include a photo board with provenience information, a scale and a north arrow. The feature should be clean and the surrounding area cleared of tools. Every effort should be made to keep shadows out of the shot.

Create a Plan View

Often features are complex and excavations may occur on multiple layers or even multiple features simultaneously. In addition to the details on the provenience card, documentation of the feature relies heavily upon drawings and comments to convey information. Two types of drawings will be used to record a feature: a plan view (the feature's horizontal area as seen from above) and a profile or section view (the stratification of the feature on a vertical plane). The feature plan view, similar to that of a unit plan view, should be recorded on the back of the provenience card. In addition to the drawing of soil variations, elevation points can be placed directly on the drawing. Place a "∆"symbol to signify elevation readings, especially if they cannot be placed in the corners. Elevations on the drawing should represent the closing measurement for the level being mapped.

Draw a profile or section view

A profile view can be included on the same sheet as the plan view as long as they are clearly marked. Clean the wall carefully and with a supervisor's input, identify the strata. Place a level string line across or above the face of the profile wall and using a folding ruler, map the strata. Record large artifacts protruding and note in detail the soil descriptions. Make sure the elevation of the string line is recorded on the profile drawing. All the same techniques are used to draw a feature profile as are used to draw the unit profile, see above.

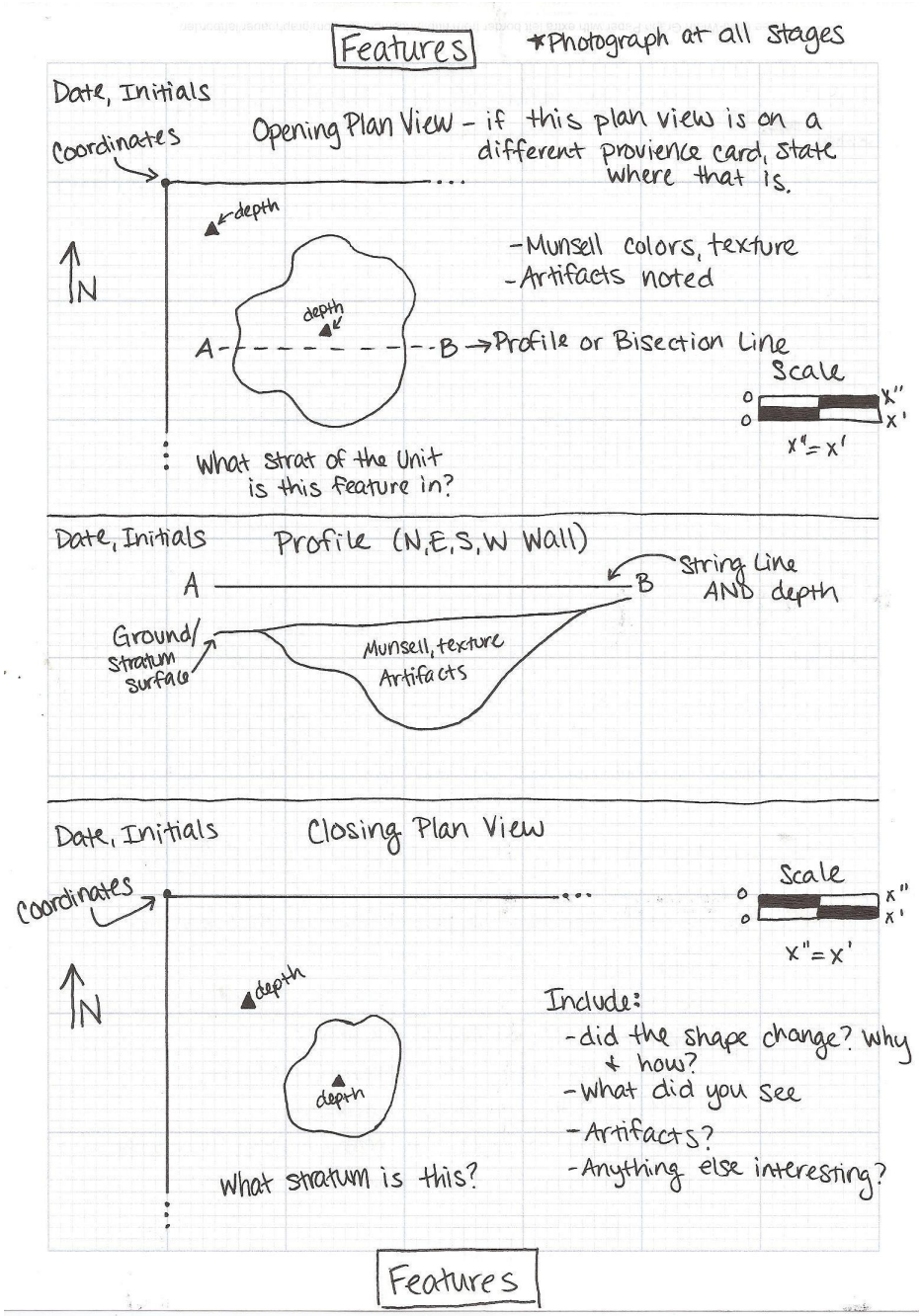


Figure 7: Sample feature plan view and profile drawings.