9. FEATURES

FEATURES WERE DIFFICULT TO identify in the field. Most visible organic material, except charcoal, had leached out of all features but the very newest. However, a number of clues could be used to outline the likely location of features, even in the earliest deposits. In this chapter, we will describe each of the features and the methods by which they were identified. First, however, we will consider the relationship between natural and cultural deposits as they occured at the Blueberry Hill site.

STRATIFICATION

Two types of strata existed at Blueberry Hill. Most obvious were the geological layers, created by æolian deposition and other natural forces. At different times, people inhabited the natural surfaces, which sometimes were buried and sometimes were cut away by natural forces.

The other kind of stratification was archæological deposition, in which humans created deposits (Harris 1979). These cultural layers include hearths, pit features, and scatters of fire-cracked rocks that sometimes lie upon, or intrude into, the geological layers. Whenever a person occupies a ground surface, he is potentially creating an archæological layer, or deposit, that could be characterized as a stratum.

Most of the archæological deposits were identified after the fact, by spatial analysis. Only features 1, 2, and 3 were readily identified in the field and excavated as archæological features. These archæological deposits were created by people who modified the surface of the ground and left artifacts for us to discover. We were able to detect both the artifacts and the ground disturbance in the field, and to recognize them as constituting a feature.

Feature 4 could be defined early in the process by the presence of a distinctive pottery type that was absent elsewhere on the site (FIGURES 6, 20, 59).

Archæological and geological strata differ in one important respect: Whereas geological strata usually are deposited in horizontal layers, archæological deposits seldom lie flat. Gross spatial analysis involves defining geologically-imposed locations of archæological deposits, and then defining the limits of the archæological deposits, vertically and horizontally.

Many forces can influence an artifact's location in the ground, where cultivation is present. At Blueberry Hill, the plowzone was stratified. A combination of animal burrowing, cultivation, and even convection, within the soil will ensure that some artifacts will migrate upward, especially in sites that have been cultivated (Snodgrass and Bintliff 1991:91). At Blueberry Hill, the vertical migration process was confined to the plowzone strata. There was very little working-up from the lowest, buried layers, probably because the æolian soils were deposited so rapidly that there was no time for the gradual convective disturbance process to occur.

Plowing during the past three centuries has accelerated the diffusion process in plowzone artifact concentrations, but research in Maryland has shown that the effect of cultivation may not be as significant or irreversible as it might seem (Riordan 1988). While prehistoric people did not plow, their activities on the successive surfaces of the ground probably had some similar but minor effect on the horizontal distribution of earlier remains.

Because artifacts are well known to migrate (if only a little) vertically and horizontally through the soil matrix, feature boundaries may not be obvious to the naked eye. Traditionally, archæologists have tended to consider

artifacts unstratified unless they were found in a well-defined feature, such as a cellar, a burial, or a dark postmold, to which the law of superposition could be applied. On very old sites, where soil stains have disappeared and artifact migration has occurred, feature outlines may seem fuzzy. In such cases, geological stratification has been used to define chronological relationships.

Diffusion does not, however, render deposits archæologically useless, if the forces at work can be quantified. Horizontal and vertical diffusion is a relatively regular transformation that can be controlled, even at the feature level, just as Riordan was able to capture and quantify diffusion across a plowed field at St. Mary's City.

Most features on the site were not so obvious as the pits and artifact concentrations of features 1-4. These features, or activity areas, were never more than a few flakes, a core, some fire-cracked rock, or a point, left on the ground surface after the people moved on. They might have been trampled into the ground surface, or the sand might have blown away from around them. The excavation system, of rigidly-defined cells, was particularly well suited to identifying and isolating such ephemeral features.

FEATURE 1

Feature 1, discussed in chapter 5, was identified and drawn in the field. It consisted of a small, oval and compact deposit of fire-cracked rock in units 82 and 87, and lay in Zone II just below Zone I. As indicated in chapter 8, a comparison of firecracked rock distributions in the units immediately adjoining this feature suggested that Feature 1 is associated with occupations in zone II and thus dates to the Archaic period.

FEATURES 2 AND 3

A pair of features, numbered 2 and 3, originally appeared as a downward extension of the Zone II matrix into Zone III when they were encountered. Only an abundance of charcoal alerted the excavators to the presence of a feature.

When excavated, the features proved to be two intersecting pits, one large and shallow, the other deep and small. Large concentrations of charcoal near the bottom of the deeper pit indicated a possible domestic use. One of the charcoal specimens yielded a date of 2990 $\pm$ 60 years before present (Beta 53884), or roughly the same age as Marcey Creek pottery. Fill of the pits was visually indistinguishable from Zone II at the top. However, the radiocarbon date clearly indicates that the pits must have originated in Zone I.

The size and relationship of the two pits indicate that they represent a deep house pit (Feature 3) with an associated storage pit (Feature 2) at one end. Although no fire hearth was found in the house pit, a concentration of small fragments of fire-cracked rock were found in Feature 3 against the lip between the two features and in Feature 2. This suggests that a fire-hearth was present at one time, but that the larger stones were removed and the small fragments swept into the storage pit, perhaps to clean the floor of the house pit for use during warmer weather when a fire was not needed inside the structure.

FEATURE 4

Feature 4 was identified entirely on the basis of artifact distributions. As discussed in Chapter 8, Marcey Creek ceramics were tightly clustered at the northern end of the site. Although most were recovered from Zone I, a few were recovered from deeper levels. When it became clear that all or most of Zone II had accumulated before 6,000 BC, well before the date attributed to steatite tempered ceramics, we concluded that the distribution of such sherds below Zone I was the result of deposition in a pit or other disturbance.

In order to define the shape and extent of the pit, we plotted the cells in which Marcey Creek sherds were found below Zone I. The results of this analysis are presented in Figure 63. The size and shape of this distribution suggests the presence of a shallow, flat-bottomed pit which we interpreted as a possible house pit. similar to Feature 3, although shallower in depth.

Single sherds in the southeast quadrant of unit 73 at 10 to 15 cm below Zone I and in the northeast quadrant at 20 to 25 cm. below Zone I indicate the possible presence of a smaller, deeper pit at the southern end of the house pit. This configuration is identical to that of Features 2 and 3. When this observation is combined with the presence of clusters of contracting stemmed points at the northern ends of both pit complexes, it can be argued that they are certainly related culturally, and may even have been created by the same household. The differences in depth may simply represent differences in the season of use.

This was by no means the only feature defined by artifact concentrations; others proved to be just as obvious, once the catalogue had been subjected to a computer-based analysis.

In order to identify such "phantom" features and activity areas, selected artifact types were plotted, using a computer graphics program, DeltaGraph®. During excavation, it had been apparent to field personnel that the site was full of artifact concentrations that were not betrayed by any soil color or texture evidence. Such concentrations might be expressed as a few flakes of similar material found in adjacent excavation units.

Because the site had been dug in relatively small cells, there were about 4500 precisely located data points that could be mapped and analysed. Computer graphic maps allowed the analysts to narrow down the search parameters for features.

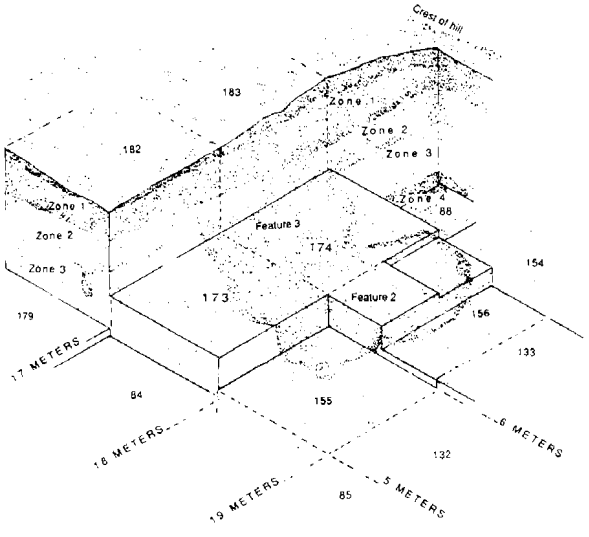

Figure 57
Isometric view of features 2 and 3

ARTIFACT INVENTORY FROM FEATURES

This list combines all the material catalogued from cells in zones II or III that were identified as feature components. Each cell is 5 centimeters deep and a half-meter square.

1 HEARTH

25 fire-cracked rock fragments, four of which join
1 charcoal fragment

2. STORAGE PIT

21 Fire-cracked rocks
7 Heat-reddened pebbles
30 pebbles
1 Jasper cortex flake >2cm
2 Jasper cortex flakes <2cm
3 Jasper non-cortex flakes >2cm
5 Jasper non-cortex flakes < 2cm
10 Chert non-cortex flakes < 2cm
3 Quartz non-cortex flakes < 2cm
1 Quartz cortex flake <2cm
1 Quartz chunk
1 Quartz core
1 Quartzite flake <2cm
1 Quartzite flake >2cm
1 Quartzite tool fragment
2 Quartzite non-cortex flakes <2 cm
2 Bone fragments

3. DWELLING PIT

15 Fire-cracked rocks
1 Heat-reddened pebble
75 Pebbles
4 Jasper non-cortex flakes <2cm
1 Chert non-cortex flake >2cm
5 Chert non-cortex flakes <2cm
1 Chert cortex flake < 2 cm
2 Quartz chunks
1 Quartz non-cortex flake <2cm
1 Seed

4. PIT

(Excluding related zone 1 materials)
1 unclassified shell-tempered sherd
9 unclassified sherds
1 Coulbourn cordmarked sherd
1 Coulbourn net-impressed sherds
29 Marcey Creek sherds
1 Mockley sherd
4 fragments heat-fractured quartz
75 fire-cracked rock fragments
16 heat-reddened pebbles
1 battered heat-reddened pebble
1 heat-fractured pebble fragment
4 pebbles
1 heat spalled and reddened pebble
3 quartz cortex flake, > 2 cm
2 quartz cortex flake, < 2 cm
12 quartz non-cortex flake, < 2 cm
1 quartz pebble with slight battering
1 broken quartz pebble with battering on tip
2 quartz non-cortex flakes, < 2 cm
1 quartz utilized non-cortex flake, >2 cm
1 broken quartz pebble
1 quartz pebble
25 quartz chunks
8 chert cortex flakes, < 2 cm
1 chert cortex flake, > 2 cm
11 chert non-cortex flakes, < 2 cm
2 chert non-cortex flake, > 2 cm
4 chert chunks
1 split chert cobble fragment
2 jasper chunks
1 jasper core
14 jasper cortex flake s< 2 cm
20 jasper non-cortex flakes, < 2 cm
3 jasper non-cortex flakes, > 2 cm
1 jasper pot-lid flake
1 jasper pebble
1 jasper pebble with polish
1 heat-reddened jasper pebble
1 jasper pebble fragment
13 quartzite non-cortex flakes, < 2 cm
1 quartzite non-cortex flakes, > 2 cm
1 quartzite cortex flakes > 2 cm
2 quartzite cortex flakes < 2 cm
1 broken quartzite end-scraper
1 battered quartzite cobble
1 quartzite chunk
2 sandstone hammerstones
1 oyster shell
2 quartz cobbles
1 bone fragment
1battered argillite contracting stem biface
1 lump of lime
2 feldspar chunks

5. PIT

(Only the portion in 163)
11 heat-reddened pebbles
4 pebbles
11 fire-cracked rock
hammerstone
3 quartz chunk
4 chert cobble fragments
7 bog iron fragments
6 jasper cortex flakes,<2 cm
3 jasper cortex flakes, >2 cm
1 jasper non-cortex flake, >2cm
4 jasper non-cortex flake, <2cm
3 chert non-cortex flakes, <2 cm
1 chert cortex flake, > 2 cm
1 chert cortex flake, < 2 cm
1 split pebble fragment

6. PIT

1 Mockley cord-marked sherd
3 Mockley net-impressed sherds
13 unclassified shell-temper sherds
7 Fire-cracked rock fragments
1 heat-reddened pebble
1 rhyolite projectile point stem
1 pebble
1 quartz chunk

7. PIT

4 chert non-cortex flake, <2 cm
2 chert non-cortex flakes, >2 cm
1 chert cortex flake, < 2 cm
8 jasper cortex flake, < 2 cm
6 jasper non-cortex flake, < 2 cm
1 quartz cortex flake, < 2 cm
1 quartz non-cortex flake, < 2 cm
13 heat-reddened pebbles
2 heat-fractured pebble fragments
1 cobble
4 fire-cracked rock fragments
charcoal
1 calcined bone fragment
5 pebbles
1 quartz chunk

8. POST HOLE

2 quartz chunks
1 black chert core
1 quartz non-cortex flake

FEATURES

No.	*Category*	*Defining characteristics that facilitated recognition*	*Excavation Register numbers*	*Comments*
1	Woodland I Hearth	Fire cracked rocks in a circular pattern	82, 87, features catalogued under 82zz	Associated with bifaces and other artifacts in nearby units;occurs in the top of Zone II
2	Woodland I Dwelling pit	Charcoal in profile	155bbb, 155fff, 155jjj, 155nnn, 156y, 156z, 156cc, 156dd, 156gg, 156hh, 156kk, 156ll, 156pp, 156qq, 156rr, 156ss, 156uu, 156vv, 156ww, 156aaa, 156bbb, 156ccc, 156eee, 156hhh, 156lll, 173bb, 173ff,173ii, 173jj, 173nn, 173rr, 173vv, 173zz, 174aa, 174bb, 174ee, 174ff, 174ii, 174jj, 174mm, 174nn, 174uu, 174vv, 174yy, 174zz, 174eee, 174ggg, 174hhh, 174kkk, 174lll	Inside Feature 3 and somewhat deeper.
3	Woodland I Dwelling pit	Charcoal in profile	173aa, 173dd, 173ff, 173hh, 173jj, 173ll,174v, 174aa, 174bb, 174cc, 174dd, 174ee, 174ff, 174gg, 174hh, 174ii, 174jj, 174yy, 182x, 182bb,182f, 183w, 183x, 183bb, 183ee, 183ff	Originates at or near the bottom of the plowzone and continues down into Zone III
4	Woodland I Pit	Marcey Creek pottery first noticed in Zone I	73, 73e, 73f, 73j, 73k, 73l, 73t, 73z, 77, 77b-l, 78b-h, 78j-l, 79, 79c, 79g, 79i-j, 79k-p, 81, 81c-h, 81j, 81l, 88, 89, 89i, 90k-l, 91c-f, 92, 92d, 92g, 92l, 95, 95a, 95c, 95q-s, 102a-h, 184	First defined by the presence of Marcey Creek ceramics, and subsequently shown to contain various other materials
5	Pit	Bog iron, Heat-reddened pebble	163, levels 6-9, the west half of levels 10-11, and southwest quadrant of levels 12-14 Possibly also extends into the upper layers of 167 ,160, 159, and other adjacent units	In Zone III, noticed first as a distribution of bog iron and chert cobble fragments. In unit 160, a concentration of flakes was noted in the field at the top of Zone III.
6	Woodland I Pit	Mockley pottery, possibly 2 vessels	148a through l 145d, h, l	Zone II, top level
7	Pit	Heat-reddened pebbles	168a-p 167	Zone II, top level
8	Post hole	Core	75zz	Zone III

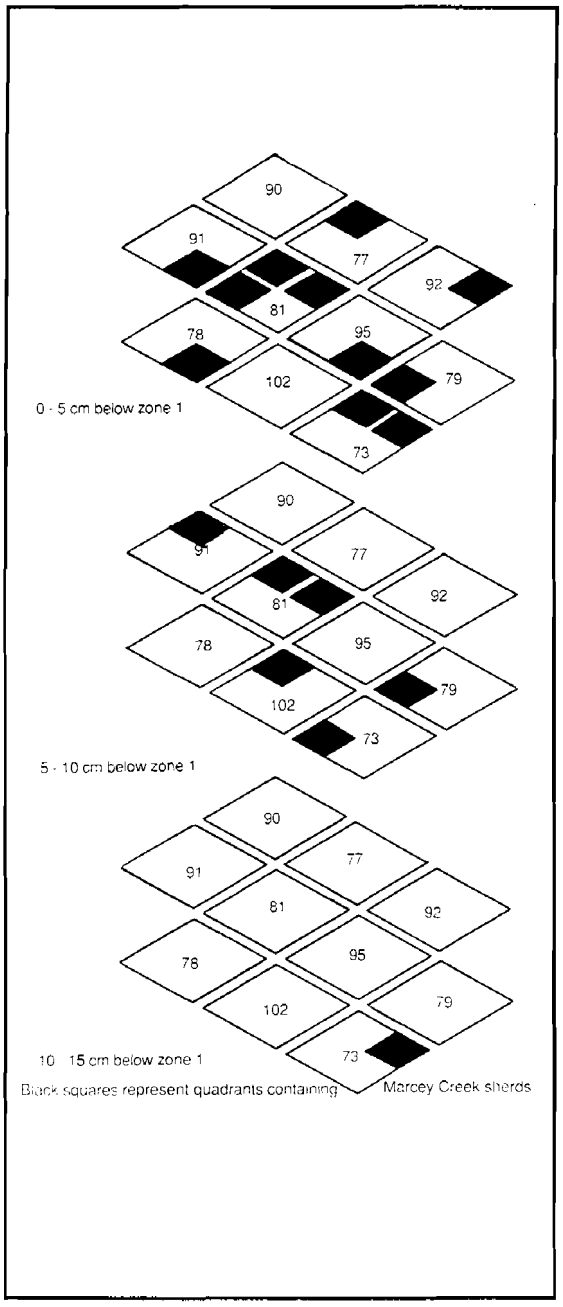

Figure 58

Isometric diagram of units defining Feature 4

Black squares represent quadrants containing Marcey Creek sherds. In the cell at 20 to 25 cm. below was yet another sherd in the northeast quadrant of ER73, suggesting a downward projection of the feature or an intrusive hole.

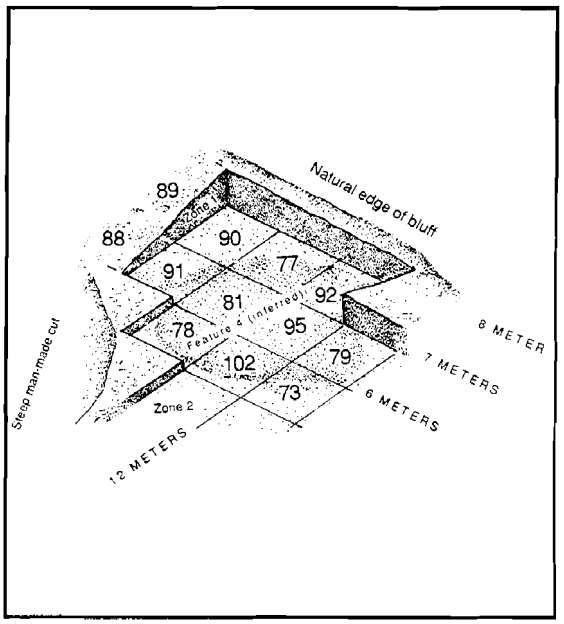

Figure 59

Isometric view of feature 4

Reconstructed, based upon the data shown in Figure 63

FEATURE 5 WITH ACTIVITY AREA

Clues to the identity of some features accumulated slowly. While unit 160 was being excavated, the supervisor noted, "As we move into Zone III, note increase of flakes, particularly quartz, in upper part of zone. Sterile part of zone below the concentration." While cataloguing the adjacent unit 163, the analyst noted, "Note vertical distribution of bog iron fragments and chert cobble fragments."

Once the unit 160 artifacts were counted, it turned out that the five centimeters at the top of Zone III (level 6) contained two heat-reddened pebbles, one chert flake, three quartz flakes, two jasper flakes, and a fire-cracked rock.

The rest of the zone in this unit contained nothing. The level above, at the bottom of Zone II, contained two jasper flakes and a pebble. An activity area clearly lay on top of Zone III at the interface between the two zones.

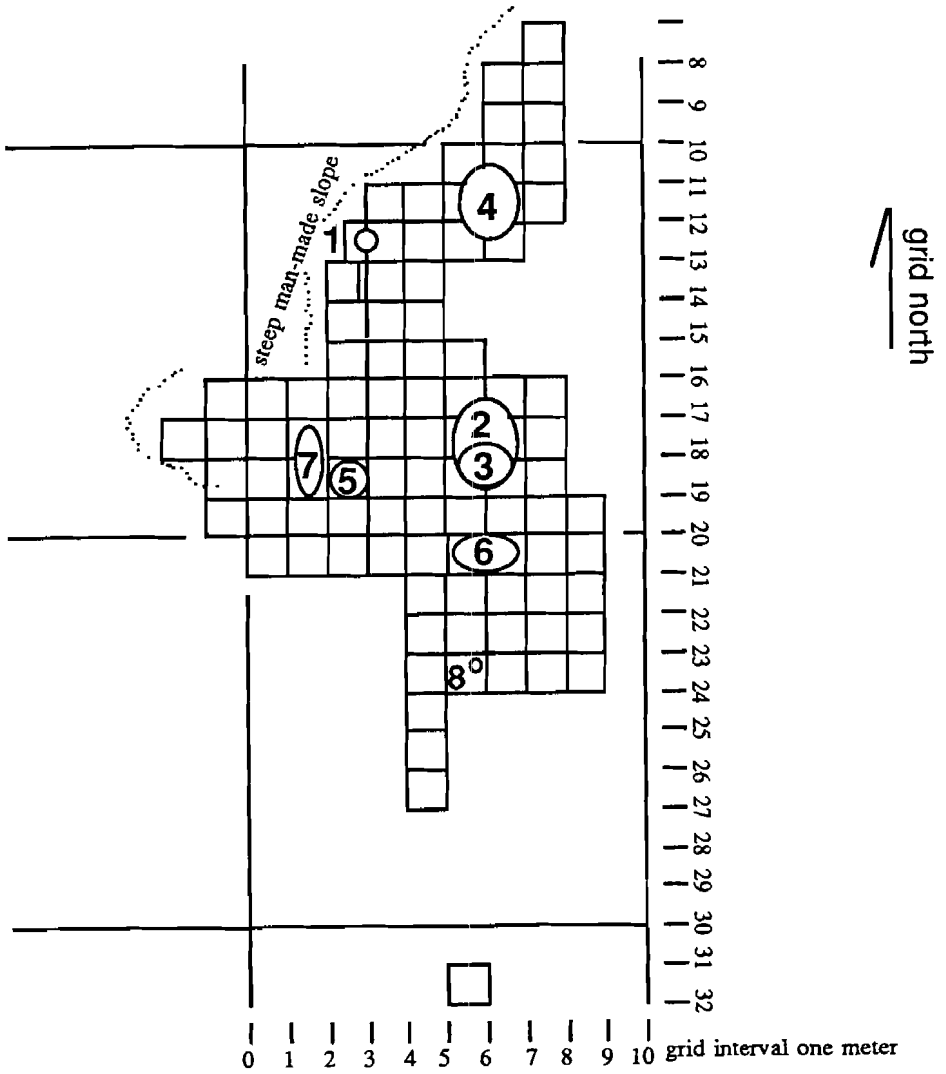

Figure 60

Locations of features, horizontally, regardless of vertical relationships

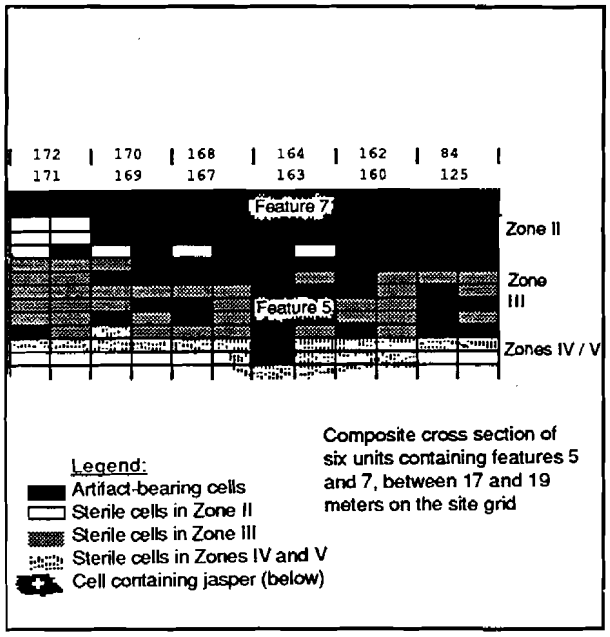

Figure 61

Gross section of features 5 and 7

Composite cross section, showing relationship of sterile units and artifact-bearing units.

It is tempting to define the entire Zone III / Zone II interface as a "living floor" or stable ground surface on which people lived for a time. Soil studies suggest that this interface zone represents a stable period when no new sand was being deposited, followed by a dry and windy episode when the surface soils blew away, leaving the heavier artifacts at a lower level

Adjacent unit 168 showed a similar pattern, with the top level of Zone III producing two jasper flakes, three heat-reddened pebbles, a chert flake, and a fire-cracked rock fragment.

In unit 163, the vertical distribution noted anecdotally was confirmed by the catalogue. Artifacts were found in all levels of Zone III. In the southwest quadrant of the square, the artifacts extended all the way down to the Pleistocene A horizon, Zone IV.

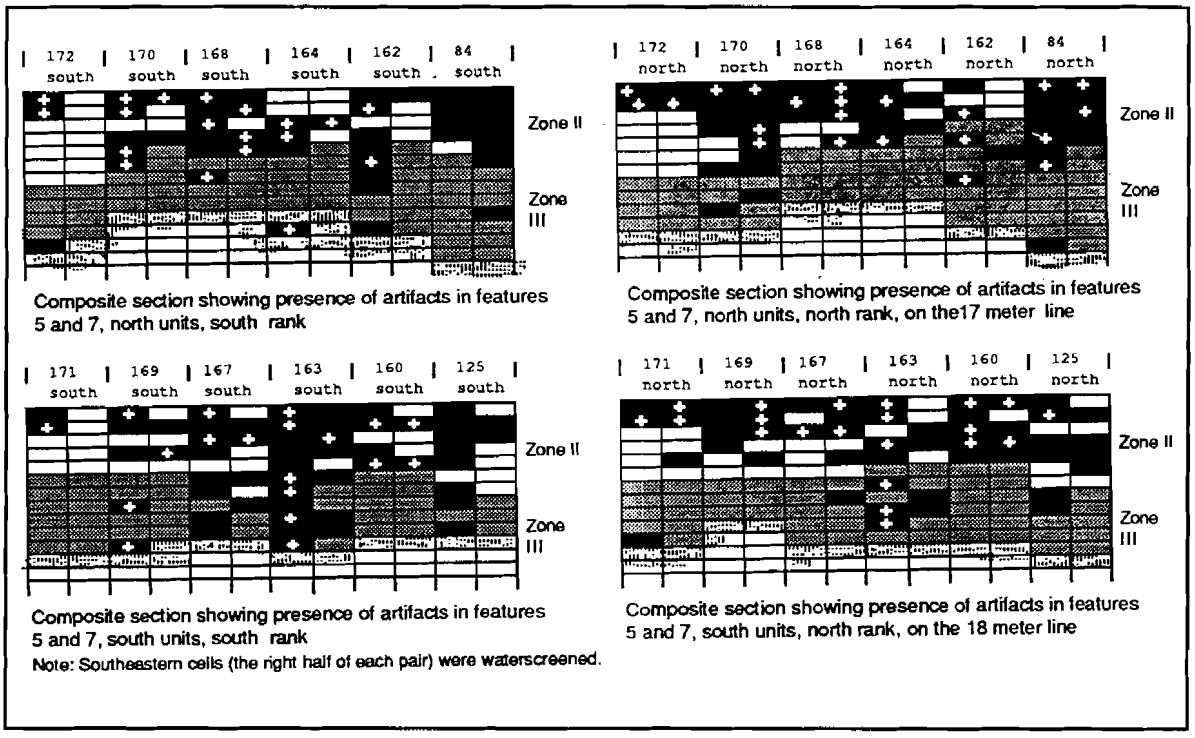

Figure 62

Section through features 7 and 5

Schematic cross section between units 170-171 and units 125-84. Blackened cells indicate presence of artifacts. Crosses indicate presence of jasper in a particular cell.

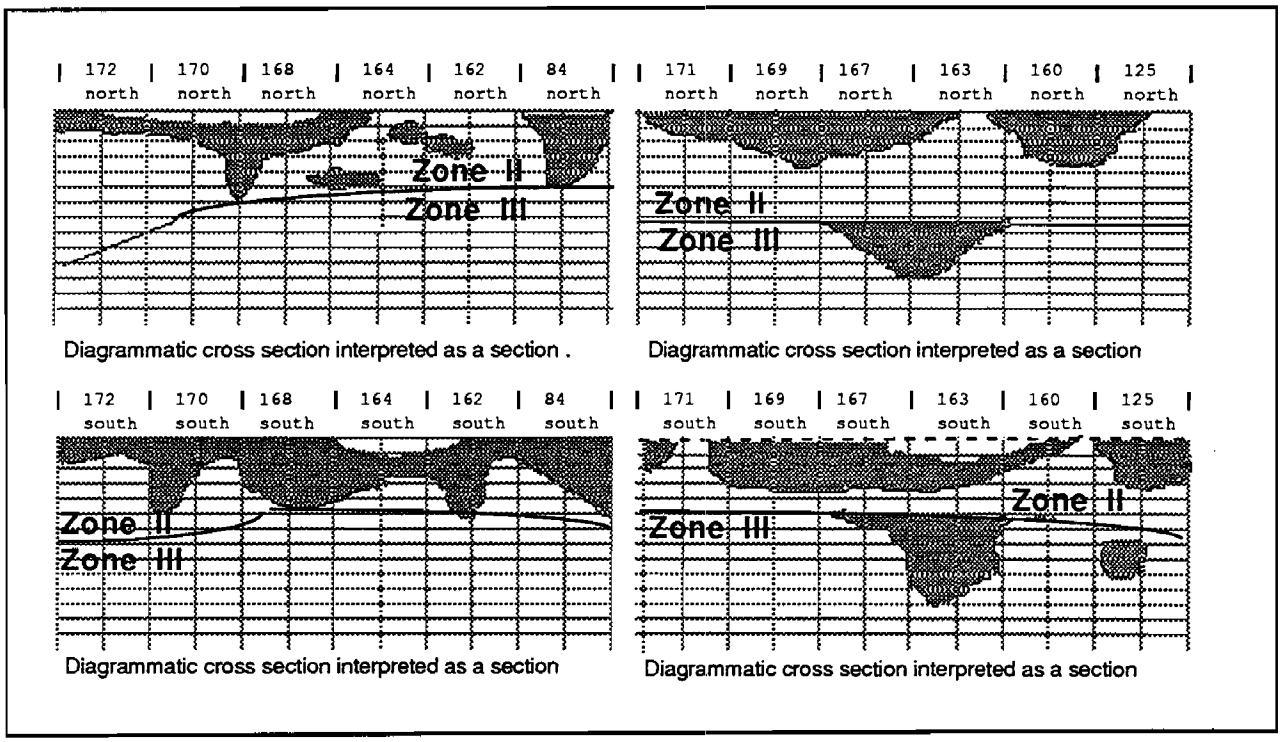

Figure 63

Interpretation of the section through features 7 and 5

Sections between units 170-171 and units 125-84, north and south sides. Note the downward projections of the upper features, which could have been postholes

Diagonally adjacent to this unit on the southwest was unit 159. In the top ten centimeters of the northeast quadrant of this unit were three heat-reddened pebbles, one quartz flake, a jasper cortex flake, a jasper scraper, a split jasper pebble, and a chert flake.

And so it went, around the perimeter of unit 163. Unit 153 contained artifacts in its top ten centimeters, including chert, quartz, and jasper flakes, pebbles, and fire-cracked rock. An image emerged of a pit feature, which we called Feature 5, at the center of a living floor. The date of this pit can be inferred from its location in the geological profile, in the top of the Pleistocene sand accumulation.

Larger maps revealed a few more details about this particular concentration. In the upper part of Zone III, unit 163 lay at the center of a small cluster of jasper cortex flakes, and in one of three clusters of small non-cortex jasper flakes. In the middle and bottom layers of Zone III, jasper continued to be concentrated in unit 163, now presumed to be pit fill.

Once Feature 5 and its adjacent activity area were recognized, it became apparent that most jasper in Zone III is associated with it. The area can also account for a sizable portion of the heat-reddened pebbles and chert flakes that were found in Zone III.

FEATURE 6

Like Feature 4, Feature 6 was defined on the basis of the distribution of ceramics below Zone I, in this case, shell-tempered Mockley sherds. Zone I was discarded from the units in which this feature occurred, so that it is not possible to determine whether there was

a related concentration of Mockley ceramics in this zone.

FEATURE 7 WITH ACTIVITY AREA

Closer to the modern surface, and separated from feature 5 by relatively sterile layers, was another activity area.

Distribution evidence, such as the fire-cracked rock map, show artifact concentrations dropping as one goes inland at all levels. Jasper, however, was concentrated in one relatively inland unit. Most of the jasper flakes in Zone II were found in units 167 and 168. This anomaly was labelled Feature 7.

Six units, 167 through 172, defined the size of the activity area associated with the feature. The two most inland units, 171 and 172, contained considerable material in the top ten centimeters of Zone II, but virtually nothing in the rest of the zone. These sixteen cells contained 5 heat-reddened pebbles, 2 other pebbles, 6 quartz flakes, 14 jasper flakes, 3 chert flakes, 1 split cobble, 1 quartz chunk, and one piece of bog iron.

The next two units, 169 and 170, contained a thicker deposit of artifacts, 25 centimeters thick in 169 and the full depth of the zone in 170.

In unit 167 and 168, the artifact-bearing layer was 25 centimeters thick and exhibited some sloping, as if the feature has an edge. Zone II is thinner in units 163 and 164, and artifacts are found in all levels. A concentration in Zone III, centered in the northwest quadrant of unit 163, was identified as feature 5.

In the next rank of two units, 125 and 84, Zone II artifacts were again concentrated in the upper layers, indicating that they were outside the feature.

Plotting these deposits on sections (FIGURE 61), allowed them to be progressively refined until the activity area's geography was clear. The first step, a gross profile four cells thick, provided the general outline of the feature and apparent isolated finds on the sides. It was possible to discern gross outlines of the two postulated features.

As a second step, each rank of cells was plotted separately, with cells containing jasper marked by a white cross (FIGURE 62).

The final step was to create a parallel series of traditional-style archæological cross-sections guided by the presence of jasper, tempered by subjective readings of the excavation register (FIGURE 63). Although the two features were almost exactly aligned vertically, and contained much of the site's jasper, it was not possible to declare them related or identical. They both belong to the period when jasper was popular, and they may have been the only occupations on the site during those centuries. Their co-location may have resulted from local geographical situation that is long vanished, or it may have been coincidence.

FEATURE 8

Feature 8 is a rectilinear historic period posthole originating near the surfacein units 74 and 75 and extending to 70 cm below the surface. The prehistoric artifacts found in the fill undoubtedly originated in surrounding deposits.

SUMMARY

Features, as shown in Figure 60, do not tell the entire story of human space utilization at Blueberry Hill through time. On many sites it is sufficient to map visible features in order to describe intra-site geography, but the team here did not enjoy that luxury.

The Blueberry Hill experience has shown, however, that one may enhance the recognition of human activity areas by increasing the number of cells in a site, and by devising strategies to discriminate among these activity areas.