

## Excavations of Housepit 9

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### **Purpose and Extent of the Excavations**

The excavations at HP 9 are part of a large ongoing project at the Keatley Creek Site investigating how social group structure, social stratification, and differential access to, and control of, resources can be used to explain the occurrence of the unusually large housepits and villages found in the Lillooet area (Vol. I & Vol. II Hayden et al. 1986, 1987). Housepit 9 is one of 21 housepits that have been tested at the site in the last 7 years. It is one of only 5 that have had most, or all, of the floor exposed.

Housepit 9 is located southeast of the main part of the village across the small valley containing Keatley Creek. Few other cultural depression are situated on this side of the creek (Vol. III, Preface, **Fig. 1**). Notable exceptions include a large cache pit near the rim of HP 9 that was very likely constructed and used by the occupants of the housepit and a second housepit (107) only 10 m away that also may have been constructed at approximately the same time.

The diameter (rim crest to rim crest) for the 77 untruncated housepits at the Keatley Creek Site ranges from 4.25–20 m (mean = 11 m) with approximately 2\3 of the housepits greater than 8 m across (Spafford 1991:7). Housepit 9, with a diameter of only 7.8 m and a depth of 0.85 m at the surface, is relatively small.

Housepit 9 was initially chosen for testing in 1987 for two reasons: (1) to determine if this housepit would be a suitable candidate for further excavation as part of the sample of small housepits from the site, and (2) to

examine the nature of the few housepits isolated on the outskirts of the village and distant from the high density of housepits at the site core. The test consisted of a narrow trench (50 cm x 4 m) that extended from the northern rim to the center of the housepit depression (**Fig. 2**). The trench revealed a relatively complex stratigraphy with at least four living surfaces, included three consecutive housepit floors and a post- housepit occupation (Jolly et al. 1987). The deposits were comparatively shallow with a low artifact density that allowed for relatively quick excavation.

Based on the test results further excavations were undertaken at the housepit in 1990. An additional 25 subsquares (50 x 50 cm excavation units) were excavated in the center of the housepit to supplement the eight removed during testing (**Fig. 1**). The discovery of a Kamloops Horizon point in association with the most recent housepit floor deposit (Stratum VIb) provided a relative date of 1200-200 BP for this occupation. A large cache pit was found along the south wall of the housepit and partially excavated.

In 1991, twenty-eight more subsquares were excavated in order to expose as much of the remaining floor as possible and complete excavation of the large storage pit. The 1992 project removed 24.4 additional subsquares around the outer edge of the housepit floor providing a total areal exposure of 21.35 m<sup>2</sup> (85.4 subsquares) (**Figs. 1 and 2**). Some floor deposits remain to be excavated around the extreme outside perimeter of the floor, but I am confident that all large storage features and hearths have been exposed. Little or no evidence was found of postholes from posts that may have been used to support the roof structure or any internal house structures.

## **Methodology**

The housepit was covered by a 2 m x 2 m grid of squares that were designated with a letter of the alphabet (**Fig. 1**). Each square was divided into 16 subsquares, 50 cm on a side, numbered 1 to 16. Each subsquare was excavated separately using a trowel and dustpan and the soil screened through 1/4 inch (6.25 mm) mesh. All bone and debitage, and a judgmental sample of the larger floral remains were collected and bagged by stratum and level for each subsquare. One liter flotation samples of the floor deposits were collected from four subsquares (Ssq.'s 1, 7, 9, 15) in each square to acquire a systematic sample of debitage, fauna, and flora lost through the use of the large screen mesh. Flotation samples were also collected from each of the fill units in the pit features.

Detailed profiles were drawn of the walls of each square and the exposed outer edges of the excavation. A rough sketch of one wall of each subsquare was also made prior to excavation, to indicate natural strata and arbitrary excavation levels.

The deposits were excavated according to visible stratigraphic zones or strata (**Figs. 3, 4, 5, 6, 7, 8, and 9**). The most commonly encountered strata were: I (surface), IV (roof), VIa,b,c, (filtered collapse and floor), VIII (floor), XII (roof), and X (floor). Any floor strata more than 5 cm thick were divided and excavated in 5 cm levels arbitrarily contoured to the surface of the stratum. All other strata were similarly divided into 10 cm levels.

Provenience for the artifacts and other cultural remains from the site was recorded according to stratum and level within each 50 cm subsquare. A plan view of the cultural remains was generally only made for the floor deposits, with each 5 cm level of the floor having a separate plan. All flakes,

tools, bone, charcoal, and features were plotted on these plan views, as well as any fire-altered rocks or unaltered rocks greater than 4 cm in maximum dimension. During the 1991 and 1992 field seasons (occasionally in 1990) excavators attempted to resolve difficulties in distinguishing between Strata VI and VIII by also plotting the depths of the artifacts and faunal remains from these two strata on floor plans.

A rough estimate of the clast content was made for each stratum within every subsquare. Clay, silt and sand contents were estimated by feel and the texture described as a silt, clay, or loam according to the Canadian Soil Classification System. Cobble (256-64 mm according to the Wentworth Particle Size Scale) and pebble (64-4 mm) contents were estimated from the volume of each left after screening a bucket of soil from the stratum. This procedure provided a relatively accurate measure of cobble and pebble content. Granule (4-2 mm) content was more difficult to ascertain since these clasts were not retained in the screen and estimates had to be made from a general visual inspection. In many instances the excavator did not even attempt this estimate and the percentage of granules is seen as the least accurate estimate for the percentage of large clasts in the deposits.

### **Stratum I: Surface**

#### **Soil Matrix**

The matrix consists of a very dark brown sandy loam (10 YR 2/2) with a high concentration of organic material in the top 5 cm produced by the modern vegetation cover. Large clasts are uncommon in the matrix with cobbles never more than 5% by volume and often totally absent. Pebbles comprise anywhere from 5% to 20% of the matrix with a general trend for



this fraction to increase with depth. Granules are generally 5% to 15% of the matrix. Pebble and granule content in Stratum I appears to be slightly higher on the west side of the housepit. Many clasts are angular and appear to be fire-altered.

Bioturbation by insect and rodents appears to be minor, with cattle seemingly having a greater, though still minor, impact on the surface deposits. The soil is typically loose near the surface where roots and other organic material is abundant, and on the steeper slopes where the deposits are less stable. Closer to the center of the housepit and with depth, the matrix becomes more compact. The surface is distinguished from the underlying Stratum IV by the higher concentration of clasts in Stratum IV and a different soil color, though in some cases the Stratum IV is lighter and in others darker. The matrix and cultural content of Stratum IV is consistent with that interpreted as collapsed roof material in other housepit excavations (Hayden et al. 1986, 1987).

Although the surface deposits are generally 5–10 cm thick, thickness can vary from as little as 3 cm to as much as 20 cm (**Figs. 3, 4, 5, 6, 7, 8, and 9**). The thicker deposits are typically found closer to the rim where gravity and the surface configuration combine to produce the thickest deposits. In an earlier report, excavators noted (Iannone and Handly 1990:4) a trend for thicker deposits to occur in the western half of the housepit. Subsequent excavations show equally thick deposits in the eastern half. An unusually thick deposit of 34 cm in Square G (Ssq. 16) is the product of a hearth feature (HP 8) in Stratum I that had disturbed the underlying strata (**Figs. 7 and 8**).

The surface is interpreted as soil deposited after the collapse of the roof that covered the last housepit occupation. Although aeolian deposition is probably responsible for some of the soil build up in Stratum I, the size of the clasts suggests that most of the surface is the result of colluvial deposition. The main agents causing soil movement into the housepit are probably slopewash and gravity bringing soil (largely reworked roof deposits) into the center of the depression from the rim. The slightly higher incidence of larger clasts in western portions of Stratum I is probably due to the sloping topography to the west of the housepit funneling material into the depression. Disturbance by cattle and horses that use the area to graze has probably accelerated the processes of aeolian and colluvial deposition in the historic period through trampling and the reduction of ground cover.

Most subsquares in Stratum I contain fewer than five fire-altered rocks. Unusually high concentrations (10 or more) are found near Features 8 and 11 and in the southeast and southwest corners of the housepit. Subsquares with moderate frequencies cluster near those with higher frequencies especially closer to the rim. Charcoal is limited to small scattered flecks.

### **Features**

Three features were found in Stratum I, all were located at the bottom of the stratum directly above Stratum IV (**Fig. 10**). Feature 5 (incorrectly designated Stratum II in 1987) is interpreted as a hearth feature used primarily for warmth. The feature is an irregular bowl-shaped depression approximately 60 cm x 80 cm and 7 to 8 cm deep at the center (Sq. G–Ssq. 1 & 5, Sq. C–Ssq. 3 & 4). The top of the feature corresponds to the contact between Stratum I and IV (roof). Fourteen small calcined bone fragments

were found in an oxidized yellowish-red matrix with a high sand content and few clasts. This pit may have been excavated and filled with soil from outside the housepit. However, based on personal observations I think it is more likely that the matrix was produced by the heat of a surface fire that eliminated any organics in the soil, fractured most clasts into sand-size particles, and reduced the clay content by cementing the clay particles with iron oxides (see Vol. I, Chap. 6). The depression may not have been intentionally excavated but merely the result of the logs from the fire disturbing the underlying matrix. No artifacts, charcoal, or fire-altered rock (> 4 cm) were found. The oxidized soil and the lack of charcoal indicates a very hot fire that would be inappropriate for smoking and drying hides. Therefore, the hearth was probably used as a source of heat, though the bone fragments suggest the hearth may have been initially used for cooking. Most of the debris from the hearth is assumed to have been dispersed by subsequent natural and possibly, cultural activities.

Feature 11, interpreted as a hearth, is also a bowl-shaped depression approximately 80 cm across and 14 cm deep at the center (Sq. K–Ssq.'s 4, 8; Sq. C Ssq.'s 1, 5, 9). The soil matrix within the hearth is darker and contains more fire-altered rock, charcoal, and granules than the surrounding matrix. However, the transition is not easily detected and the feature was not recognized during the excavation of Square C. Cultural material associated with the hearth includes: more than eight birch bark rolls (near the top at 212 cm DBD), burnt fragments of pine bark, a concentration of flakes (at 218 DBD), a hammerstone (at 219 DBD), a retouched flake, a biface fragment, a Plateau point base, large long bone fragments, and large pieces of charcoal. The lithics are primarily outside but surrounding the hearth. The large pieces

of charcoal and birch bark, and the absence of any fire-reddening of the soil suggests a cooler, slower burning fire more suitable for the smoking and drying of hides and/or meat. Since all other diagnostics associated with Stratum I are from the Kamloops horizon, the Plateau point is seen as intrusive and does not date the feature.

Feature 8 (Sq. G–Ssq.'s 11, 12, 15, 16) is interpreted as a possible roasting pit. This bowl-shaped depression is approximately 70 cm across and 20 cm deep at the center. The top of this feature corresponds to the contact between Strata I and IV. A Kamloops horizon point found at this contact in Subsquare 15 provides a relative date of 1,200 to 200 BP for the feature. The depression is filled with fire-altered rock and charcoal and contains a piece of unburnt mammal bone, 2 fish vertebrae and burnt bark. No fire-reddening was noted. Although it has an unusually small diameter, all other characteristics of the feature are consistent with its use as a roasting pit. The high concentration of organic debris found in subsquares 7 and 16 may result from the insulating vegetation used in the roasting pit and later discarded, while the charcoal concentrations noted in Subsquare 7 and 11 may be the scattered remains of a fire associated with pit use. Housepit 7 also has two similar features associated with a post-pithouse occupation (Vol. III, Chap. 5).

### **Artifacts**

Most lithic material from HP 9 is vitreous trachyte. This lithic identification is based on a petrographic analysis of similar materials from HP 7. All previous reports on the Keatley Creek Site and most other Interior Plateau studies identify this material as basalt.

Given a colluvial origin for most of the surface deposits, the spatial patterning of the artifacts was expected to reflect the random effects of natural depositional processes rather than cultural patterning. In general, the artifact distributions in the upper portions of Stratum I seem to meet these expectations and it is unusual to find more than 1 or 2 flakes or tools in each subsquare. However, at the bottom of the stratum clear evidence of a living surface is found. The most obvious artifactual evidence is a concentration of large vitreous trachyte flakes and tools in the northeast corner of the housepit in association with Feature 11. Tools found in this area include a chert unifacial scraper, a bifacial scraper, a quartzite spall scraper, a vitreous trachyte Plateau point reworked into a possible hafted scraper, a retouched flake, four biface fragments, four bipolar cores, a multidirectional core, a piece esquillee, and a hammerstone. The hammerstone, cores, and large flakes suggest primary stages of core reduction, while the scrapers are indicative of hide preparation. The point and bifaces reflect hunting and meat preparation activities.

A second cluster of small flakes and a small multidirectional core is found in Square I. Other tools found in Stratum I include three Kamloops points, three point tips, a Kamloops point preform, a notch, a utilized flake, two retouched flakes, two biface fragments, and a bipolar core.

Stratum I diagnostics include three Kamloops Horizon side-notched points, one possible Kamloops Horizon preforms or failed point, and the base of a reworked Plateau Horizon point. The Kamloops Horizon material suggests a date between 1,200 and 200 BP. (Richards and Rousseau 1987) for the lithic concentration (and features) found at the contact between Strata I

and IV. The Plateau point probably represents a broken point found and reworked during the Kamloops post-pithouse occupation.

### **Flora and Fauna**

In general, little or no charcoal, floral, or faunal material is found in the surface stratum. Presumably, the movement and subsequent weathering has destroyed any such remains washed into the housepit from the rim deposits. Almost all faunal material from this stratum was found at the contact with the underlying Stratum IV. Notable discoveries include a deer scapula (Sq. H–Ssq. 1), a deer tooth (Sq. D–Ssq. 9), a large bird bone (Sq. D–Ssq. 13), and a large mammal bone fragment (Sq. C–Ssq. 1). Although apparently unmodified, the deer scapula may have been used as a draw knife to beam skins (Smith 1900:420; Teit 1900:185-6). Birch bark rolls and burnt pine bark were associated with hearth Feature 11. More burnt pine bark was found in Square D (Ssq. 4).

### **Interpretation of Stratum I**

The presence of two hearths, a possible roasting pit, and a lithic work area at the bottom of Stratum I and the absence of an overlying roof deposit clearly indicates a short term use of the housepit depression as a campsite or special activity area. Similar post-pithouse occupations are common at the Keatley Creek site, with evidence of cultural activities above the final roof collapse in HP's 4, 6, 7, 8, 90, and 110 (Hayden et al. 1986). All of these other occupations contain lithic scatters, five contain hearths, and one has possible roasting pits.

The lack of any postholes or other structural evidence suggests that no shelter was constructed. The idea that these activities took place in the open

is further supported by the concentration of cultural remains on the sunnier, and consequently warmer and better lit, north side of the housepit depression. Moreover, Feature 8 is most likely a roasting pit, a feature not built inside housepits because of the large amount of debris and smoke generated with its use, while hearth Feature 11 would have been unsafe to use if built close to a wall.

The living surface is near the contact between Strata I and IV, while most of Stratum I appears to have been deposited by natural agencies subsequent to any cultural activity in the housepit depression. This evidence indicates that this occupation occurred shortly after the collapse of the last housepit roof, perhaps relatively early in the Kamloops horizon.

The two most likely scenarios for the origins of the Stratum I occupation are (1) use of the housepit depression as a spring hunting camp after the Keatley Creek Site was no longer used as a winter village, or (2) use of the depression as a special activity area by people wintering in housepit in other parts of the village.

The primary subsistence activities represented in Stratum I are hunting, hide preparation, and possibly butchering, with the few faunal remains suggesting deer as a common prey. Although meat may have been cooked in the roasting pit, bones are scarce and most ethnographic accounts maintain that the underground ovens were used primarily for cooking plant foods (Alexander 1992:124-9). Stone tool manufacture also occurred. These activities are consistent with those expected at a short term hunting and plant gathering camp. Evidence of both men's (hunting and tool manufacture) and women's (plant roasting and hide preparation) activities suggests occupation by a family group. Deer hunting and plant gathering in

this environment usually occurred in the early spring (Alexander 1992:154-8) at which time nodding onion, prickly-pear cactus and mariposa lily, could be collected nearby. The small size of the roasting pit (Alexander 1992:128) indicates that relatively little food was cooked and that the pit was more likely used by a small nuclear family than a large extended family group. The division of the band into smaller groups is common after the long forced stay in the winter village, reinforcing the idea of a spring occupation in late March–early April. The lack of overlapping activity areas points to a single, short term occupation. Deer and plants would probably be scarce in the immediate vicinity of a recently vacated village, so it is unlikely that such a hunting camp would have been established while the village was still in use.

Alternatively, the housepit depression may have been used as a special activity area by a family living in a housepit at the village. Tool manufacture, and hide preparation are activities that took place in the village during the winter months (Teit 1906:239, 1900:185, 1909a:477, 722-3). These activities produced a lot of debris and would be commonly conducted outside the housepit in milder weather. The old housepit depression could have provided some shelter from the cold winds while undertaking these outside activities. Plant roasting also produced a lot of debris (Alexander 1992:128-9) and would have been undertaken away from any heavily used area, but it is unlikely that any fresh plants would have been collected for roasting prior to late March. This scenario seems less likely than that of a hunting camp for two reasons: (1) the large group size typically occupying a winter house would have required a larger roasting pit to cook sufficient food for the entire family, and (2) the activity areas should overlap reflecting use in different seasons and years.



## **Stratum IV: Roof**

### **Soil Matrix**

The soil matrix of Stratum IV consists of a loosely compacted, very dark grayish brown (10 YR 3/3) sandy loam. Unlike Stratum I, cobbles are almost always present and comprise anywhere from 3% to 10% of the matrix volume. Pebble content varies between 10% and 40% with most subsquares containing more than 20%. Granules are also common (15% to 20%) and like most pebbles, they are usually angular and often appear to be fire-altered. This high clast content is partially responsible for the generally loose texture of the roof deposits. Charcoal is either absent or limited to less than 10 small scattered fragments in each subsquare. The number of fire-altered rocks (> 4 cm across) varies from 0 to 30 or more, but is typically between 1 and 10. Although frequencies vary considerably from one subsquare to the next, the numbers of clasts, charcoal fragments, and fire-altered rocks are generally more frequent in Stratum IV than in Stratum I.

The matrix is relatively homogeneous from top to bottom, though clast content increases or decreases with depth in some subsquares. Roots and cicadas have caused only minor soil disturbances. The thickness of the deposit varies from 3–20 cm, with a mean of approximately 11 (**Figs. 3, 4, 5, 6, 7, 8, and 9**). No discernable pattern can be seen in these variations. This description of the soil matrix is typical of roof deposits at the site and probably represents the final and relatively sudden collapse of the abandoned housepit roof. The unusually dark and organic nature of the deposits (in comparison to other roof deposits) may be partially explained by the development of an A horizon soil on the roof during the last occupation or on the surface of the depression after the roof collapse.

Stratum IV is not present in every subsquare. At the outer edges of the excavation the roof deposits disappear as the rim Stratum (VII) deposits are encountered. Although roof and rim deposits are generally different in content and appearance, the interface between the two is commonly indistinct (see section on rim deposits). A blurred boundary is to be expected since the two deposits have similar origins, primarily roof construction and dumping events from interior house cleanings.

### **Features**

No clearly discernable features were found in Stratum IV. During the initial test trench excavations, the excavators thought that they may have uncovered a hearth feature (misidentified as Stratum III) in Square C, Subsquares 12 and 16 (Jolly et al. 1987: 1). Subsequent excavations in adjoining subsquares produced no evidence of this potential feature (Iannone and Handly 1990) despite the fact that the trench profiles and floors plans show it extending into the area excavated in 1990. The only notable change in the neighboring Subsquares 9 and 13 (Sq. G) was a slight increase in the pebble and cobble content. The potential feature differed from the surrounding matrix in that it contained unusual artifacts including a fragment of a tubular steatite pipe, a common loon ulna, and fragments of fresh water mussel scattered among a high concentration of fire-altered cobbles. Given the context of the materials within a roof deposit, the irregular outline of the deposit, and the difficulty of distinguishing it from the surrounding matrix, it seems most likely that these materials do not represent a feature but merely materials cleaned from the hearths and floors and dumped on the roof of the housepit.

### **Artifacts**

Stratum IV contains only half as many modified artifacts as was found in Stratum I (surface) and most subsquares have two or fewer flakes. A hammerstone and spall tool found in Square G (Ssq.'s 12 and 15) were located close to the contact between Stratum I and IV and near Feature 8, and it is possible that these tools are part of an assemblage of similar artifacts from the post-pithouse occupation in Stratum I. Other artifacts include a mica ornament (Sq. D–Ssq. 13), two bipolar cores, two small flake cores, a notch, a utilized flake, 4 biface fragments, and a piece esquillee.

The most notable artifacts from the Stratum include three conjoinable fragments of a tubular steatite pipe found in Square C (Ssq.'s 1 and 12) near the interface between Strata IV and VIa. The pipe is ground and polished on the outside and the bowl fragment displayed a raised rectangular area with five incised vertical lines. Tubular pipes were the most common form in the past and chiefly used by men (Teit 1900:300-1, 382, 1909a:575; Smith 1899:154, 1900:428-9). This pipe form is usually associated with the Kamloops horizon (Richards and Rousseau 1987:46). The presence of a Kamloops horizon point (Sq. D–Ssq. 11) supports the conclusion that this stratum was deposited somewhere between 1,200 and 200 BP. A point stem (Sq. H–Ssq. 10) with contracting sides is interpreted as intrusive artifact from an earlier deposit.

A bone pendant was also found in Square C (Ssq. 9) in association with many fire-altered rocks.

### **Fauna and Flora**

Faunal remains are very uncommon in Stratum IV. Fish bones and large fragments of mammal bone are typically absent with most subsquares

containing only a few small fragments of mammal bone. Similar low frequencies occur in roof deposits from other housepits at the Keatley Creek Site (Kusmer 1987). Notable faunal remains include a few salmon bones, a canid metatarsal, three beaver incisors (Sq. C–Ssq. 7 and Sq. D–Ssq. 10), a deer scapula (Sq. C–Ssq. 7), fresh water mussel fragments (Sq. C–Ssq. 11 and 12), and a common loon ulna (Sq. C–Ssq. 12). A beaver incisor may have been used as a knife to carve or incise wood or stone (such as steatite and jade) (Teit 1900:182, 1909a:473-4, 1906:203; Smith 1900:416, 440, 1899:44), as an arrow point (Teit 1906:225, 1909a:519), or as a women’s gaming piece (Teit 1906:248, 1900:272-3, 1909a:564, 1909b:785; Smith 1899:153). The low and relatively even distribution of small fragments of ungulate bone in the deposits indicate little or no butchering and processing activities took place on the roof.

Floral remains are rare with only a few small scattered pieces of charcoal and no evidence of pine or birch bark.

#### **Interpretation of Stratum IV**

Stratum IV is interpreted as soil that was originally placed on the roof of the housepit during the occupations represented by floors in Stratum VIb and VIII. The more or less continuous distribution of soil across the house depression probably reflects the placement of soil over a post framework in the initial construction (see Teit 1900:192-5, 1909a:492-3, 1906:212-4; Boas 1891:633-35; Dawson 1892:7; Laforet and York 1981). The small localized and heterogeneous concentrations of fire-altered rock and/or faunal and lithic remains are interpreted as the subsequent dumping of household debris on the roof.

The matrix composition is similar throughout Stratum IV suggesting that much of the roof collapsed quickly when the underlying post framework collapsed due to fire, weathering, or the removal of posts and poles for other uses. No evidence of burnt posts or postholes were found during the excavation of Stratum VI or VIII (as in similar excavations in HP's 3 and 7). If the occupants of HP 9 constructed the roof using the ethnographic pattern, then the posts were most likely removed. Alternatively they may have constructed a roof similar to the A-frame used in lodge construction with the support posts placed outside the house depression. Irregularity in depth of the deposits probably results from the uneven removal of the posts and poles or the nature collapse of the structure and the funneling of deposits between still standing posts.

Some of the roof deposits were subsequently reworked. Gravity, wind, water, and animal activity would have moved some roof deposits from higher to lower slopes and reduced surface irregularities. Human activity, as represented by the post-housepit occupation in Stratum I, may have had similar effects and would also have further mixed the roof deposits by trampling and the excavation of a roasting pit and construction of two hearths. Any cultural patterning resulting from cultural activities conducted on the roof or from the storage of materials in the roof rafters during the housepit occupation may have been largely destroyed by the roof collapse, and subsequent cultural and natural events. This can only be determined by more detailed analysis than that undertaken for this report. Since the bone pendant, pipe fragments, loon bone, and dumping events are located at the bottom of Stratum IV, it seems most likely that they were deposited by the

housepit occupants who deposited the earlier Stratum VIII (floor) rather than those who deposited Stratum VIb (floor).

The low frequencies of lithic and faunal remains in Stratum IV suggest that few cultural activities took place on the roof during the housepit occupation, and that little secondary refuse was dumped on the roof from internal housepit activities. On the other hand, the underlying floor deposits are relatively thick, suggesting a long occupation. The unusually dark and organic nature of these roof deposits is most likely due to soil formation processes on a roof, which stood for an unusually long time.

#### **Stratum VI (Filtered Roof and Floor) and Stratum VIII (Floor)**

Strata VI and VII are the most unusual, and were the hardest to excavate and interpret of all of the living surfaces encountered in the large scale housepit excavations. In the center of the housepit (where the excavations began), the relationship between the two strata seemed relatively clear. For the most part, Stratum VI consisted of deposits that were similar in appearance and content to filtered roof deposits found in other housepits, that is, roof deposits that had filtered through an abandoned but still largely intact roof. The appearance of fish bone and flake concentrations in the middle of the stratum was somewhat problematic, but a strong argument was made for its interpretation as a temporary occupation of an abandoned housepit. The thickness of the deposit was attributed to the roof being repaired with additional soil during its reuse as a temporary shelter. Stratum VIII was generally slightly darker and more compact than VI, but was most commonly recognized by the sudden appearance of unusual high densities of fish and other bones. The

appearance and content clearly indicated a housepit floor, resting on top of an earlier roof deposit (Stratum XII) (**Figs. 3, 4, 5, 6, 7, 8, and 9**).

Problems of recognition and interpretation became more difficult as the excavations expanded toward the wall. In many parts of the housepit the cultural material in Stratum VIII largely disappeared approximately 1.5 m from the wall. In many cases, this change coincided with the appearance of a large cobble concentration in Stratum XII that rose up into Stratum VIII. Closer to the wall were found thick deposits with very high densities of cultural material (**Figs. 11 and 12**). Excavators responded to these variations in the strata in three ways:

- (1) Stratum VIII was seen to end where the rocks began and the dense deposits near the wall were excavated as part of VI (found at more or less at the same depth);
- (2) Stratum VIII was seen to rise up and over the rocks with most of the dense cultural material near the wall (that was found in the lower portion of the deposits) excavated as part of Stratum VIII; and
- (3) In areas where the cultural material was abundant even at the contact with Stratum IV, Stratum VIII was again seen to rise up and over the rocks, but only the lower half of the dense deposits were excavated as Stratum VIII.

Being aware of the difficulties in distinguishing between these two strata, excavators began recording the depths of individual artifacts from these strata. Cross-sections of the strata and cultural material using these depth recordings clearly indicated that Stratum VIII was continuous from the center of the housepit to the wall (**Figs. 11, 12, 13, and 14**). These plots also

strongly suggested that these deposits were often very thick near the wall (as much as 30 cm) with their upper surface often 20 cm higher at the wall than at the center of the housepit. Stratum VI deposits, on the other hand, were relatively thick near the center (generally 15 cm) but thinned to a few centimeters where Stratum VIII deposits formed a mounded surface.

This interpretation of the deposits is consistent with ethnographic data that suggests a 1.5 m wide sleeping platform was constructed around much of the inside wall of the housepits (Bouchard and Kennedy 1977:64). The thick deposits at the outer edge of Stratum VIII could represent cultural material cleaned from the floor and dumped under the 30 cm high benches. The portions of Stratum VIII with little cultural material may have been under the logs used to construct the inner face of the platform, while the mounds of rocks which are part of Stratum XII were left in place or dumped under the bench after leveling the rest of Stratum XII in preparation for the VIII occupation. Stratum VI deposits then accumulated largely in the center of the housepit where the old benches or mounded remains did not exist. This pattern is consistent with the interpretation of Stratum VI as a temporary occupation where little effort would be spent to clear the structure for reuse.

Other characteristics of the material assemblage are consistent with this interpretation of Stratum VI and VIII. The deposits along the wall are extremely variable with the frequency of cobbles, debitage, fish, charcoal, and fire-altered rock changing dramatically between levels and subsquares. Excavators report that artifacts were sometimes found amid clusters of rocks and charcoal. The matrix also contains pockets of very different soils, such as fire-reddened silts or sterile tills and silts. These patterns are consistent with



small baskets of material cleaned from the floor or hearth being dumped under the bench.

The variety and quantity of cultural material excavated from these strata was greater than that found in any other small housepit at the site. If this unusual assemblage was from both a temporary occupation and a long housepit occupation, it would be very difficult to explain. If however, all the high densities of material along the wall are from Stratum VIII, then Stratum VI would contain a relatively low variety and quantity of material and could be easily explained within the context of a temporary camp. Including all the dense material around the wall as part of Stratum VIII would also help to explain the distribution of many of the unusual items. Loon bones are unique to HP 9 and were found only in association with deposits excavated as Strata IV, VI, and VIII. Six dentalium shells, uncommon at the site, were only found in deposits excavated as Stratum VI (Sq. H–Ssq. 16, Sq. I–Ssq. 1) and VIII (Sq. H–Ssq. 12, Sq. I–Ssq. 9, Sq. K–Ssq. 8, Sq. D–Ssq. 11). Large pieces of worked antler were also associated with Stratum VIII (three pieces, two from Feature 6 fill associated with VIII) and VI (Sq. C–Ssq. 5). If the finds along the wall were considered part of Stratum VIII, then with the exception of the loon from the roof, all of these items would have been from Stratum VIII. All of the high fish bone counts would also be from Stratum VIII.

If this interpretation is correct, then it becomes very difficult to analyze the cultural material from these two strata as separate assemblages, since materials excavated along the wall and catalogued as Stratum VI are actually from Stratum VIII. They could be re-catalogued for future analyses but this work was not possible prior to this report. Stratum VI does fortunately have a relatively low density of materials, so that in examining the two strata as a

single assemblage Stratum VI largely becomes background noise in the analysis of Stratum VIII. On the other hand, it is difficult to make anything more than general statements about the Stratum VI assemblage. These two strata are discussed below in more detail.

### **Stratum VI: Filtered Roof and Floor**

#### **Soil Matrix**

The soil matrix is a loosely compacted, dark brown (10 YR 4/3) sandy loam. Unlike other previously mentioned strata, Stratum VI sometimes has a mottled appearance due to cicada activity that has moved a lighter colored soil into the matrix from lower strata. Cobbles are usually present and although they can comprise anywhere from 1–20% of the matrix by volume, they generally constitute less than 5%. Both pebble and granule content ranges from 5–40%, with most subsquares containing 10–20% of each. Although the number of clasts in each subsquare often varied from top to bottom there was no apparent pattern to these variations. Fire-altered rock (> 4 cm) is often absent, and frequencies are rarely higher than five per subsquare. Higher counts of up to 21 appear to be restricted to deposits reclassified as Stratum VIII. Charcoal is usually present as a thin scatter of small flecks but it is absent from some subsquares. Subsquares containing a few large pieces (2 or 3 cm across) also seem to be from Stratum VIII. In general Stratum VI is lighter in color, more mottled, contains more charcoal, and includes less fire-altered rock, cobbles, pebbles, and granules than Stratum IV (roof). Nevertheless, most characteristics of Stratum VI are those of a roof deposit (Hayden et al. 1986, 1987).

The presence of a relatively fine textured roof capped by a coarser textured roof is common in housepit deposits at the Keatley Creek Site. The finer deposits have been termed "filtered roof" (Vol. III, Chap. 4, and 5). They are interpreted as roof material that filtered through the wooden superstructure of the housepit prior to the final collapse of the roof. The matrix is generally finer in nature because the larger clasts placed on the roof during initial construction and subsequent dumping events were prevented from falling to the floor by the unburnt or undecayed poles and branches in the roof framework. The matrix of Stratum VI is consistent with a filtered roof deposit.

The cultural remains clearly indicate the presence of a living surface or floor within Stratum VI (see following sections). The living surface seems to be a very thin deposit sandwiched approximately mid-way in this filtered roof stratum. The thickness of the Stratum VI deposits varies from 6 to approximately 25 cm. All thicker deposits (up to 38 cm) of Stratum VI at the outer edges of the excavation have been reclassified as Stratum VIII. But, thick or thin, the living surface is still approximately in the center.

In most cases the living surface can only be recognized by the concentration of cultural remains lying horizontally across the subsquare. Consequently, where the density of cultural material is very low, the floor is difficult to isolate. In a few subsquares the artifacts are in a deposit of 1–3 cm that is darker, more compact and finer than the surrounding matrix and the living surface is easier to recognize. Deposits above and below the floor generally contain little, if any, cultural material.

In the 1990 report, Stratum VI was subdivided into three parts: VIa corresponded to the uppermost filtered roof deposits, VIb corresponded to

the floor deposits, and VIc corresponded to the lower filtered roof deposits. Some attempt was made in 1990 and 1991 to excavate this stratum according to these three designations. Unfortunately, the floor deposits were often difficult to distinguish from the surrounding filtered roof and the arbitrary excavation levels within Stratum VI did not always correspond to these three subdivisions. In order to determine which excavation level in any subsquare corresponds to the floor deposits, it is sometimes necessary to examine the recorded depths of individual faunal and lithic remains.

Like Stratum IV, these filtered roof deposits are not present in every subsquare. At the outer edges of the excavation the filtered roof deposits blend into the rim slump deposits and disappear. This phenomenon is most evident along the north and south sides of the excavation. The boundaries are further confused by the activities of rodents whose skeletal remains and burrows filled with pacoen seeds (*Lithospermum* spp.) sometimes occur near the walls (Sq. D–Ssq. 5, Sq. H–Ssq. 10, Sq. G–Ssq.14).

### **Features**

Two features were encountered at the bottom of Stratum VI: #1—a possible collapsed, rock retaining wall and #6—a large storage pit. Neither feature appears to be associated with the cultural activities represented by Stratum VI.

### **Artifacts**

Flakes are generally more numerous in this stratum than Stratum I or IV. Almost all subsquares contain at least one flake, with an average of two to five flakes. Vitreous trachyte dominates the assemblage but some jasper and

chert flakes are also present. Most of the flakes are lying horizontally on the floor in the middle of these deposits.

An early Kamloops horizon point (ca. 1,200 BP) was located at the bottom of the stratum (Sq. H–Ssq. 9) where it came into contact with Stratum VIII. Since the living surface in Stratum VI is located in the center of the deposit, this point probably does not date the floor. It may date the bottom of the filtered roof or, more likely, the top of Stratum VIII (Floor). Two Plateau horizon points were found in deposits near the south wall (Sq. B–Ssq. 3, Sq. F–Ssq. 5) that have been reclassified from Stratum VI to a dump in Stratum VIII.

Two notable artifacts are clearly from Stratum VI floor: a hide endscraper (Sq. G–Ssq. 1) and a chert, bifacial drill (Sq. H–Ssq. 9). The most notable artifacts in the Stratum VI assemblage were a ground nephrite adze (Sq. K–Ssq. 8) and a distal fragment of a ground nephrite adze (Sq. D–Ssq. 6) both found at the contact between Stratum IV and VI. It was most likely deposited by occupants of either floor VIb or VIII. A similar adze fragment was found in the roof of HP 3 (Vol. III, Chap. 4).

### **Fauna and Flora**

In Stratum VI, few subsquares contain more than 10 faunal remains and only a few of these remains are from the filtered roof deposits that typically produce only one or two small fragments of mammal bone/subsquare. Most of the mammal bone fragments and all of the fish remains seem to be from the floor deposits. Based on the faunal analyses from other housepit excavations, most if not all of the fish are salmon and probably much of the mammal is deer (Kusmer 1987). Most of the larger identifiable remains were

found along the wall in deposits reassigned to Stratum VIII. Although difficult to assess without re-cataloguing, it would appear that the frequencies of fish and other bone on the floor in Stratum VI is similar to that found on other housepit floors at the site (*Ibid*).

No birch or pine bark was uncovered in Stratum VI and the scattered wood charcoal did not exceed 4 cm in size.

### **Interpretation of Stratum VI**

The top (VIa) and bottom (VIc) portions of Stratum VI are interpreted as filtered roof deposits resulting from soil falling through the wooden superstructure of a standing, and largely intact, but decaying pithouse roof. These filtered roof deposits are unlike any known floor deposits. While floor deposits are often compacted by trampling, Stratum VIa/c has a loosely compacted matrix. The high clast content is also atypical of floor deposits that are presumably cleared of most larger clasts to provide an even living surface. Like roof deposits where weathering destroys many organic remains, Stratum VIa/c has a low density of mammal bone and no fish bone or floral material. On the other hand, refuse left on the floors is deposited in a more protected environment with the result that floor deposits contain many fish remains. The lack of features and the low density of lithics with no discernable distribution pattern also argues against use of Stratum VIa/c as a living surface. The characteristics of Stratum VI, like roof deposits, seem to reflect the unintentional redistribution of lithic material collected during house cleanings and dumped on the roof and the mixing of roof deposits caused by the uneven collapse of the roof. In fact, all roof deposits contain

similar evidence but the relatively low frequency of larger clasts suggests a filtered deposit.

The presence of a floor deposit (VIb) in the midst of the filtered roof is indicated by:

- (1) the sporadic occurrence of a thin deposit of darker, finer and more compact soil;
- (2) artifacts lying horizontally at approximately the same depth across a subsquare;
- (3) the increased frequency of mammal bone and lithics; and
- (4) the presence of fish bones, some of which are articulated.

Along the wall, floor-like deposits with high densities of lithics, mammal bone and fish bone (only some of which were lying horizontally) were initially identified as dump deposits in Stratum VI, but have been reinterpreted as Stratum VIII.

The build-up of filtered roof deposits at the bottom and top of Stratum VI suggests that the housepit was allowed to slowly decay both before and after the occupation represented by the Stratum VIb (floor) deposits. Unlike other housepits at the site, there is no evidence of burnt bark, planks, and poles to suggest that this housepit was burnt. The presence of rodent burrows and mandibular and skeletal elements in three squares lends credence to the claim of a long abandonment with a standing roof.

The relatively thick filtered roof (VIa) and roof (IV) deposits above the floor (VIb) indicates that most of the original roof was still standing during the occupation. In fact, the combined depth of Stratum VI and IV suggests an unusually thick roof with depths varying from 20–43 cm (median = 30). This evidence raises the possibility that minor repairs may have been carried

out and some additional material was placed on the roof during the VIb occupation.

The available evidence suggests that the Stratum VIb (floor) deposits represent a relatively short occupation. The general lack of organic staining, a relatively thin floor deposit, low frequencies of tools and bone, and the absence of any associated pit or hearth features indicate a short stay. The low frequency of debitage and the lack of small debitage on the floor and roof also suggest that little, if any, lithic reduction took place during this occupation. This evidence suggests that Stratum VIb may not represent a typical winter occupation but rather a short term hunting camp like that described for Stratum I.

### **Stratum VIII: Floor**

#### **Soil Matrix**

The matrix of Stratum VIII is a moderately compacted, very dark grayish brown (10 YR 3/2) silty loam. Like Stratum VI, it is sometimes mottled with lighter colored soil due to cicada activity. Cobbles generally occur in about the same frequency as in Stratum VI, i.e., less than 5% of the matrix by volume. However, in some subsquares the percentage of cobbles rises to 40–50%. These localized occurrences are associated with shallow pits (see Feature 10 below), underlying rock features (see Feature section in Stratum XII), and dump deposits around the margin of the floor. Pebble content varies from 5–40% as in Stratum VI, but the average in Stratum VIII is slightly higher with most subsquares containing 10–30%. Granules, on the other hand, are lower in Stratum VIII with most subsquares commonly containing 5–10%.



The frequency of fire-altered rock (> 4 cm) is generally low with many subsquares containing none, and most with less than 5. Higher frequencies occur in the northeast and southwest corners of the housepit (**Fig. 15**). Charcoal typically consists of a thin scatter of small flecks, though a few larger pieces were found in association with the fire-altered rock concentrations.

The overall impression is that Stratum VIII is darker, more compact, and contains more cobbles and pebbles, and fewer granules than Stratum VI. The thickness of the deposits varies from about 10 cm in the center of the housepit to as much as 30 cm at the wall.

Although rodent activity is evident in Square D (Ssq. 2 & 12), Stratum VIII generally contains much less rodent disturbance than Stratum VI.

### **Features**

Stratum VIII contains evidence of two hearth features, both in Square G. Feature 4 consists of a 5 cm thick lens of fire-oxidized and reddened soil in underlying Stratum XII. As discussed in the description of the hearth in Stratum I, this fire-reddened lens probably represents physical and chemical changes to the underlying stratum, rather than an intentionally excavated pit. The original hearth may have been larger than the 58 cm diameter area of fire-reddening that is largely intact in Square G–Subsquares 5, 6, and 9, but has been obliterated by a depression in Subsquare 10 (see Feature 10 below).

A thin (2 cm) layer of black humic soil over the fire-reddening may also be a remnant of the hearth, though it seems centered further to the south than the fire-reddening. The additional 3–6 cm of Stratum VIII capping the

feature suggest that the hearth was used early in the occupation. Although fish bones and lithics are common in deposits above this feature, only seven calcined bone fragments are clearly from the feature. No fire-altered rock and only a few small flecks of charcoal were found in association, suggesting that most of the hearth debris was cleared away by the housepit occupants.

The second hearth (Feature 7) is indicated by a patch of fire-reddened soil in Subsquare 1 extending 7 cm into Stratum XII (**Fig. 4**). The fire-reddening undoubtedly extended into the test trench and Subsquare 5 but it was not noted during excavation. The lack of charcoal and fire-altered rock above the fire-reddening indicates that these hearth remains were also cleared from the housepit floor before subsequent occupations. The smaller area of fire-reddening (30 to 60 cm across) suggests that this hearth was smaller than Feature 4, though house cleaning may have removed part of the fire-reddening.

Feature 3 is a small, shallow, bowl-shaped pit in Square H (Ssq.'s 9 & 13). It is 25 cm across and extends 8 cm into the underlying Stratum XII. The pit is filled with dark deposits containing many rocks and some fish bone similar to the floor deposits that cap the feature. This pit is too shallow for a posthole but may have been used as a small cooking or boiling pit.

The largest feature in the housepit is a large bowl-shaped storage pit (Feature 6) abutting the south wall in Squares D and H (**Figs. 2, 4, 6, and 9**). As is often the case with large pit features, the stratigraphy around the pit is complex and sometimes hard to interpret. Stratum X (floor) deposits end at the edge of the pit, leading excavators to speculate that the pit was initially built by Stratum VIII occupants who excavated through floor X (Iannone and Handly 1990). However, the sterile deposits seem to be mounded up around

the edge of the pit and the floor X deposits ride up and over this raised rim, indicating that floor X was deposited after the pit was excavated. Stratum X deposits also seem to extend around the western edge of the pit into an alcove in the wall created by pit construction. Therefore, the pit was probably originally excavated by the occupants of Stratum X (floor).

The pit was subsequently filled with a dark brown, loosely compacted, sandy loam (Fill Unit 2-B). This fill unit contained three layers that differed in their clast content but were difficult to distinguish in profile or during excavation. Therefore, this fill was excavated as a single unit using 10 cm arbitrary levels. The upper three levels (corresponding to the top layer) contained many large cobbles and boulders (20%) and 20% pebbles and granules. The middle layer (Level 4) contained only 10% cobbles but 30% pebbles and granules, while the bottom layer (Levels 5-7) had 5% cobbles and 25% pebbles and granules.

In general, Fill Unit 2-B contains a lot of fire-altered rock, a few small pieces of mammal bone (some calcined), and a few flakes (mostly large), but no diagnostics or tools. Excavation levels corresponding to the uppermost layer also contained a large distal mammal phalanx, while the middle layer included a largely intact mussel shell and a piece of worked bone (possibly a needle fragment). Fish bone is common throughout but is exceptionally high (hundreds of ribs and vertebrae) in the lowest layer that also contained a few birch bark rolls, a mussel shell fragment, and a small mammal phalanx. The high density of fish remains at the bottom suggests that the pit was originally used to store fish, perhaps with birch bark used to wrap the fish and/or line the pit. The type, quantity, and distribution of faunal remains in

this pit is similar to that noted in many other storage pits at the site (Kusmer 1987).

These deposits appear to represent the rapid filling of the pit with floor and hearth deposits cleaned from inside the housepit. This is also a common practice in other housepits (Hayden et al. 1986). The pit may have been filled in and abandoned, either in favor of basket storage, or the use of an external cache pit and/or because of the decomposition of fish stored in the pit. The cache pit just beyond the housepit rim may have been used as an alternate storage area. A test of this cache revealed a V-shaped pit (4.4 m x 4.5 m across and 0.4 m deep at surface) filled with debris, including: deer and other mammal bones; fire-altered rock; and a few flakes, but no fish (Vol. III, Chap. 11.9). The lack of fish suggests that it may have been used to store other foods or goods.

Along the western edge of Feature 6, collapsed roof deposits (Stratum XII) seem to over-ride this pit fill, suggesting that the pit was filled in by floor X occupants prior to their final housepit abandonment. The cultural material in Fill Unit 2-B should therefore be the product of the Stratum X occupation.

After the roof collapse, a second smaller pit was excavated into the center of these deposits removing most of the roof deposits (XII) and some of Fill Unit 2-B. This practice of using the softer and more easily excavated pit deposits for a new pit was also noted in other housepits (Vol. III, Chap. 5). This second pit was also filled in though it appears to have remained open for some time judging by the yellow loam deposits that seem to have accumulated prior to the pit being filled with a very rocky matrix. The dark brown, silty loam matrix was notably rockier and less compact than the

surrounding matrix, with 10% cobbles, 30% pebbles and granules, and a lot of fire-altered rock. The pit was wide near the top but quickly narrowed to 50 cm across. The fill contained few fish bones, mammal bone fragments or flakes. Notable finds include a beaver incisor and a Kamloops horizon point.

The filling of this pit left a shallow depression in the floor that was initially capped with a yellow brown loam then filled with a soft, dark, silty loam. Cultural material from Fill Unit 1 includes numerous fish, a few mammal bone fragments, a possibly canid bone, a few birch bark rolls, a beaver incisor, a small worked antler fragment, and a few shell fragments. At the top of the deposit, patches of orange soil and charcoal indicative of the dumping of hearth materials were found. The fill was capped by a concentration of large rocks and fire-altered rock, and included a very long piece of antler split lengthwise and beveled at the end. A Kamloops horizon point was also found near the top of this pit fill.

A thick deposit of Stratum VIII caps the pit fill indicating that Fill Unit 1 and Fill Unit 2-A were deposited by the residents of Stratum VIII (floor) but that the pit was not used in later stages of this occupation.

The initial pit excavation was approximately 130 cm across and 80 cm deep. Similar large storage pits were found in two large housepits (HP's 1 and 7) while pits half the size were noted in medium and small sized housepits (HP's 3, 12, 90, and 110) (Hayden et al. 1986, Rousseau & Handly 1989). This evidence suggests that this pit is unusually large for the size of this house.

Feature 10 (**Fig. 20**) is a shallow (< 10 cm), circular depression approximately 55 cm across. The pit has a flat bottom and although it has a gentle slope on the western edge, it is steeply edged on the east where it

cuts into Feature 4 and Stratum XII. The top of the depression corresponds to the contact between Stratum XII and VIII. The fill matrix contains many rounded cobbles (40%) and is darker and less compact than the surrounding Stratum XII. No fire-altered rock or other cultural material was found in the depression.

A similar rock filled depression (50 cm across) was noted in Square D (Ssq.'s 13 & 14). Again the matrix is dark and filled with rock (30% cobbles and 20–30% pebbles), but contains no cultural material. The interpretation of these depressions is problematic. The lack of cultural material indicates that they were not casually filled with deposits cleaned from the housepit floor as are most pits. This suggests that the pit was designed to hold the rocks found in the pit. No evidence of a fire or food is present to suggest cooking or drying. My only suggestion is that they were used as a platform for wet objects such as large baskets containing water or soaking hides.

### **Artifacts**

Debitage is frequently absent from Stratum VIII and when present, rarely exceeds three flakes per subsquare. Most subsquares containing 5 or more flakes cluster along the wall. The one exception is a cluster near the hearth features (**Fig. 16**). Almost all of the flakes are black vitreous trachyte. In general, thedebitage density is similar to that in Stratum X (floor), but may be slightly lower than that in Stratum VIb (floor).

Two Kamloops points from the cache pit fill (FU2-A, FU1) can be used to date this occupation to 1,200 to 200 BP. A small point tip from Square D (Ssq. 15) may be used to support the claim for a Kamloops floor and an early Kamloops point from the bottom of Stratum VI (Sq. H–Ssq. 9) may also date

the Stratum VIII occupation. Four Plateau horizon points (Sq. D-Ssq. 8, Sq. F-Ssq.'s 1 & 5, Sq. B-Ssq. 3,) and a Shuswap horizon point (Sq. G-Ssq. 7) are interpreted as tools from an earlier occupation.

Over 100 modified artifacts were excavated as part of Stratum VIII or VI. Subsquares containing five or more modified artifacts tend to cluster in more or less the same locations as the debitage (**Fig. 17**).

The most common modified artifacts are retouched flakes (30), bipolar cores (13), and utilized flakes (15). Various forms of points (8), scrapers (11), and bifaces (9) are less common. Other cores (3), notches (3), piercers (1), drills (2), denticulates (1), and piece esquilee (2) occur infrequently. Although it is difficult to make accurate assessments at this time, I estimate that 80% of these tools are actually from Stratum VIII.

### **Fauna and Flora**

Fish bone counts are exceptional high in Stratum VIII. It originally appeared that dense concentrations were also found in Stratum VI, but cross-sections of the soil profiles (**Figs. 11, 12, 13, and 14**) indicate that these concentrations are actually part of Stratum VIII. The combined figures for Stratum VIII and VIb provide a good idea of the unusually large quantities of fish in Stratum VIII, although perhaps 10% of these fish are actually from the floor in Stratum VIb. Together, Stratum VIb and VIII produced over 3,300 fish bones, approximately five times the frequency seen in Stratum X (floor) and ten times that seen in other stratum. Despite their larger floor area, floor deposits from other housepits at the site produced much lower frequencies, e.g., HP 12 had approximately 30, HP 30 had 560, and HP 7 had 2,400.

In approximately 1\3 of the subsquares, fish bones were either absent or present in low frequencies (< 10/subsquare) (**Fig. 18**). Much higher frequencies were found in 15 subsquares, including two small areas in Square G (Ssq.'s 12, 5 & 6), most of Square D, and a few adjoining subsquares in Squares C (Ssq. 2) and H (Ssq. 6, 9 & 13). These higher concentrations seem to represent both activity areas and dump deposits. Some articulated fish bones in Square D were associated with ochre staining.

Non-fish bone are relatively abundant in Stratum VIII, with much higher frequencies in Stratum VIII than in other floor deposits in HP 9 or in other housepits (**Fig. 19**). Nevertheless, the combined frequencies of non-fish bone from Stratum VIII and VIb are less than 10 for approximately 3/4 of the subsquares. Burnt mammal bone is uncommon. Notable mammal finds include as many as seven beaver incisors and two molars, one canid tarsal, six artiodactyl teeth, and one femur.

Big horn sheep are exceptional abundant in HP 9 and seem to be largely associated with Stratum VIII. Four teeth fragments are clearly from Stratum VIII, 8 more teeth fragments and a phalanx were found in deposits reclassified from Stratum VI to VIII (Sq. G), and a carpal and 3 horn fragments were located in a small depression at the contact between Stratum XII and VIII (Sq. D–Ssq. 12).

Large pieces of worked antler are also unusually common in HP 9, with some pieces associated with Stratum VIII. A large fragment of worked antler (probably elk) was found at the contact between Stratum VI and VIII (Sq. C–Ssq. 5), while a large elk antler fragment recovered from pit (Feature 6) deposits associated with Stratum VIII was split with one end worked into a possible wedge (a second artiodactyl antler fragment was found in the same



deposits). Nineteen charred and incised bone fragments were also excavated from Stratum VIII.

The only common loon (*Gravia immer*) bones from the site were found in HP 9. All may be associated with Stratum VIII. One ulna was found in F.U.1 of Feature 6, a deposit associated with the Stratum VIII occupation. An ulna and fibula were also excavated from deposits reclassified from Stratum VI to VIII. Finally, an ulna was recovered from Stratum IV (roof) in the same dump as the steatite pipe fragments and may also have been deposited during the Stratum VIII occupation.

Six dentalium shells (Sq. D–Ssq. 11, Sq. H–Ssq.'s 12 and 16, Sq. K–Ssq. 8, Sq. I–Ssq.'s 1 & 9) and two shell beads (Sq. I–Ssq. 1, Sq. F–Ssq. 3) were found in Stratum VIII, with all but one located close to the wall. No floor at the site has produced so many shell ornaments.

The only notable floral remains, birch bark rolls, were found in the pit fill of Feature 6.

### **Interpretation of Stratum VIII**

Based on the horizontal placement of artifacts and bones, the low frequency of flakes, the abundance of fish and bone remains, and the presence of hearths and pit features, Stratum VIII is clearly a floor deposit. The Kamloops horizon points associated with this stratum suggest the floor was occupied somewhere between 1,200 and 200 BP. Ethnographic accounts suggest a housepit of this size would have a resident population of approximately 15 people (Teit 1900:192) or three nuclear families.

The foundation for these floor deposits is unusual. In most housepits at the site, all earlier floor, roof and rim spoil deposits were removed from the

housepit prior to a new occupation, with earlier floors only present as small remnants at the outer edges of the floor. Multiple floors are only present in HP's 47, 101, and 110—all small housepits. In HP's 110 and 47, the lower floor has no capping roof deposits. Both of these probably date to the Plateau horizon, leading to speculation that Plateau housepits had no, or little, soil on the roof (Rousseau and Handy 1989). This may explain why underlying Stratum XII, a Plateau roof deposit is also relatively thin, and suggests that floor VIII residents removed little soil from the depression. Large rock accumulations associated with Stratum XII (roof) are either largely intact roof deposits or roof deposits cleared from the center of the floor and deposited under the benches. Perhaps the unusually high cobble content discouraged normal removal of underlying deposits. The soil matrix of Stratum VIII also contains an unusually high frequency of cobbles, possibly related to the failure to remove these underlying rock accumulations (**Fig. 20**).

Small pockets of softer, finer sediments were noted in Square G (Ssq.'s 3, 7, 11 & 12) in association with a large rock accumulation. These pockets (ca. 10–15 cm across and 5 cm deep) were interpreted by one excavator as possible alluvial deposits. Similar pockets were also found in Stratum VI in the same general area. Such alluvial deposition would imply that water flowed into the housepit and over the floor and filtered roof while the roof was still standing. Perhaps this area of the roof was less secure and allowed water, captured in the shallow basin to the west of the housepit, to drain into the structure. This phenomena has not been noted in other housepit deposits.

The only evidence of hearth features is the fire-reddening in underlying Stratum XII (Features 4 and 7). The debris from the hearths that produced this reddening appears to have been cleared away in later Stratum VIII occupations. In fact, clear intact hearth features are rare at the site. One exception is associated with a Plateau horizon floor in HP 110, and may be used as an example of what the hearths in HP 9 looked like before cleaning. This basin-shaped hearth is 75 cm in diameter and is topped with 7–13 cm of black soil mottled with ash and fire-reddened deposits. The soil contains charcoal, several pieces of fire-altered rock, calcined bone fragments, a leaf-shaped biface, and a few flakes (Rousseau and Handly 1989). Under this deposit is 3–7 cm of fire-reddening similar to the deposits found in Stratum VIII.

This evidence leads to the conclusion that the hearths may have been cleared away (and perhaps subsequently relocated) on a regular basis. Perhaps the hearths were not used every day and were removed when not in use to provide more general floor space. No hearth features were found near the top of the deposits, suggesting that the last hearth was cleared prior to abandonment. Cultural debris may seem to cluster around older hearth features because subsequent hearths and associated activities would probably occur in much the same location. This claim is supported by the fact that Features 4 and 7 are close together.

Relatively few stone tools or flakes were found in or on the Stratum VIII floor, in the storage pit (FU1 & FU2-B), or on the associated roof (IV & VIa/c) indicating that little lithic reduction, stone tool manufacture or re-sharpening activities took place in the housepit or on the roof during this or the subsequent Stratum VIb occupation (**Figs. 16 and 17**). (Housepits 3, 7,

and 12 had higher debitage frequencies and modified artifacts were more common in HP's 3 and 7). The infrequent occurrence of points and scrapers suggests that the housepit was only occasionally used as a staging area for hunts and a base for hide working. The low frequency of bifaces also implies that little butchering and meat drying occurred in the housepit. The scrapers and abraders are near the floor margins, suggesting they may have been stored out of the way.

Artifacts in roof Stratum VI and IV are most likely to have been deposited by residents of Stratum VIII. The combined assemblages of Strata VIII, VII (see section on Stratum VII), IV, VI, Fill Unit 1, and Fill Unit 2 includes: three pipe fragments, a bone pendant, two pieces of jade, four ground bone fragments, 19 incised bone fragments, four loon bones, mussel shell fragments, seven beaver incisors, two large pieces of worked antler, six dentalia shells, two shell beads, and two large pieces of worked antler. The pipe fragments, jade, bone pendant, and dentalia may be used to infer a high social status for the residents, since these items either took a long time and much effort to make or were acquired through trade from the coast. Although the number of these objects is low, their frequency and diversity seems unusually high compared to assemblages from other small housepits at the site. The large antler pieces stand out as the most unusual items, and suggest some specialized antler processing activities for the residents. Perhaps the two unusual cobble-filled pits (Feature 10) are related to such activities. The loon bones found in association with the Stratum VIII occupation are the only such finds from the site further suggesting some specialized activities.

The density of fish remains, and to a lesser degree non-fish bone, are higher in Stratum VIII than in any other housepit floor at the site. Concentrations are noted near hearths 3 and 7, beside Pit 6, and in association with rock accumulations in Square D. The concentrations near the pit and hearth probably represent activity areas for cooking and storage of salmon. Concentrations in Square D, some distance from Pit 6 are more problematic, but may represent dumping of debris (possibly under a sleeping platform) or possible eating areas. The high bone frequencies may be indicative of a relatively long occupation, but the low debitage frequency suggests the opposite. Alternately the high bone frequencies suggest greater use of indoor caches for storing food, a greater wealth of food, or cleaning practices where debris was more commonly dumped under benches than outside.

The concentrations of fire-altered rock in Squares C and H are indicative of dumping events from a hearth, while the concentration of cobbles in Square D indicates a dumping of general floor material or possibly storage of rocks for future use (**Fig. 15**).

According to ethnographic accounts, a wooden sleeping platform (0.3 m high and 1.5 m wide) was constructed around the outer edge of the floor (Bouchard and Kennedy 1977:64). If such a platform was constructed around the entire perimeter of the housepit during the Stratum VIII occupation, then the only open space would be a 2 m circle in the middle. This circle would not provide enough open space for 15 people to cook and conduct other activities. On the other hand, if each person slept with their head to the wall, and used only 50 cm of the bench, then only about half (7.5 m) of the circumference would have been needed for the sleeping

platform, and a large communal activity would be available along the remaining sections of the wall. Ethnographic accounts also describe the floor being covered with branch or mats that were cleared out on a regular basis.

The distribution of cultural material on floor VIII is consistent with that expected for a housepit with a bench around half the perimeter. Most of the fish, mammal bone, bone artifacts, debitage, modified stone artifacts, large pieces of charcoal and fire-altered rock are concentrated on the northeast side and southwest corner of the floor within 1.5 m of the wall. All clearly identified dumping events are also in this area. These dense and mounded deposits of debris would be in the way if they were dumped on the open floor but could be easily and expediently concealed under a platform. Therefore, I propose that a platform was constructed along the wall in these portions of the housepit and that the cultural material found in this area results primarily from materials lost, stored or dumped under the platform and do not reflect primary activity areas (**Fig. 21**).

Other than the fish concentrations around the cache pit, densities of cultural material are generally low throughout the rest of the housepit. This scenario would suggest that few artifacts or bones were left in the common area where presumably many of the activities took place, possibly because they were removed with the mats and boughs used to cover the floor. This finding is not inconsistent with findings from other housepits at the site where high frequencies of cultural material are rarely found in the center of the housepit. Given this patterning, expectations should be for low densities in other parts of the housepit that were used as common areas.

The lack of any large pieces of charcoal or charred beams indicates that this structure was not burnt down, while the absence of postholes suggest

that any posts used to support the roof were set outside the housepit depression or removed for another structure.

Flake densities on the Stratum X floor are similar to those on Stratum VIII floor i.e., often absent, and rarely greater than three per subsquare. This differs from the Stratum VIb occupation, which has at least one flake in each subsquare, with averages of 3–5 flakes. This evidence suggests that the lithic use and discard practices were similar during the Strata VIII and X floor occupations but supports the idea that the Stratum VIb floor differed and may represent a hunting camp occupation. The lowest flake densities were in the roofs (Strata VIa/c, IV, VII) indicating little discard and few cultural activities on the roof.

## **Stratum XII: Roof**

### **Soil Matrix**

Stratum XII is generally a loosely compacted, dark brown (10 YR 3/3) sandy loam but the color can grade into olive brown (2.5 YR 4/4). An unusually high frequency of cobbles occurs in this stratum. Although quite a few subsquares contain less than 5%, large rock accumulations can elevate estimates to 20–50%. The frequency of small clasts is the same as that found in Stratum IV (roof) with granules constituting 10–20% and pebbles varying between 10% and 40% but generally higher than 20%. The higher pebble concentrations seem to vary independently of the cobble accumulations. Cicadas have caused minor soil disturbances by bringing darker soil into the stratum from Stratum X (floor).

Fire-altered rock (> 4 cm) is generally absent from this stratum. However, high frequencies (30-50 pieces/subsquare) of fire-altered rock

occur in a few subsquares of Square H (Ssq. 6) and Square D (Ssq.'s 15 & 16) and moderate counts (10-15 pieces) are encountered in the northeast corner of Square C (Ssq.'s 6, 9 & 14) and in Square H (Ssq. 11).

Charcoal was generally absent or present as small flecks. Larger pieces (2-4 cm across) were only found along the western wall (Sq. H–Ssq.'s 7, 12, 16; Sq. I–Ssq.'s 1, 9, Sq. F–Ssq. 3, Sq. B–Ssq. 3) and in the northeast corner of Squares D (Ssq.'s 9, 13, 14) and C (Ssq.'s 5, 6, 9, 10, 13,14). Although these charcoal- rich deposits were excavated as part of Stratum XII, the excavation of subsquares close to the wall strongly indicates that these deposits were dumped along the edge of the housepit wall during the Stratum X occupation, that Stratum XII deposits were very thin or absent above these dumps, and consequently, that the charcoal rich deposits should be considered part of Stratum X. In general, the frequency and distribution of fire-altered rock and charcoal in Stratum XII is similar to that found in other roof deposits.

In subsquares adjoining the wall, Stratum XII is absent or present in only part of the subsquare (Sq. D–Ssq.'s 1, 2, 3; Sq. L–Ssq.'s 4, 8, 12, 16; Sq. K–Ssq.'s 4, 8, 12; Sq. B–Ssq.'s 6, 7; Sq. F–Ssq.'s 3, 6). This patterning is due to the configuration of the wall which allowed a larger living surface in Stratum VIII (floor) than in Stratum X (floor). Roof deposits are also absent or thin over the storage pit where they were removed when the pit was re-excavated during later occupations.

Stratum XII (roof) was usually 8–18 cm thick with two circumstances producing thinner deposits of 3–7 cm. In the northeast corner of Square C dump deposits associated with Stratum X produced an uneven surface for the deposition of Stratum XII and probably resulted in Stratum XII initially



having a mounded surface. Weathering and/or the leveling of the deposits to produce a living surface for Stratum VIII (floor) subsequently thinned the Stratum XII deposits. Excavators in 1990 also recorded little or no evidence of Stratum XII in some areas with large rock accumulations along the north and west walls (Sq. H–Ssq. 14, Sq. G–Ssq.'s 13 & 14, Sq. D–Ssq.'s 15 & 16). In subsequent excavations these rock accumulation were excavated as part of Stratum XII rather than as separate features. Stratum XII is not therefore as thin in these subsquares as the notes suggest.

A thin lens of yellow loam appears between Stratum VIII and XII in the southeast corner of the housepit (Sq. D–Ssq.'s 5 & 6, Sq. L–Ssq. 8). This deposit appears to have been dug out of the wall as the Stratum VIII floor was being prepared.

In general, Stratum XII (roof) has more clasts, a lighter color and is less compact than either of the adjacent floor deposits (VIII & X). This made it relatively easy to isolate this roof deposit. Only where dump deposits associated with Stratum X were present was the deposit difficult to distinguish from the underlying deposits.

### **Features**

Two areas of rock accumulation are designated as features in Stratum XII. Feature 9 is a roughly circular pile of rocks approximately 40 cm across and 20 cm high (Sq. C–Ssq.'s 1 & 2). The base rests on top of Stratum X (floor) while the main body of the feature continues up through the overlying roof deposits (XII) into the bottom of Stratum VIII (floor). The top of the pile is nearly flat. All of the rocks are rounded and under 10 cm in maximum dimension, with a tendency for the largest of the rocks to be on the bottom.

No charcoal, ash, fire-altered rocks, bones or artifacts were found in association.

Feature 1 was first encountered in the test trench (Sq. C–Ssq. 16) and latter extended into Squares G (Ssq.'s 13 to 15) and F (Ssq. 1). It is a much larger accumulation of rock at least 60 cm wide and extending approximately 2.25 m along the north wall. Like Feature 9, this conical pile of rocks is comprised of small rounded cobbles and with a base resting on floor X and a body rising 20 cm through Stratum XII (roof).

In previous reports, these features were tentatively interpreted as the collapsed remains of a retaining wall or a rock dump associated with Stratum X (floor). More recent excavations indicate that these rocks are clearly within the soil matrix of Stratum XII. This suggests two possible interpretations (1) the rocks were part of the roof that fell onto the floor when the roof collapsed and were left in situ, or (2) the rocks were part of the roof but were moved by occupants of Stratum VIII floor to create a level living surface in the center of the housepit and dumped out of the way under benches. Since large concentrations of rock are not known to occur in the roof of any other housepits at the site, the latter explanation seems most likely. However, it still raises the question of why the density of rocks appears to be greater in Stratum XII than in the surrounding sterile till.

### **Artifacts**

Only a few subsquares in Stratum XII contain any flakes and then rarely more than four. No stone tools are associated with this stratum.

### **Fauna and Flora**

Mammal bone and fish bone are also absent from most subsquares in Stratum XII. Counts exceeding five small mammal bone fragment or 2 fish bones are rare, and excavators often attributed the few fish bones to mixing with floor deposits. Three of the largest pieces of ungulate bone recovered from this stratum were found along the outer edge of the excavation (Sq. D–Ssq. 13, Sq. G–Ssq. 16, Sq. L–Ssq. 16) above dump deposits leading to speculation that they were actually part of the dump deposits. Identified remains include: 38 salmon bones, 16 mammal bones, 1 artiodactyl rib and metapodial, 1 deer mandible, and 1 bighorn sheep carpal and 3 horn fragments. A possible bird bone drinking tube was found in 1992, in a deposit that was either Stratum XII or a Stratum X dump.

Floral remains are limited to a few larger pieces of charcoal along the walls.

### **Interpretation of Stratum XII**

Stratum XII is interpreted as reworked till that was originally placed on the roof of the housepit during the Stratum X (floor) occupation. The low density of bone and lithics, the localized concentrations of fire-altered rock, the generally high but varying clast content, and the loosely compacted matrix with little organic staining are typical of roof deposits throughout the Keatley Creek site. Any cultural material found in Stratum XII are seen to have originated from cultural activities conducted on the roof or from garbage cleaned from the floor and dumped on the roof. Their low density suggests these activities were infrequent and that the Stratum X (floor) occupation was of a relatively short duration.

The most problematic aspect of stratum XII is the large accumulations of cobbles in this stratum. The two accumulations recorded as features (HP's 1 & 9) are not isolated occurrences. Two other small piles of rock were noted in Square C (though not mapped) and the large accumulation noted along the north wall appears to continue along the west wall as well. All these accumulations are dominated by small rounded cobbles, though larger, more angular cobbles are noted, especially at the contact with floor X. None of the rocks are fire-altered, and no other cultural material is found in association. The rocks lying over the storage pit appear also to be contemporaneous. No similar accumulations are found anywhere in the site.

These rocks are too numerous and concentrated to be interpreted as natural distributions in the till. The rocks may have formed a standing structure (e.g. a retaining wall) on floor X that toppled under the weight of the collapsing roof and rim. Small rock accumulations in other housepits (HP's 3 & 6) have been interpreted as retaining walls used to keep the unconsolidated Rim deposits from falling into the housepit. These accumulations of rock are much smaller than those seen in Stratum XII and are generally constructed of larger rocks. I find it difficult to imagine a large retaining wall of small rounded rocks maintaining its structural integrity. Nor would a pile of small rounded rocks provide a strong support for a bench or a similar structure.

I am more inclined to believe that the rocks were actually part of the roof (Stratum XII) as the surrounding matrix suggests. The roof deposits associated with the Stratum X floor seem thinner than roof deposits in most other housepits, though thin roof deposits were noted for Plateau occupations in HP's 110 and 47 (Rousseau and Handly 1989). If thinner layers

of soil were placed on roofs during the Plateau horizon times, then more rocks might have been used to hold down the mats and/or branches used to cover the superstructure. The large flat rocks seen in Figure 21 may have been used for this purpose. On the other hand, the large mounds of rocks in Features 1 and 9 seem excessive. These rocks may have originally been widely dispersed throughout Stratum XII, but were moved from the center of the housepit by occupants of Stratum VIII (floor) to provide a level living surface and dumped under benches along the wall where they would be out of the way. Such a practice would have required less effort than dumping the rocks outside the housepit depression.

The general lack of filtered deposits suggests a quick collapse. If the rocks were on the roof, they may have contributed to a sudden collapse.

### **Stratum X: Floor**

#### **Soil Matrix**

The soil of Stratum X is a moderately compact, black (10 YR 2/1), sandy loam. Mottling produced by cicada activity is uncommon probably because the cicada would not have burrowed to this depth through the rocky collapsed roof. Cobbles are often absent but when present can vary from 5% to as much as 30% of the soil by volume. The higher densities seem to largely result from the large rock accumulations resting on top of Stratum X being included as part of the floor stratum. Pebbles usually exceed 15% but also vary between 5% and 30%. Granules occur in relatively low frequencies of 5–10%.

Most subsquares in this stratum contain no fire-altered rock (> 4 cm) (**Fig. 22**). Only three areas within the house contain subsquares with more

than 4 rocks: (1) the central portion of the east wall, (2) the center of Square C, and (3) the northwest corner of Square D. These concentrations seem to reflect dumping activities. Charcoal is reported for about 1/3 of the subsquares, mostly in the form of scattered flecks. Larger pieces of charcoal (1–4 cm) are associated with the fire-altered rock concentrations.

The underlying Till (XIV) is less compact, lighter in color, and without cultural material, making it distinct from Stratum X. Above Stratum X, Stratum XII is also less compact, lighter in color and contains little cultural material. However, in areas along the east wall soft, floor-like deposits seem to be mounded over the main floor producing a more complex stratigraphy and making context harder to determine. These mounds are interpreted as dumping events along the edge of the floor by Stratum X residents. Similar deposits were noted in other housepits at the site, as well as on the floor of Stratum VIII.

In Square D (Ssq.'s 10, 11 & 14), a thin (1–3 cm), darker, and more compact floor deposit was found at the bottom of Stratum X and separated from the higher floor deposits by an equally thin lens of yellow soil. This suggests an earlier, though presumably still Plateau, floor was removed from the housepit prior to the floor X occupation. The discovery of patinated artifacts (Sq. H–Ssq. 16 and Stratum VIII: Sq. D–Ssq. 1) at the margin of the housepit also suggests some tools from an earlier occupations were incorporated into the floor margins.

Stratum X (floor) deposits are absent over Feature 6 where an open pit existed during the occupation (Sq. H–Ssq. 5, Sq. D–Ssq. 8) and along the outer edge of the excavations where the edge of the wall was encountered (Sq. D–Ssq.'s 1-5, Sq. I–Ssq.'s 1 & 9, Sq. K–Ssq.'s 8 & 12, Sq. L–Ssq.'s 4 & 8, Sq.

B–Ssq. 6). In many other subsquares along the outer edge, excavators found it difficult to locate clear floor deposits and arbitrarily excavated the last 5 cm of cultural deposits as though they were floor. The thickness of Stratum X varies from 1–12 cm with deposits greater than 5 cm found almost exclusively where materials from dumps and features were included as part of Stratum X rather than excavated as separate depositional events.

### **Features**

Three features are associated with Stratum X. Feature 6, a large cache pit along the south wall, was opened and used during the Stratum X occupation. A full description of this feature is included in the discussion of Stratum VIII.

Feature 2 is a small, centrally-located, stone lined hearth. As with the hearths in Stratum VIII (floor), most of the debris from this hearth was removed by the occupants of floor X prior to later occupation events. A fire-reddened area approximately 50 cm across and 6–8 cm deep and partially lined with large rocks is all that remains. The concentration of fire-altered rock, larger pieces of charcoal, and dark soil found in the floor deposits above this hearth may again reflect the continued use of the central area for hearth construction.

Feature 12 is a small, asymmetrical, bowl-shaped pit found along the east wall (Sq. L–Ssq. 16). It is 27 cm X 31 cm across and 19 cm deep. The pit was excavated through Stratum X and into sterile deposits indicating that it was constructed and used by the later occupants of Stratum X (floor). The deposits filling the pit are similar to the dump material found immediately

above and included larger pieces of charcoal and fire-reddened soil, but no other cultural material. The pit is interpreted as a small cache pit.

### **Artifacts**

The debitage from this stratum is primarily vitreous and fine-grained, black trachyte. Subsquares often contain no flakes and where present, rarely exceed three (**Fig. 23**). Higher concentrations of approximately 5–10 flakes are found along the northern edge of Squares H , G and D. The highest density of flakes are in Square C, with frequencies higher than 15 in Subsquares 10 and 11 and frequencies of four or more in most adjoining subsquares. Many of the flakes in this concentration are small pressure flakes. Most of the flakes in Stratum X are billet and pressure flakes indicative of the secondary reduction of bifaces (Iannone and Handly 1990).

The frequency of modified artifacts is very low in Stratum X with no subsquare having more than two (**Fig. 24**). A cluster of subsquares with tools along the east wall include the following artifacts: two Plateau horizon points (one white chalcedony) (Sq. C–Ssq.'s 5 & 6), a notch (Sq. C–Ssq. 5), a bipolar core (Sq. C–Ssq. 13), a retouched flake (Sq. C–Ssq. 1), and a flake core (Sq. K–Ssq. 4). A second cluster in Square D includes one utilized flake (Ssq. 14), two retouched flakes (Ssq.'s 11 & 14), and two bipolar cores (Ssq.'s 7 & 10). Tools found along the west wall include four utilized flakes (Sq. F–Ssq. 3, Sq. G–Ssq. 4, Sq. H–Ssq.'s 7 & 16), two retouched flakes (Sq. F–Ssq. 6, Sq. G–Ssq. 15), a piercer (Sq. I–Ssq. 5), a notch (Sq. F–Ssq. 1), a scraper (Sq. F–Ssq. 1), and a biface Sq. G–Ssq. 13). The central hearth also had a biface nearby (Sq. H–Ssq.13).



Bone artifacts include a pendant (Sq. C–Ssq. 14), two tubular bone beads (Sq. C–Ssq. 2, Sq. H–Ssq. 11), and a bird bone worked into a possible whistle or drinking tube (Sq. D–Ssq. 10). A largely intact digging stick handle was found near the east wall of Square C (Ssq. 9). The context of the handle is uncertain but it seems most likely to be from a dump deposit on the floor or the bottom of roof XII. Given that it is intact, storage in the roof rafters or accidental burial by dumped material seem more likely scenarios than discard. A deer scapula with a ground edge and striations was also found in Square K (Ssq. 8) in dump deposits just above sterile.

### **Fauna and Flora**

Mammal bone is often absent and few subsquares contain more than three small fragments (**Figs. 25 and 26**). The only two subsquares have higher counts (Sq. B–Ssq. 3 and Sq. D–Ssq. 12). The bone is rarely burnt. Identified remains include a snowshoe hare tibia and three beaver incisors.

Fish bones were found in approximately half the subsquares, but only 16 subsquares contained frequencies higher than ten. Subsquares with these high frequencies can be clustered into six groups. Two clusters occur on either side of the cache pit. Three smaller clusters parallel the east wall in Squares C and D, while the final cluster is found in the northwest corner of Square G.

No floral remains were noted other than the occasional larger piece of charcoal.

### **Interpretation of Stratum X**

Stratum X has many of the characteristics of a typical floor from this site including: a darker more compact matrix, low frequencies of lithics and

mammal bone, high frequencies of fish, horizontally lying artifacts, a storage pit, and a central hearth (**Fig. 27**). There can be little doubt that the two Plateau horizon points from Square C are in the floor deposits and that this floor was occupied somewhere between 2,400 and 1,200 BP.

The frequencies and densities of lithic material on the Stratum X floor and the associated Stratum XII roof are generally much lower than those seen in other housepits at the site. These figures suggest a relatively short occupation, a limited range of cultural activities by the occupants, or relatively few occupants. Since house size was determined during construction by the number of people who were to occupy the house (Teit 1900:192) and Stratum X represents the initial occupation, it seems unlikely that fewer than 15 people were using the housepit (see below). Although debitage densities are much higher in HP 12 (a housepit of similar size), the number and type of modified artifacts found on floor X are similar to those found on the floor in HP 12 (Spafford 1991:159, 163). Therefore, it would seem that the same range of activities occurred in both housepits, and the type of cultural activities has not caused the lower densities on floor X. A short length of occupation is therefore the most likely explanation for the low density of lithic material on floor X.

On the other hand, the frequencies of fish bone on floor X are much higher than those seen in HP 12 and are comparable to those seen in larger housepits (HP's 7 and 3) (Kusmer 1989). Many of the fish bone in Stratum X cluster around the large cache pit, a feature lacking from HP 12 but present in the larger housepits. The higher density of fish in Stratum X may merely result from the greater use of indoor caches for the storage of dried salmon. Mammal bone frequencies are similarly low in both HP 12 and Stratum X.

The presence of many intact fish on the floor suggests some areas of the floor received little trampling. The fish tend to concentrate around the hearth where they were presumably heated or cooked, beside the pit where they were stored, and along the northeast sections of the wall.

At contact a housepit depression with a 6.1 m diameter may have housed 15 people (Teit 1900:192) providing 2 m<sup>2</sup>/person. If the walls slope in as they do in HP 9, the actual floor diameter may have been only 5 m and the density only 1.3 m<sup>2</sup>/person. The inside rim of HP 9 during the Stratum X occupation was 5 m in diameter (approximately 19.5 m<sup>2</sup>) indicating a resident population of approximately 15 people. Given an average family size of 5–7 people (Spafford 1991:24), three families probably lived in this housepit. They apparently shared both the hearth and the storage pit.

According to ethnographic accounts, a wooden sleeping platform (0.3 m high and 1.5 m wide) was constructed around the outer edge of the floor (Bouchard and Kennedy 1977:64). If such a platform was constructed around the entire perimeter of the housepit during the Stratum X occupation, then the only open space would be a 2 m circle in the middle. This circle would not provide enough open space for 15 people to cook and conduct other activities. On the other hand, if each person slept with their head to the wall and used only 50 cm of the bench, then only about half (7.5 m) of the circumference would have been needed for the sleeping platform and a large communal activity would be available along the remaining sections of the wall. Ethnographic accounts also describe the floor being covered with branch or mats that were cleared out on a regular basis.

The distribution of cultural material on Stratum X is consistent with that expected for a housepit with a bench around half the perimeter. Most of the

fish, mammal bone, bone artifacts, debitage, modified stone artifacts, large pieces of charcoal and fire-altered rock are concentrated on the northeast side of the floor within 1.5 m of the wall. All clearly identified dumping events are also in this area. These dense and mounded deposits of debris would be in the way if they were dumped on the open floor but could be easily and expediently concealed under a platform. Therefore, I propose that a platform was constructed along the wall in the northeast half of the housepit and that the cultural material found in this area results primarily from materials lost, stored or dumped under the platform and do not reflect primary activity areas.

Other than the fish concentrations around the cache pit, densities of cultural material are generally low throughout the rest of the housepit. This scenario would suggest that few artifacts or bones were left in the common area where presumably many of the activities took place, possibly because they were removed with the mats and boughs used to cover the floor. This finding is not inconsistent with findings from other housepits at the site where high frequencies of cultural material are rarely found in the center of the housepit. Given this patterning, expectations should be for low densities in other parts of the housepit that were used as common areas.

Since only three small postholes were found in the Stratum X floor, the roof superstructure must have been supported by beams set outside the housepit floor. A similar pattern was also noted for the small Plateau floor in HP 90 (Vol. III, Chap. 9). The test trench excavations of Plateau floors in three other small housepits (HP's 4, 107, 110) also failed to produce postholes, while two large Plateau floors (HP's 4, 8) did contain them. This evidence suggests that roofs on small Plateau housepits differed from the

ethnographic pattern, and Kamloops roofs at the site. Perhaps an external conical A-frame structure was used similar to the roofs of dwelling lodges recorded ethnographically (Alexander 1992:133–6).

This floor represents one of seven probable intact Plateau floors (HP's 4, 8, 9, 90, 107, 110) from the site. Floor VIII is one of five definite Kamloops floors (HP's 1, 2, 3, 7, 101). No intact Shuswap floors were encountered at the site, though Shuswap points were found in the early refuse deposits of six houses (HP's 1,2, 4, 3, 7, 90).

### **Stratum VII: Rim Slump**

Stratum VII is only present in the test trench (Sq. B–Ssq.'s 4, 8 & 12, Sq. C–Ssq. 16), in Square F (Ssq. 5), and at the southern edge of the housepit (Sq. D–Ssq.'s 1 to 4 & 8, Sq. H –Ssq.'s 1, 2, 5, 6, Sq. L–Ssq. 4). The matrix consists of a loosely compacted, very dark grayish brown (10 YR 3/2) sandy loam. Cobbles may be totally absent from the matrix and generally constitute less than 10% of the volume, but can be as high as 20% in isolated areas. Pebble and granule content also varies dramatically from 5–25% (for each) with the norm being 10–20%. Charcoal appears as small, scattered flecks with the occasion larger piece (2–3 cm). Fire-altered rock may be absent, but localized concentrations with as many as 33 pieces (> 4 cm) in a 10 cm level are common.

Stratum VII is capped with surface deposits (I) and, closer to the center of the housepit, it is also covered with roof (IV). The context and soil matrix indicate that Stratum VII is a probable rim slump deposit. In other excavations (Hayden et al. 1986, 1987), these deposits were interpreted as soil that was originally placed on the rim or lower edge of the roof during

construction and subsequent dumping events. While the roof was still standing some of these deposits may have slid into the housepit, under the roof. More rim and roof deposits fell on top of these following the collapse of the roof.

The identification of the leading edge of Stratum VII is always difficult because these deposits are very similar to both roof (IV) and filtered roof (VI). Color and compaction vary as much within, as between, each of these strata. Only when the rim slump is closer to the rim spoil (see below) does it become consistently looser than the roof and filtered roof. In general, the roof contains fewer clasts (of all sizes) and less fire-altered rock than the filtered roof, while the rim slump has fewer pebbles and granules but more cobbles and fire-altered rock than the roof or filtered roof. However, a great deal of variability exists within each strata and the transition from rim slump to roof and, even more so, to filtered roof is often unclear. This blending of strata is probably due to their origin, in that they are all composed of mixed materials from roof construction and dumping events. Rodent activity has confused the strata even more (Sq. H–Ssq. 1).

In the subsquares where the context is relatively clear, the rim slump contains few, if any, lithics, faunal or floral remains. A 10 cm level typically has no more than two flakes or two small fragments of mammal bone. The only notable artifacts were a hide scraper and a soapstone flake found at the top of the stratum in association with burnt pine bark, charcoal, and a very high concentrations of fire-altered rock (Sq. H–Ssq. 1). This cluster of materials appears to be a dump of materials, probably cleaned from a hearth or floor, most likely during the Strata VIb or VIII occupations. In fact, the rim slump deposits (approximately 50 cm thick) in Square H (Ssq.'s 1, 2 &

6) seem to consist of a series of superimposed dumping events. This evidence suggests that heavier and bulkier garbage from interior house cleanings was generally placed around the extreme outer edge of the roof.

### **Strata V: Rim Spoil**

Stratum V is only encountered in three subsquares (Sq. D–Ssq. 2, Sq. B–Ssq.'s 12 & 16). The soil matrix is a brown (10 YR 5/3) silty loam with numerous cobbles and other clasts but virtually no cultural material. The only notable find is a large piece of antler found at the interface with the underlying sterile Stratum XI (Sq. B–Ssq.'s 12 & 16). Although these deposits are up to 26 cm thick at the outer edge of the housepit excavations, they thin and end abruptly at the wall of the housepit. Stratum V lies on top of sterile deposits, either till (XIV) or silts (XI), and is capped with a combination of surface (I), roof (IV), and rim slump (VII).

This stratum is interpreted as a rim spoil deposit resulting from the placement of reworked till at the outer edge of the housepit roof during construction. The general lack of cultural material suggests that this stratum was deposited during the initial construction (prior to most cultural activity) and has remained largely intact throughout subsequent re-excavations and occupations of the housepit. The antler discovered at the bottom of the deposits may have been used to dig the housepit depression into the sterile deposits.

### **Stratum XI :Sterile Silt**

Stratum XI is only present in the two northernmost subsquares (12 & 16) of the test trench in Square B, Subsquares 6 of Square B, and the southeast corner of Square D. The soil matrix is an olive brown (2.5 Y 4/4) aeolian silt. It

varies in thickness from 16–26 cm and has a very uneven contact surface with the underlying sterile till (XIV), but a flat interface with overlying rim spoil (V). Stratum XI is culturally sterile and probably represents a naturally occurring deposit.

Similar silt deposits were found under the rim deposits in HP's 4, 5, 7, 90, 108, and 109. (Hayden et al. 1986, Hayden 1989, Rousseau & Handly 1989). The context in HP 108, just 60 m away, is almost identical. Lochnore Phase materials (5,500–3,500 BP) from some of these contexts including points, microblades, and microblade cores suggest that these deposits predate the use of housepit for winter dwellings (Stryd and Rousseau, 1996).

#### **Stratum XIV: Sterile Till**

Stratum XIV is a culturally sterile, olive brown (2.5 Y 4/4) till. The matrix is typically a compact, loamy sand with a very high clast content, including numerous cobbles. It forms the base and walls of the housepit depression.

#### **Summary**

Housepit 9 was originally constructed and occupied during the Plateau Horizon (2,400–1200 BP). The first occupants excavated a large storage pit (probably for salmon) and a central stone-lined hearth that were filled in prior to the abandonment of the housepit. A wooden sleeping platform may have been constructed along the northeast half of the wall. The roof collapsed relatively quickly (possibly due to the weight of a large accumulation of cobbles) without burning. The poles and beams from the structure were possibly removed for another nearby structure.

The housepit was reoccupied during the Kamloops horizon (1,200–200 BP) and a new roof constructed. However, the early floor and most of the



roof fill were not removed. A sleeping platform may have been constructed around portions of the wall. At least two hearths were constructed and later cleared away and the pit was partially re-excavated and refilled again prior to abandonment.

The roof collapsed slowly after abandonment and while the roof was still largely intact, the housepit was used as a short-term hunting camp. The roof may have been repaired at this time and additional soil placed on it. The roof did not burn prior to the final collapse and again, some of the wood superstructure may have been removed for another purpose.

After the collapse, the depression was used for a short-term open air hunting camp. Activities at this camp included the construction of a hearth and roasting pit, hide preparation, and stone tool manufacture. Both short-term camps were occupied later in the Kamloops horizon.

An undated cache pit beside the housepit may have been used during any of the occupation events.

### **Acknowledgements**

In addition to myself, the field crew included Dr. Brian Hayden, Sue Woods, Jim Spafford, and two volunteers, Nora Franco and Don Jolly. I want to thank everyone for their hard work and enthusiasm.

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### **List of Figures**

- Figure 1: Plan View of Housepit 9
- Figure 2: Contour Map of Housepit 9
- Figure 3: Profile of South Wall of Squares K, C, G, and I
- Figure 4: Profile of West Wall of Squares D, C, and B
- Figure 5: Profile of East Wall of Squares C and D
- Figure 6: Profile of South Wall of Squares L, D, and H
- Figure 7: Profile of West Wall of Squares H and G
- Figure 8: Profile of North Wall of Squares G and C
- Figure 9: Profile of Cache Pit (Feature 6)
- Figure 10: Distribution of Cultural Remains on Living Surface in Stratum I
- Figure 11: Profile of South Wall of Squares I, G, C, and L Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsqu岸es
- Figure 12: Profile of West Wall of Squares G and F (at 0.5 W) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsqu岸es
- Figure 13: Profile of South Wall of Squares F and B Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsqu岸es

Figure 14: Profile of East Wall of Square D (at 1E) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares

Figure 15: Distribution of Fire Altered Rocks in Strata VI and VIII

Figure 16: Distribution of Debitage in Strata VI and VIII

Figure 17: Distribution of Modified Artifacts in Strata VI and VIII

Figure 18: Distribution of Fish Remains in Strata VI and VIII

Figure 19: Distribution of Other Faunal Remains in Strata VI and VIII

Figure 20: Distribution of Rocks in Strata VIII and XII

Figure 21: Reconstruction of Activity Areas in Stratum VIII

Figure 22: Distribution of Fire Altered Rocks in Stratum X

Figure 23: Distribution of Debitage in Stratum X

Figure 24: Distribution of Modified Artifacts in Stratum X

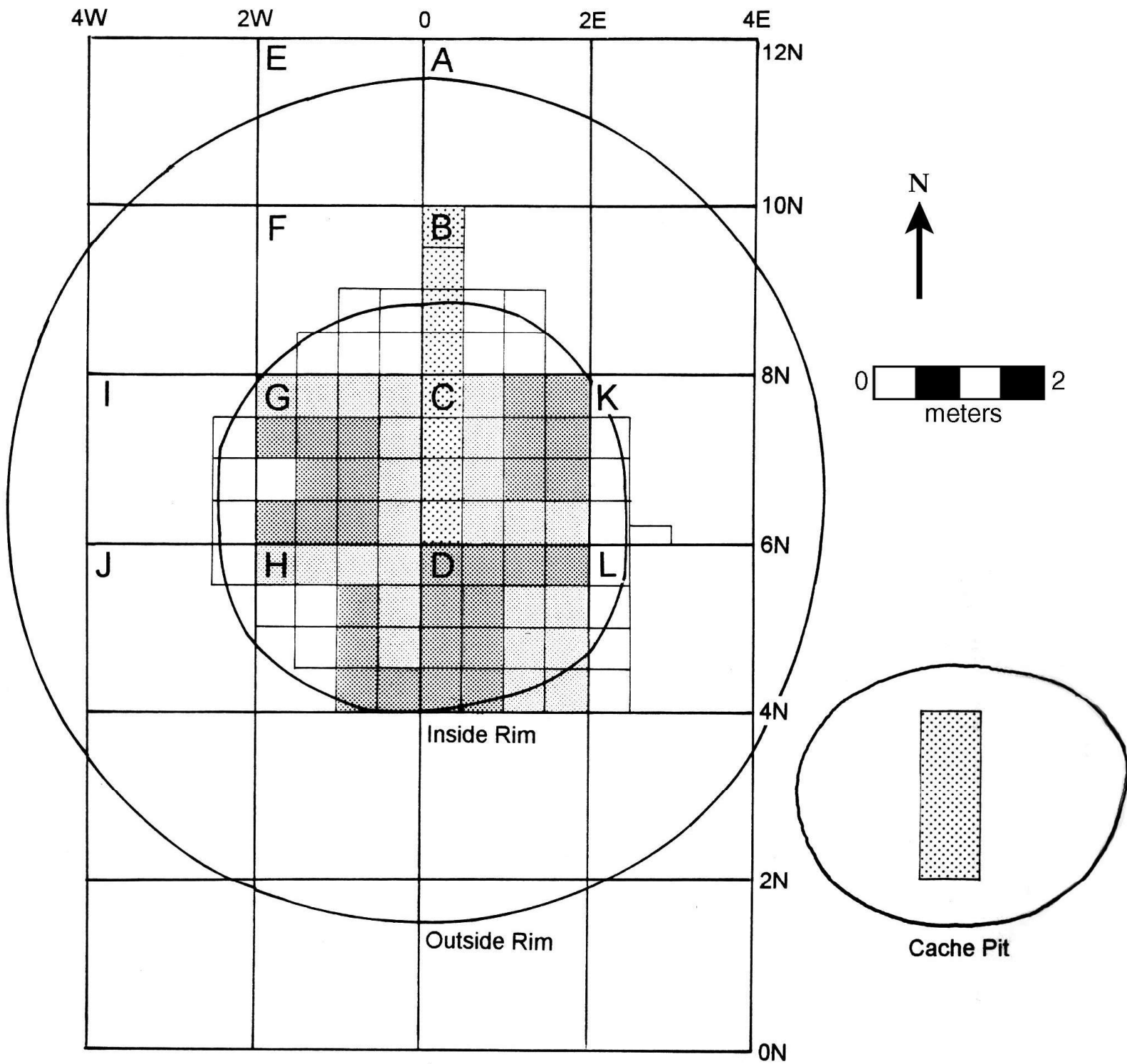
Figure 25: Distribution of Fish Remains in Stratum X





Figure 26: Distribution of Other Faunal Remains in Stratum X

Figure 27: Reconstruction of Activity Areas in Stratum X

Figure 28: Histogram of Modified Artifacts in Strata VI and VIII

Figure 1. Plan View of Housepit 9



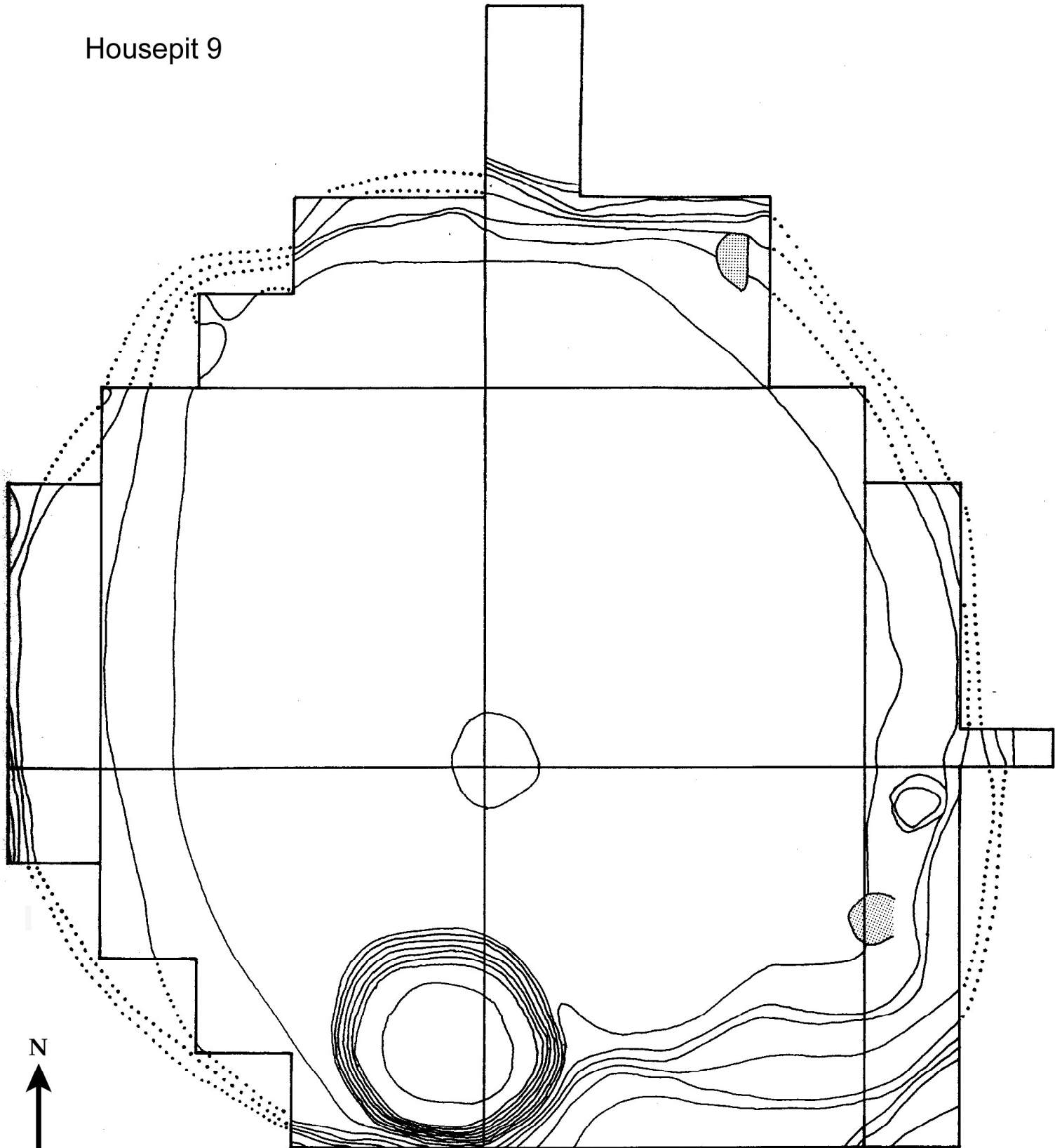
-  1987 Test Trench
-  1990 Excavations
-  1991 Excavations
-  1992 Excavations

Subsquare No.

16	15	14	13
12	11	10	9
8	7	6	5
4	3	2	1

Figure 2. Contour Map of Housepit 9

Housepit 9



— Contour line - 10 cm intervals

⋯ Extrapolated contour line

● Rock

0 1  
meters



Figure 3. Profile of South Wall of Squares K, C, G, and I

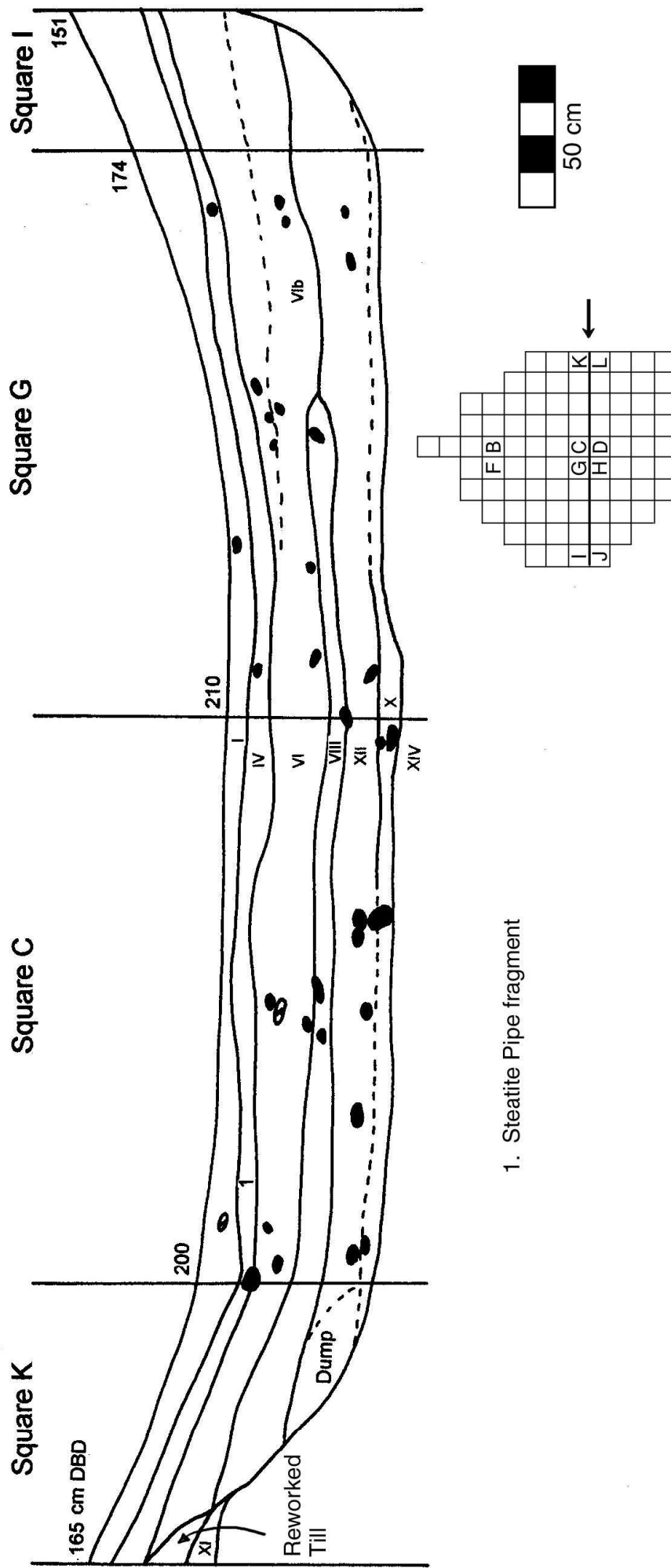


Figure 4. Profile of West Wall of Squares D, C, and B

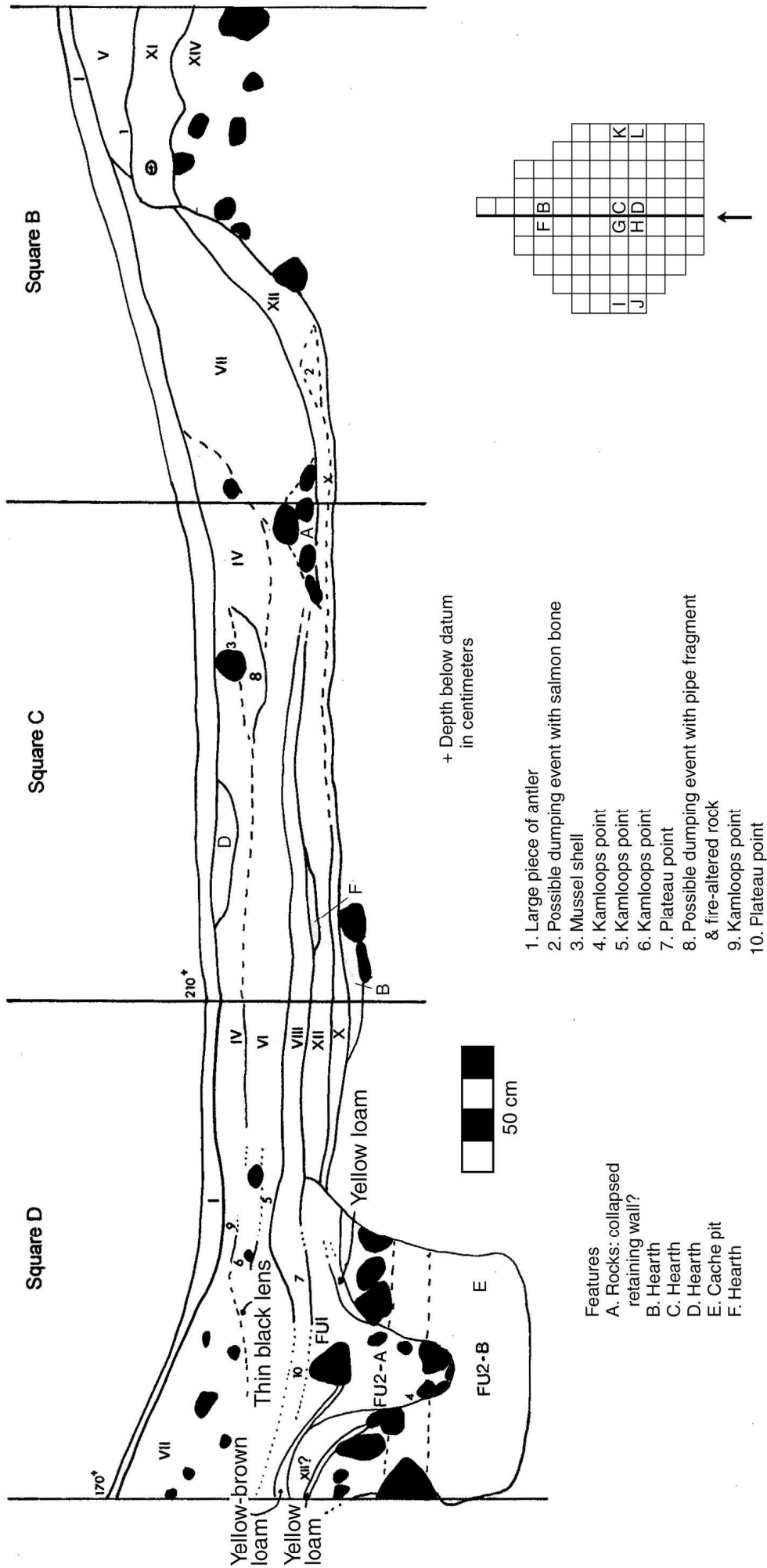
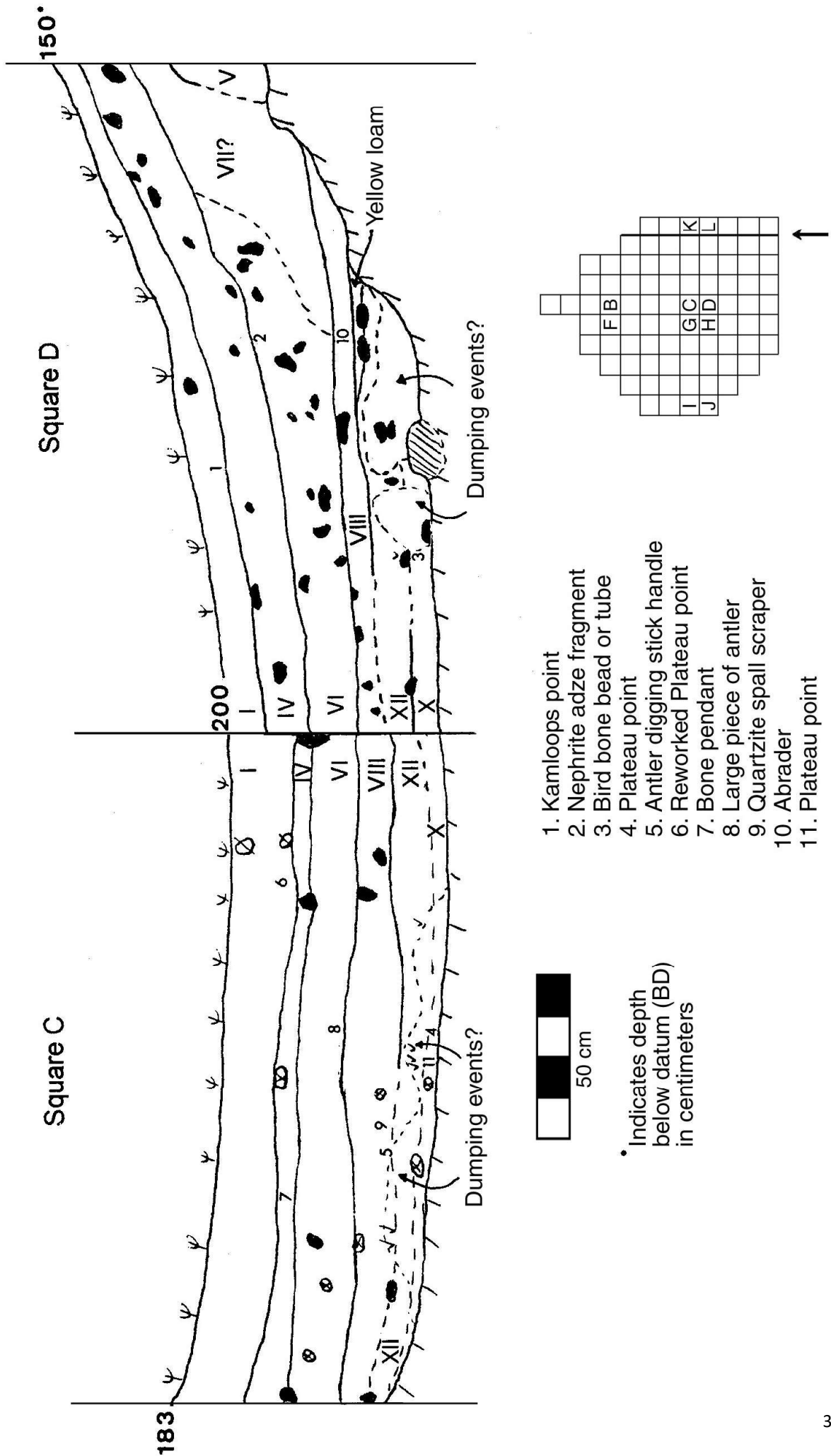


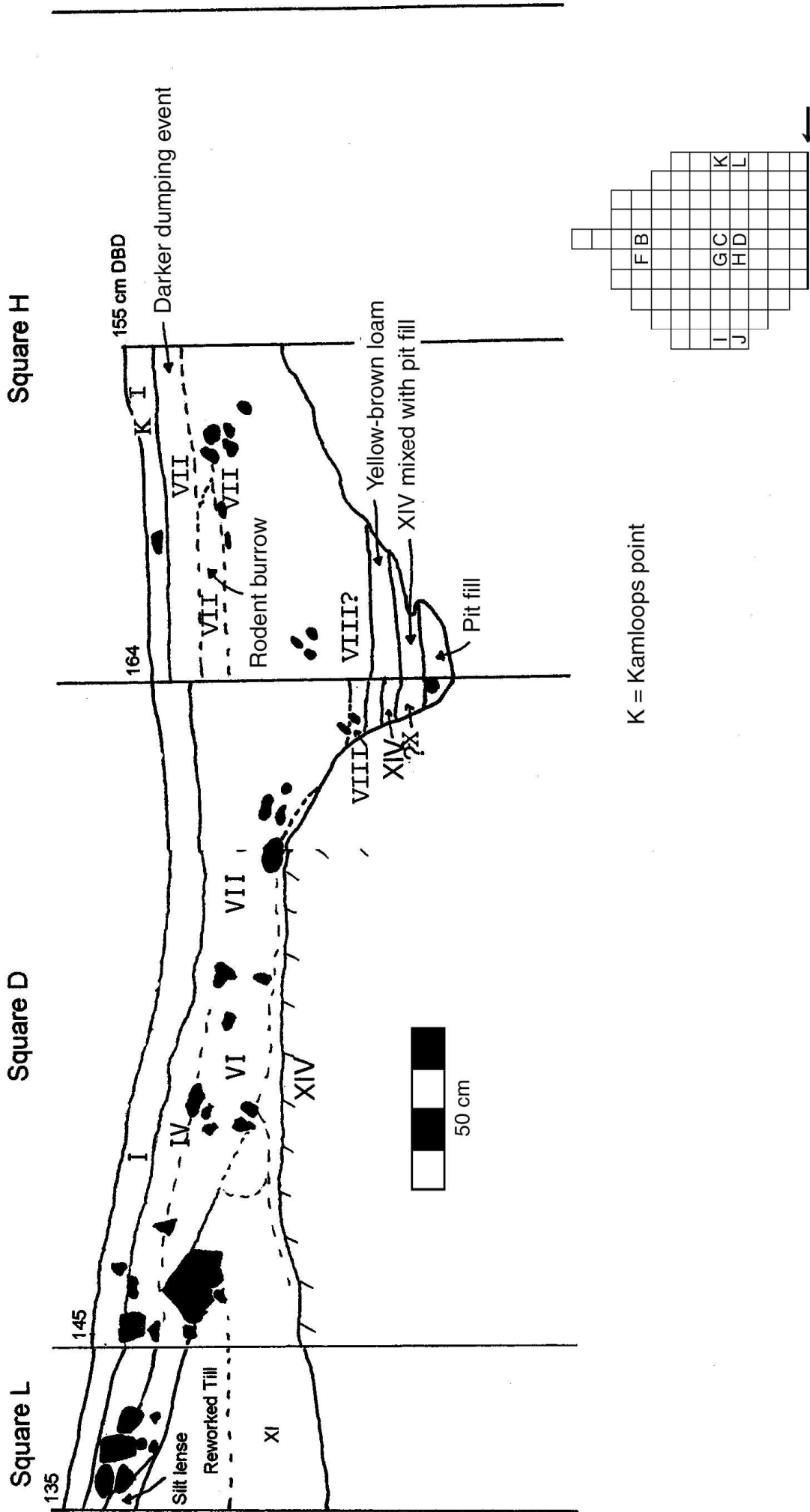
Figure 5. Profile of East Wall of Squares C and D



1. Kamloops point
2. Nephrite adze fragment
3. Bird bone bead or tube
4. Plateau point
5. Antler digging stick handle
6. Reworked Plateau point
7. Bone pendant
8. Large piece of antler
9. Quartzite spall scraper
10. Abrader
11. Plateau point

• Indicates depth below datum (BD) in centimeters

Figure 6. Profile of South Wall of Squares L, D, and H



K = Kamloops point

Figure 7. Profile of West Wall of Squares H and G

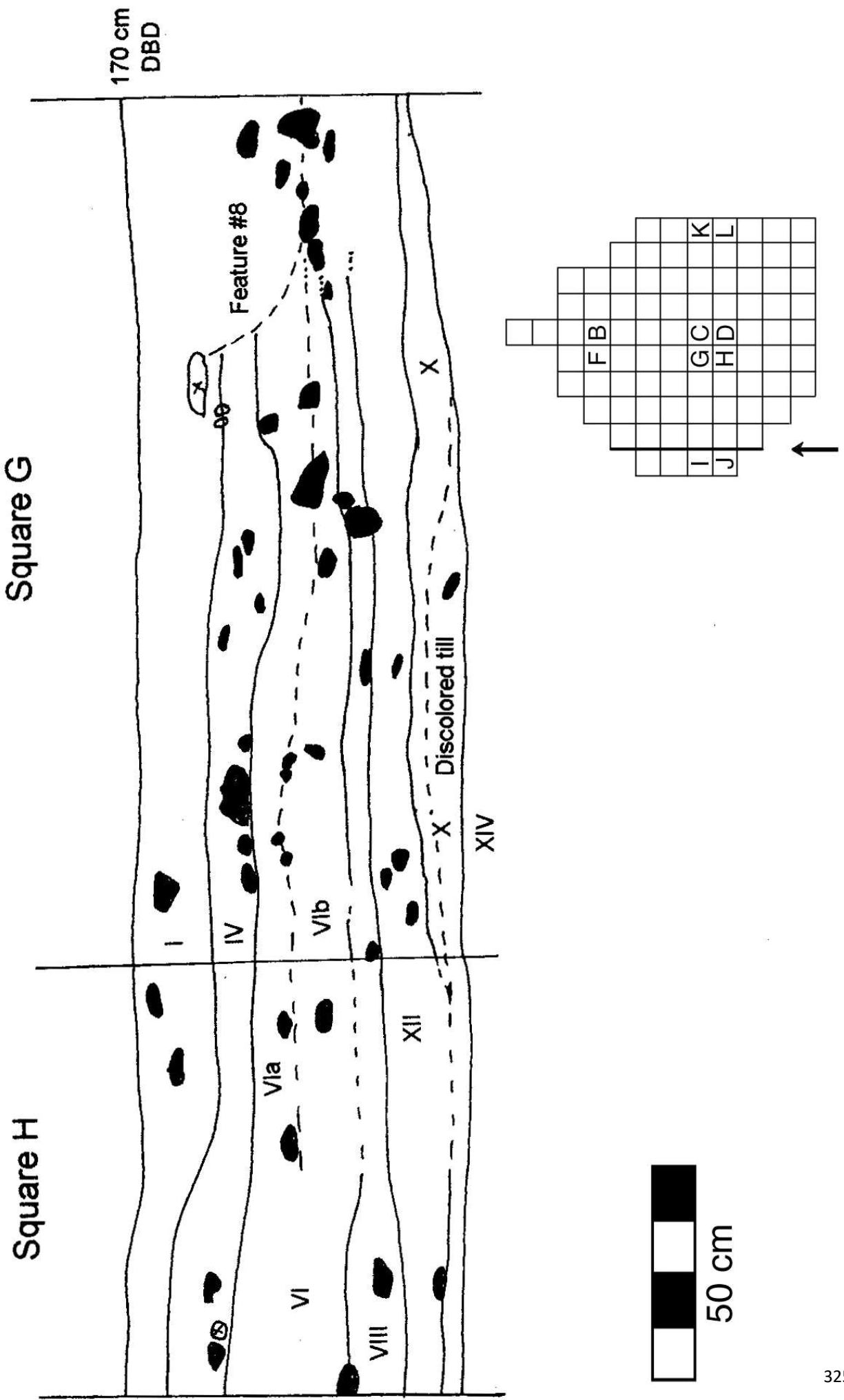
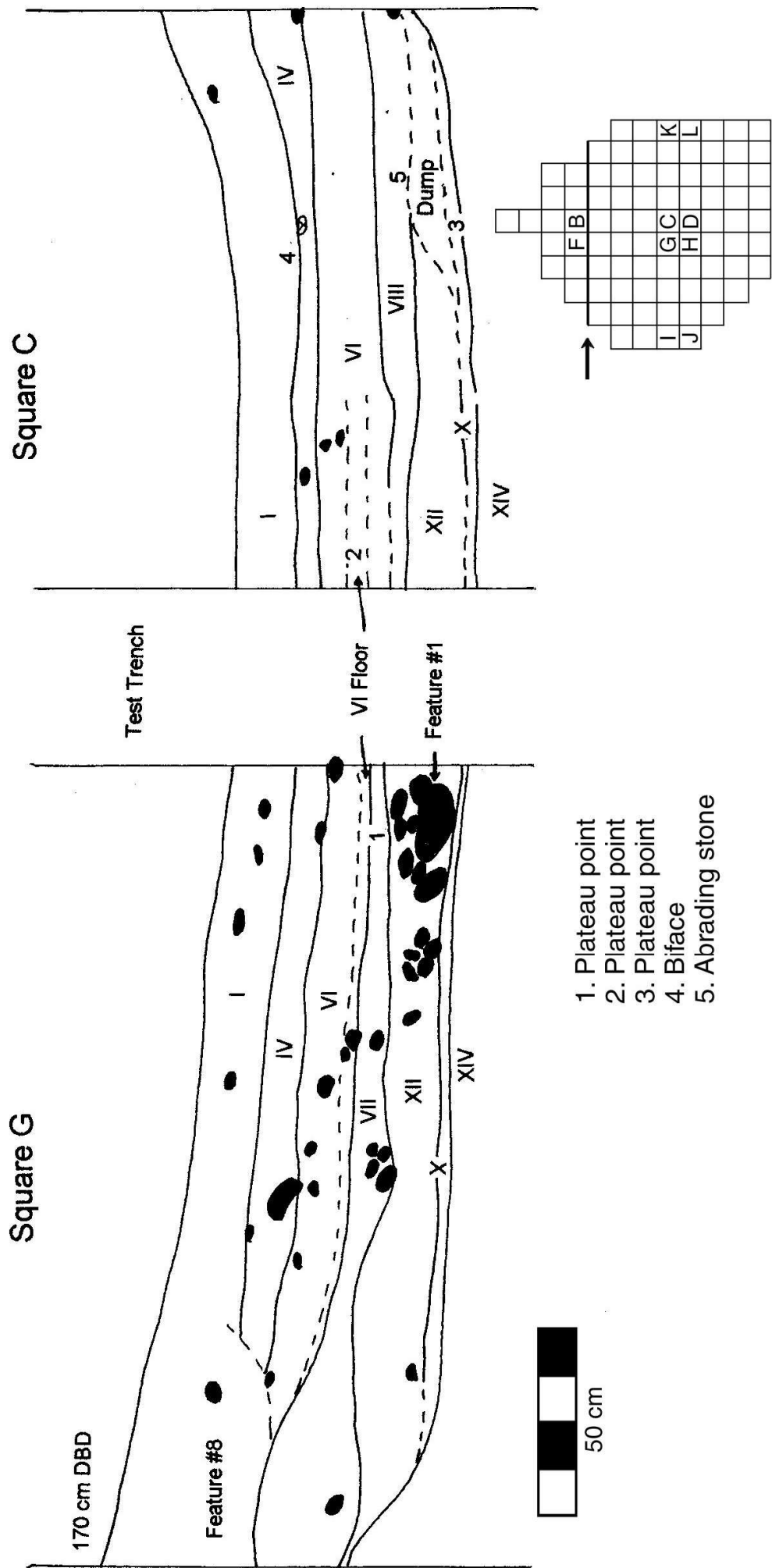
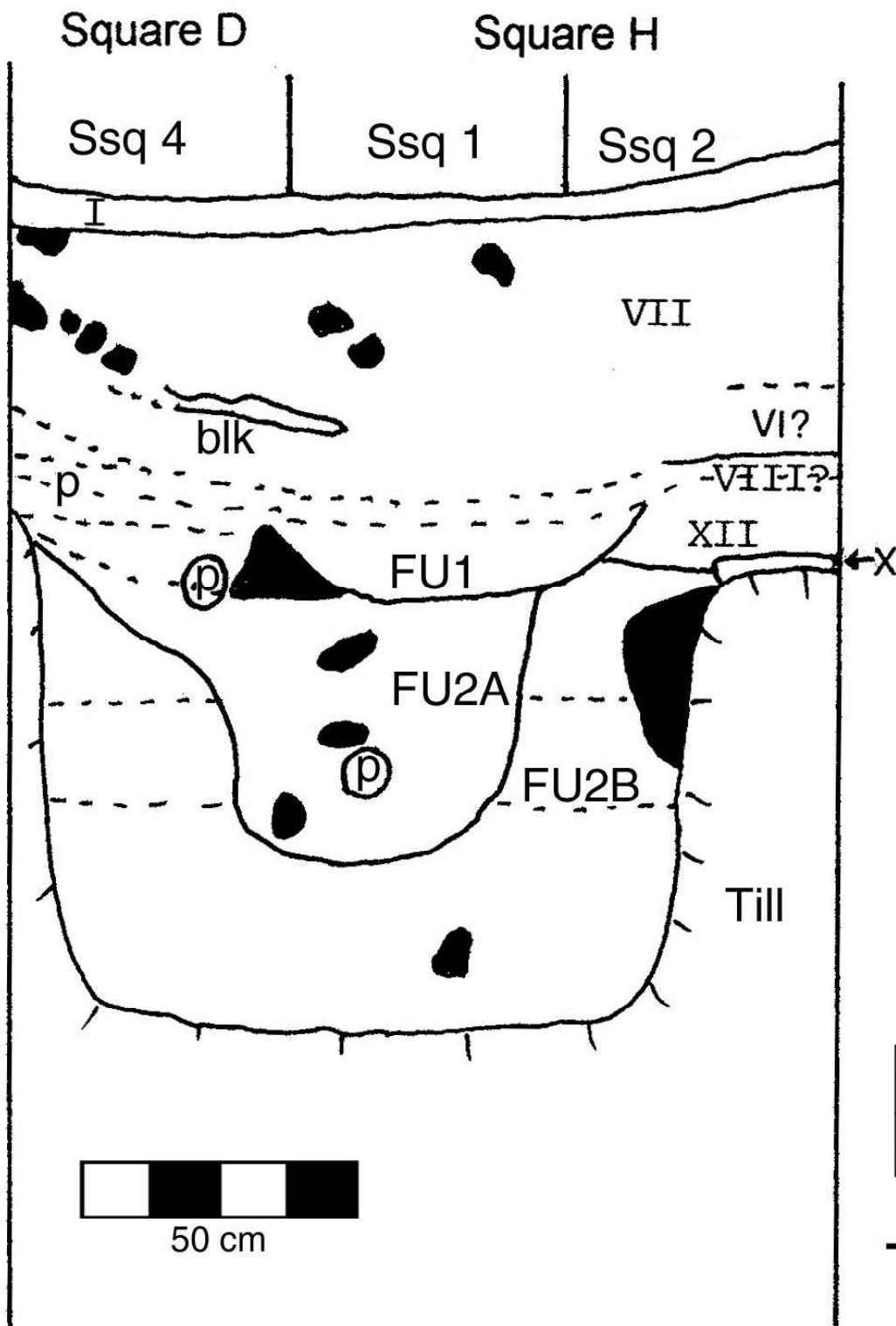


Figure 8. Profile of North Wall of Squares G and C



- 1. Plateau point
- 2. Plateau point
- 3. Plateau point
- 4. Biface
- 5. Abrading stone

Figure 9. Profile of Cache Pit (Feature 6)



blk - Black band  
 p - Plateau point  
 (K) - Kamloops point

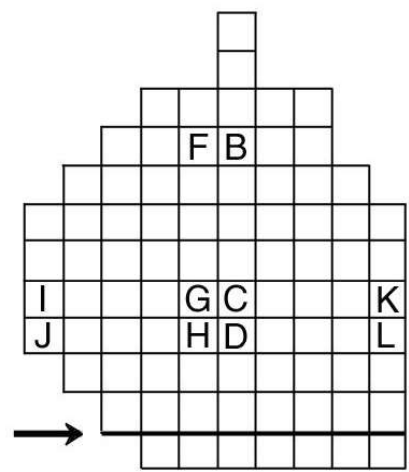


Figure 10. Distribution of Cultural Remains on Living Surface in Stratum I  
Inside Rim

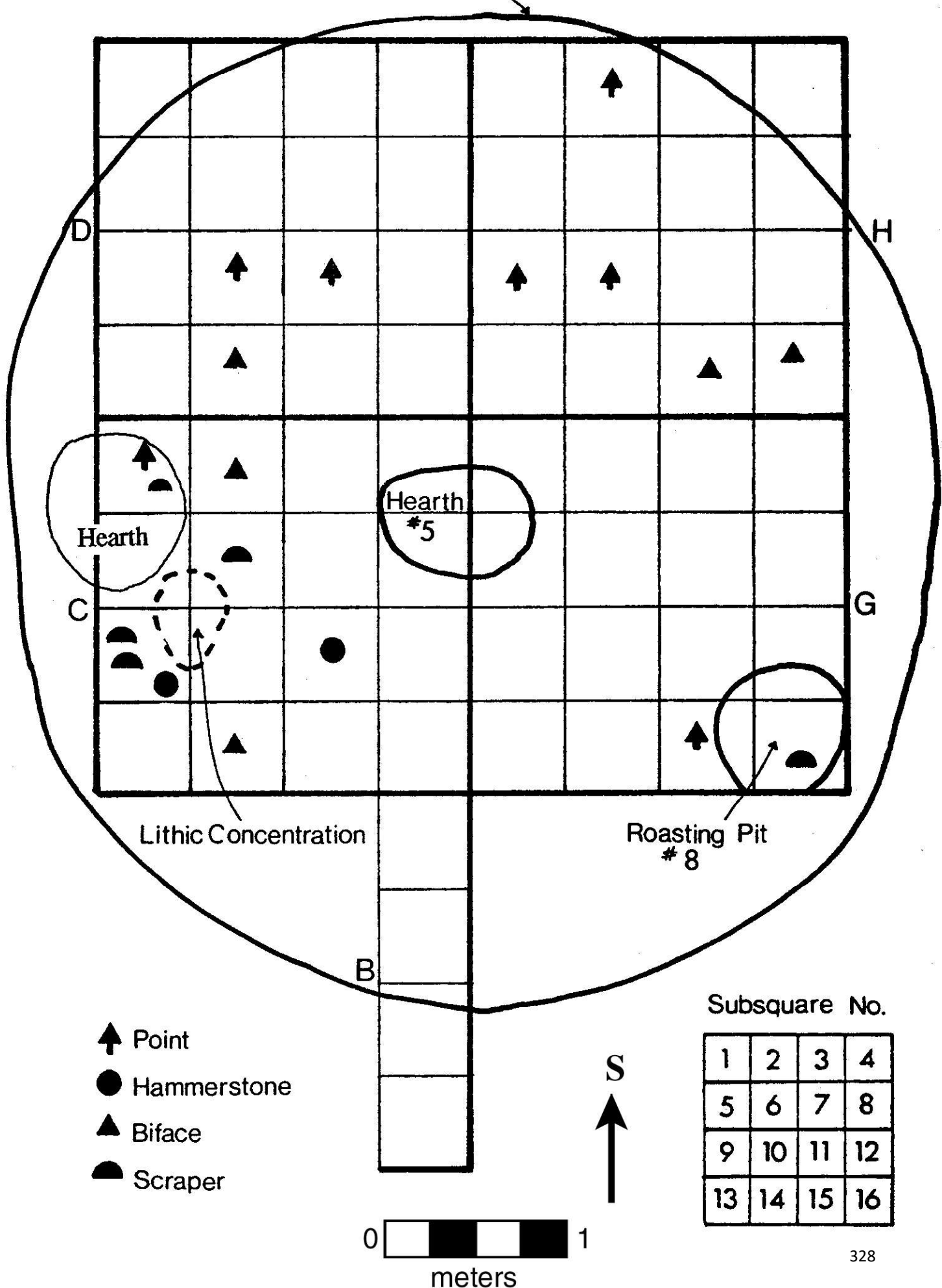
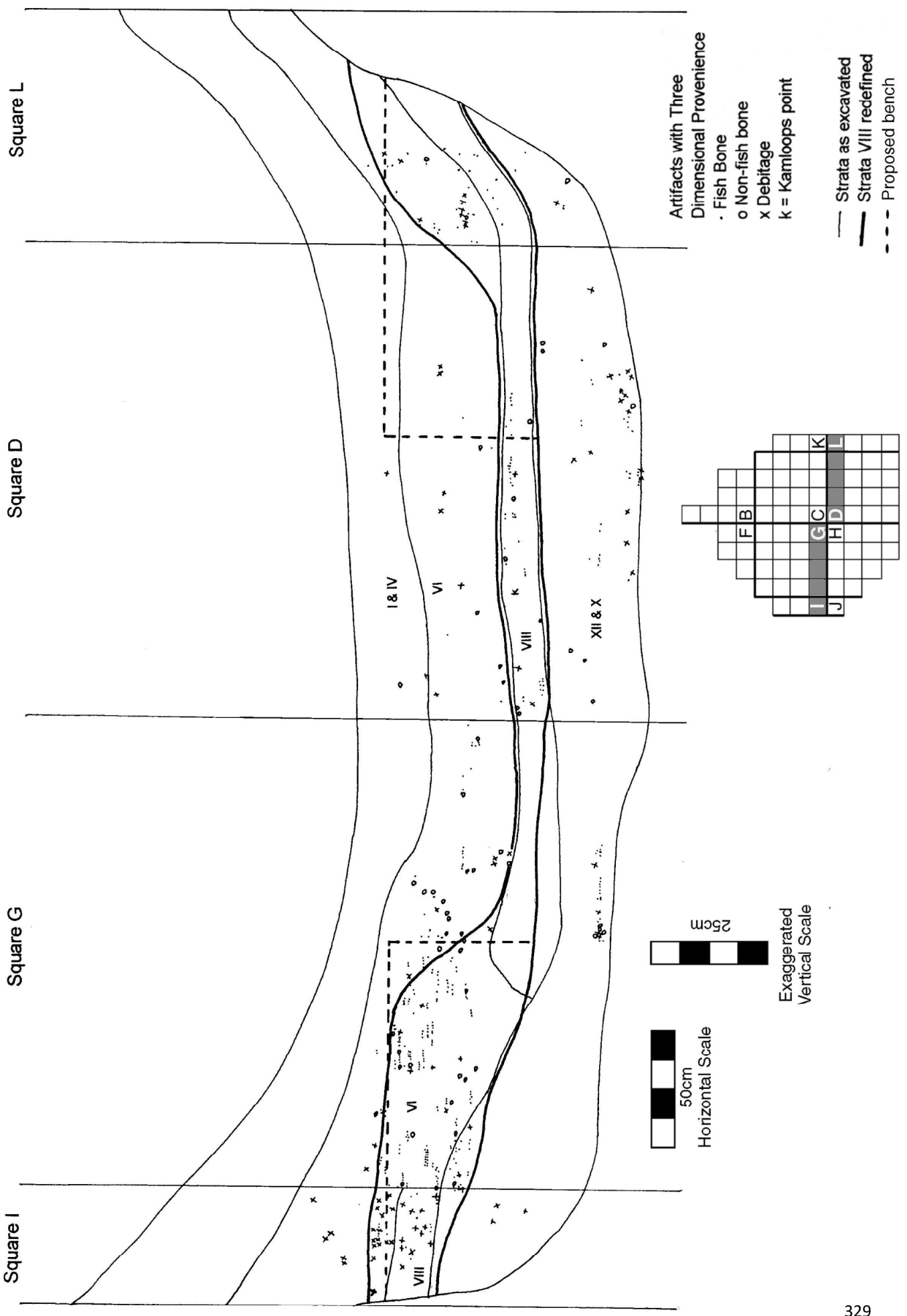
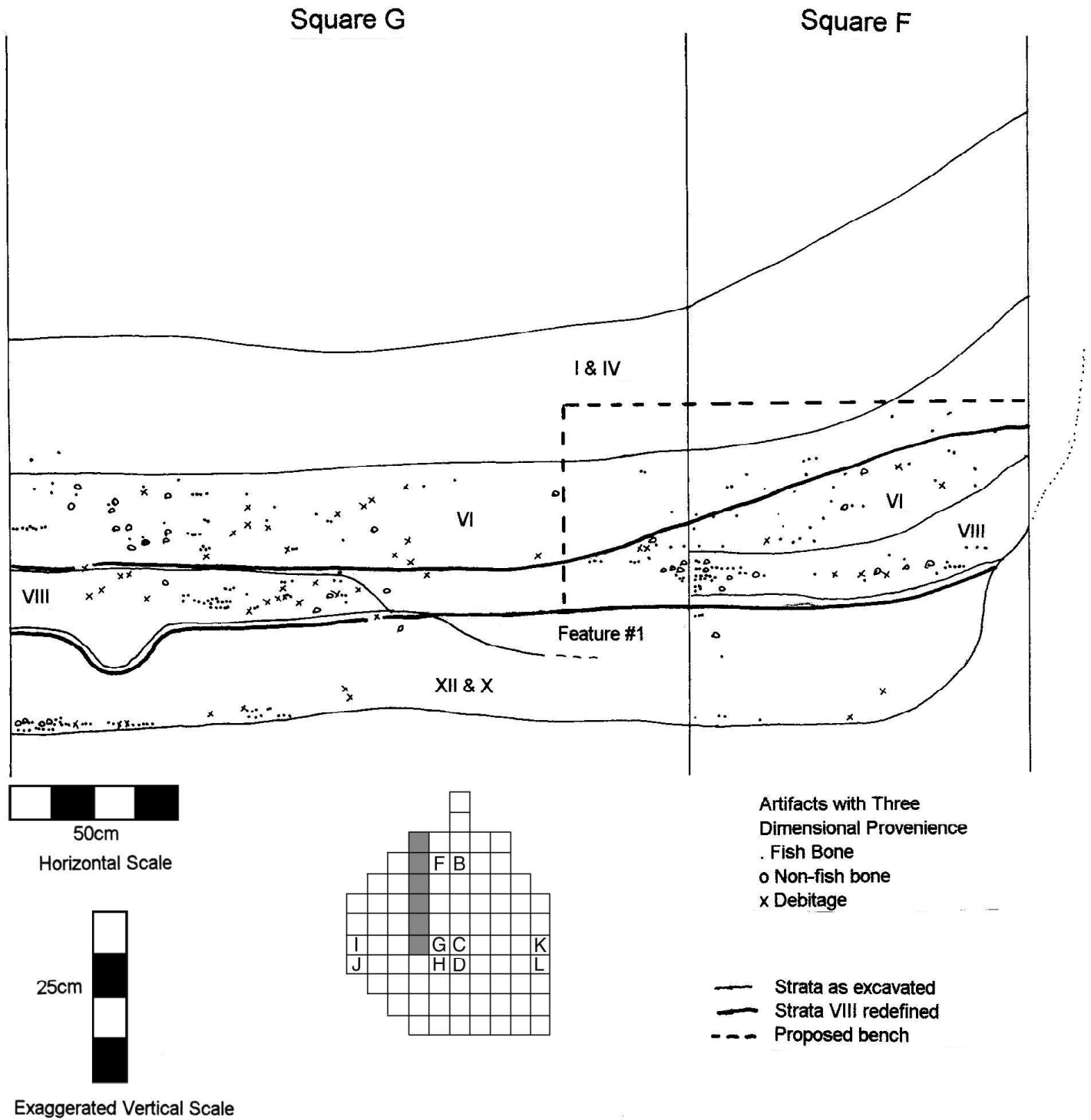




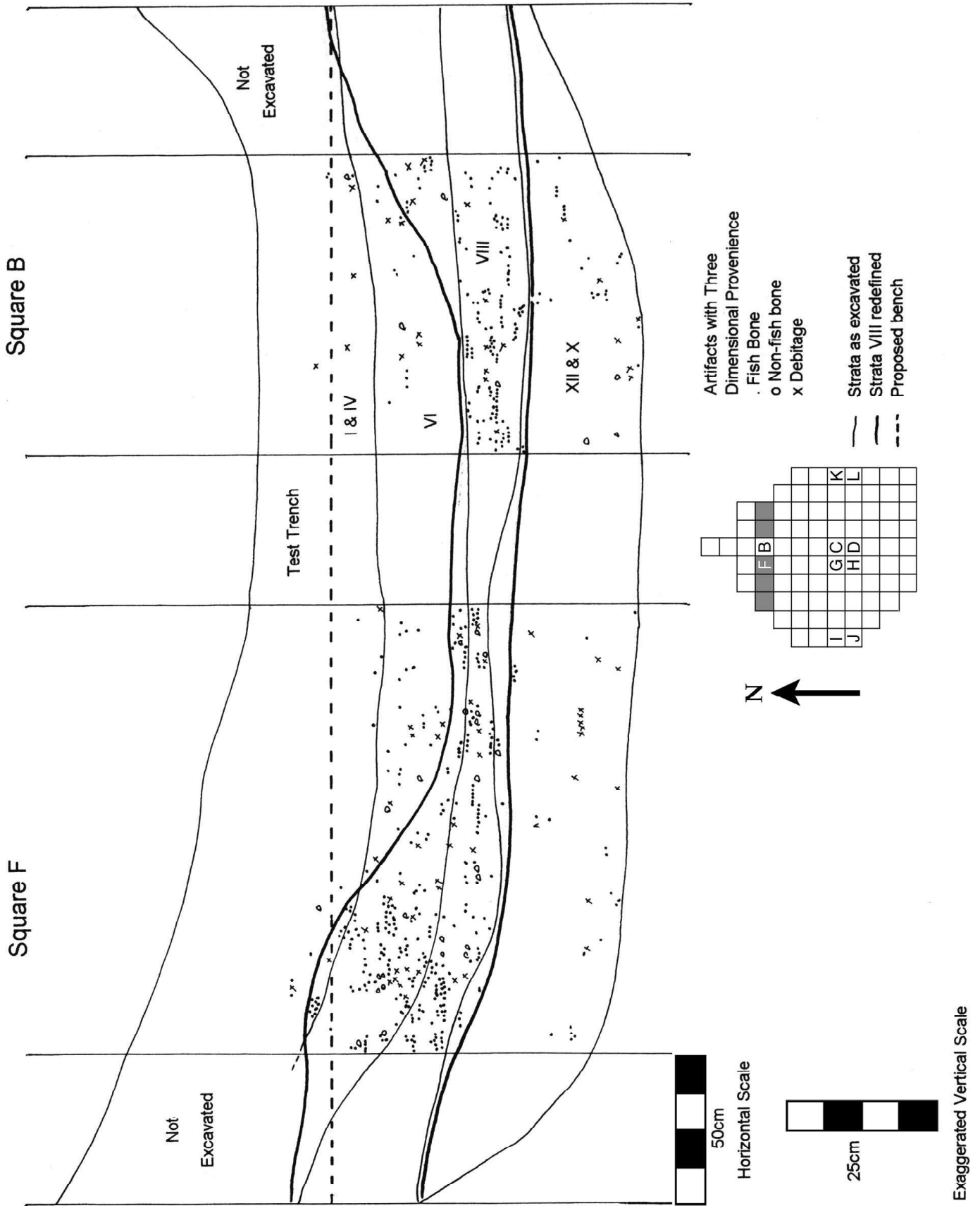
Figure 11. Profile of South Wall of Squares I, G, C, and L Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares



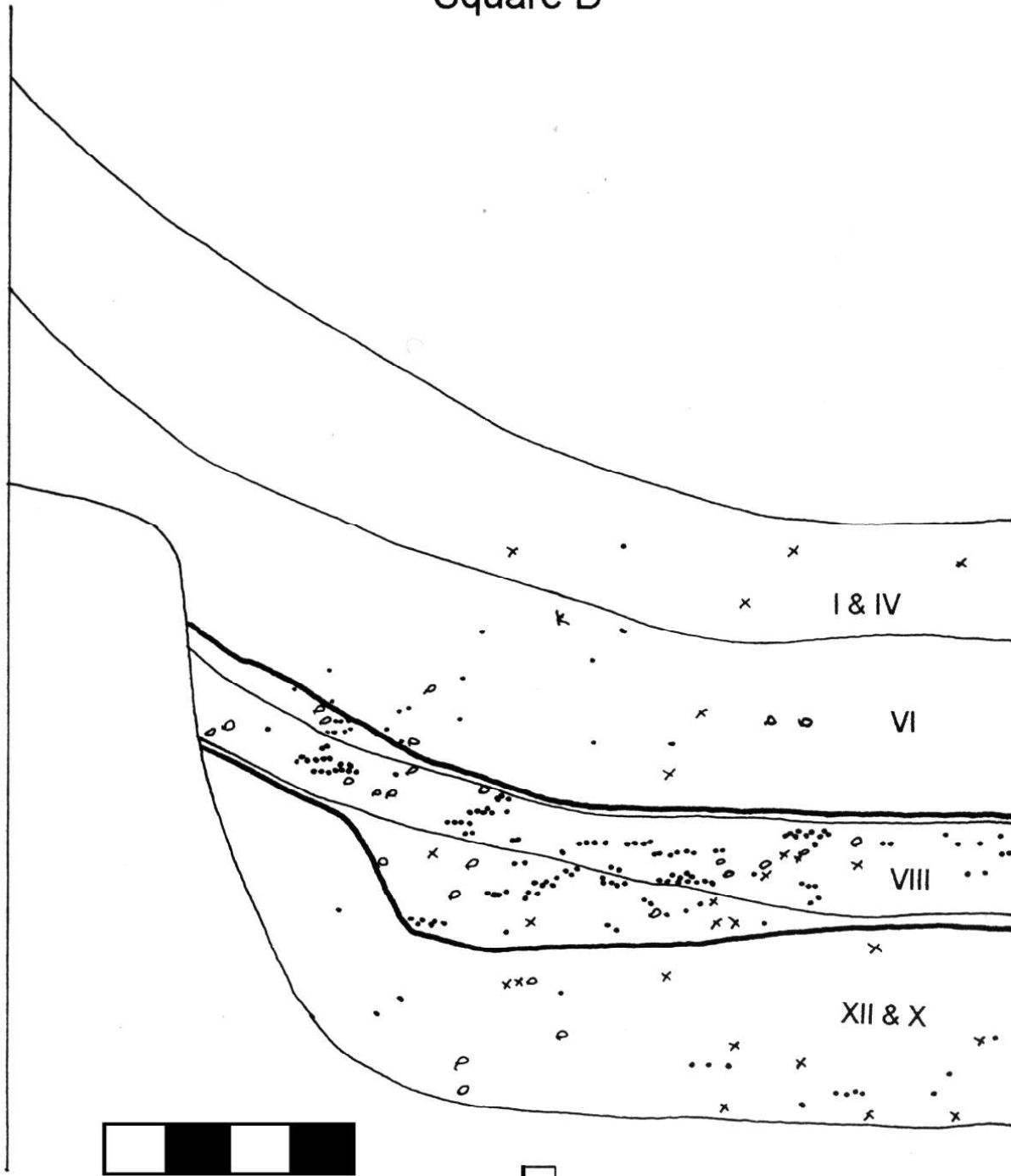
**Figure 12. Profile of West Wall of Squares G and F (at 0.5 W) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares**



**Figure 13. Profile of South Wall of Squares F and B Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares**



# Square D



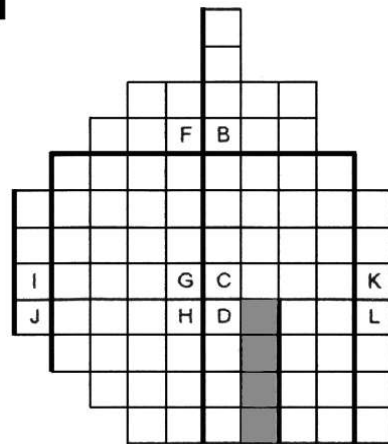
50cm

Horizontal Scale



25cm

Exaggerated  
Vertical Scale



Artifacts with Three  
Dimensional Provenience

• Fish Bone

o Non-fish bone

x Debitage

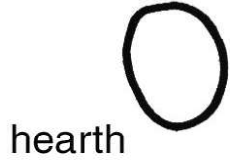
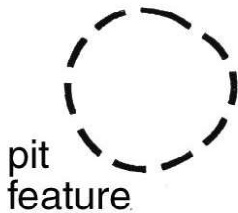
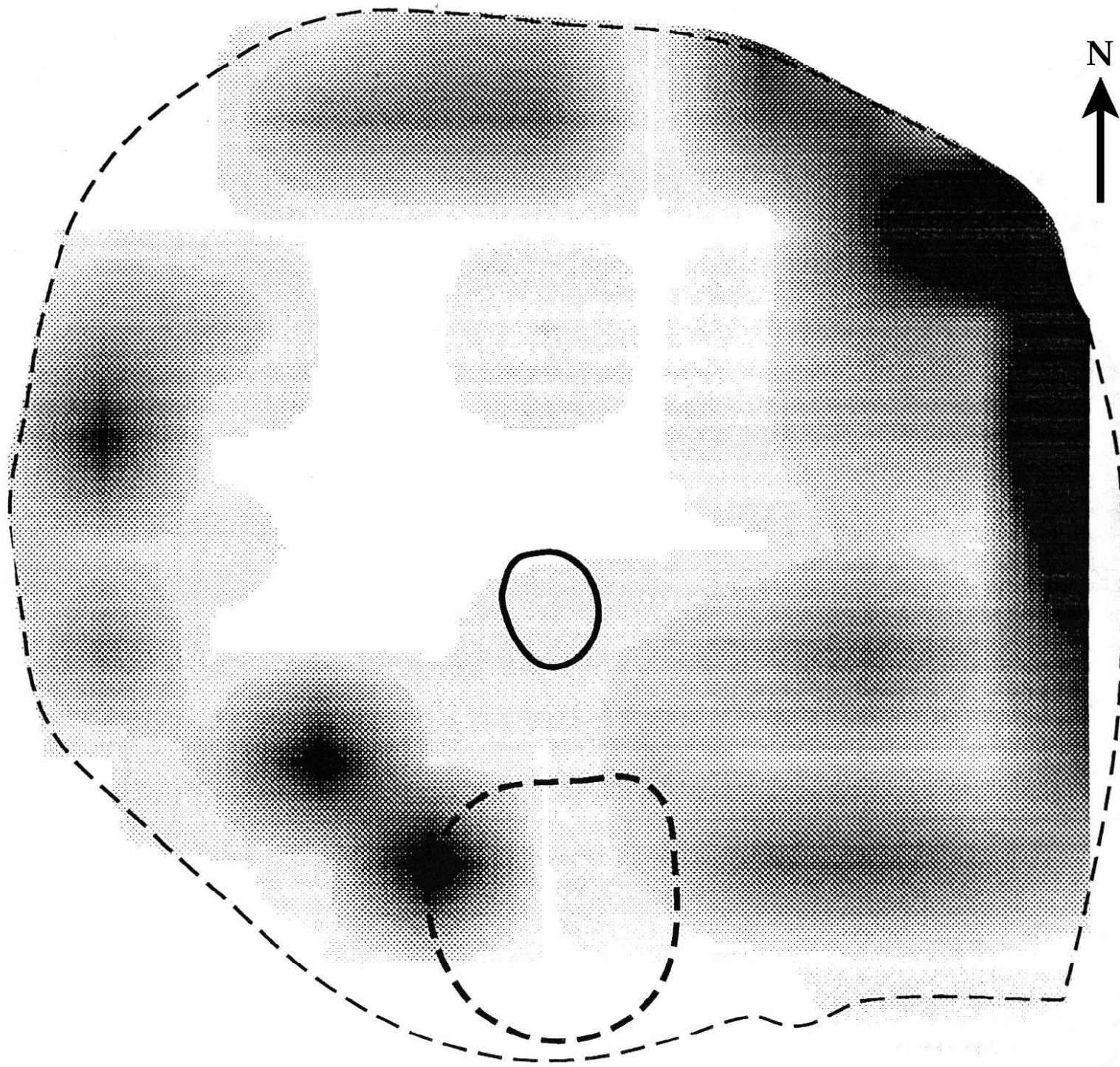
k = Kamloops point

— Strata as excavated

— Strata VIII redefined

Figure 14. Profile of East Wall of Square D (at 1E) Showing Vertical Distribution of Cultural Material (with provenience) in Adjoining Subsquares

Figure 15. Distribution of Fire Altered Rocks in Strata VI and VIII



Approximate frequencies of fire-cracked rocks represented by different shades

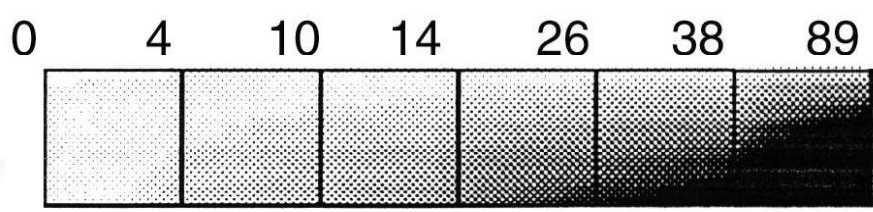




Figure 16. Distribution of Debitage in Strata VI and VIII

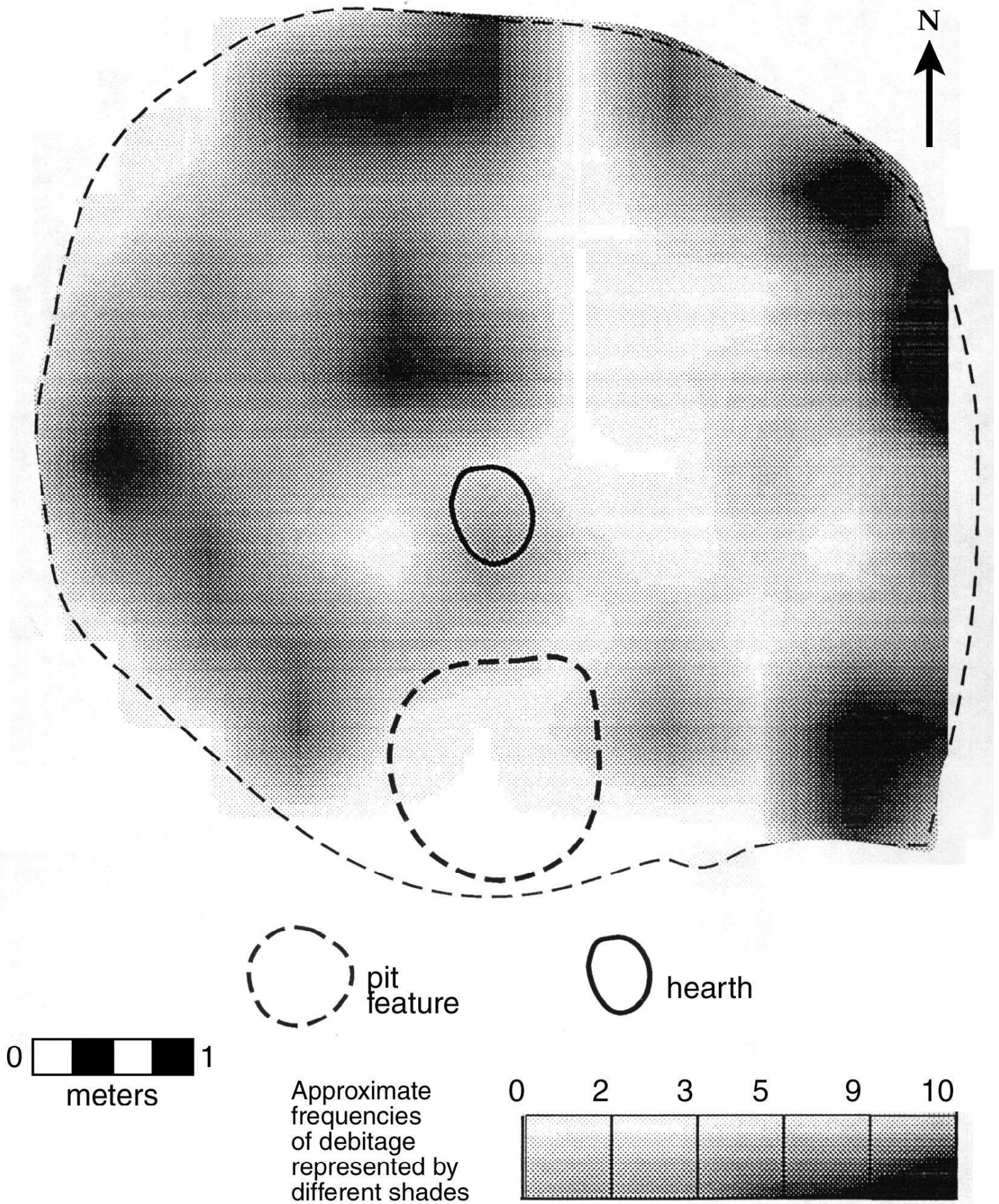


Figure 17. Distribution of Modified Artifacts in Strata VI and VIII

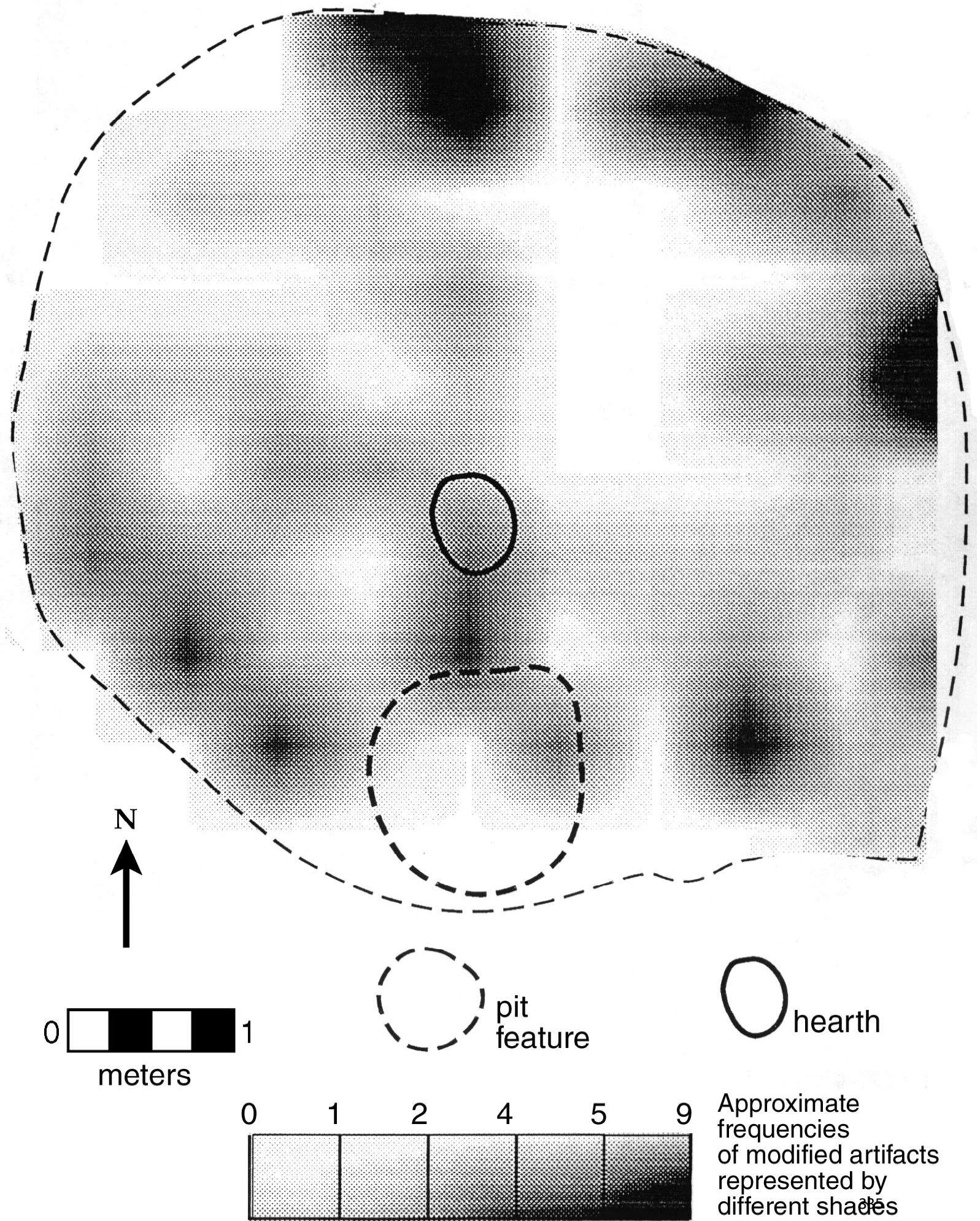


Figure 18. Distribution of Fish Remains in Strata VI and VIII

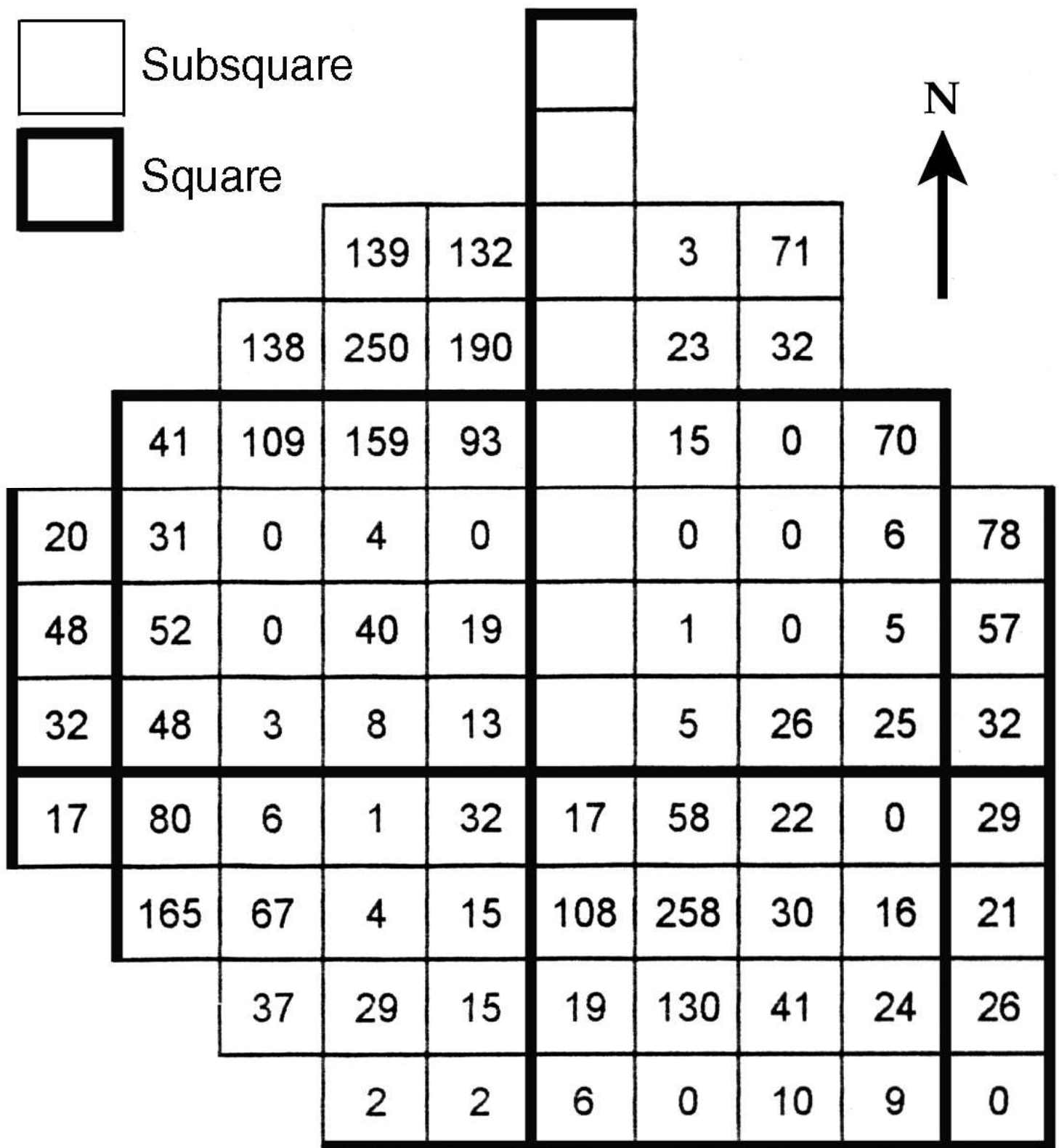




Figure 19. Distribution of Other Faunal Remains in Strata VI and VIII

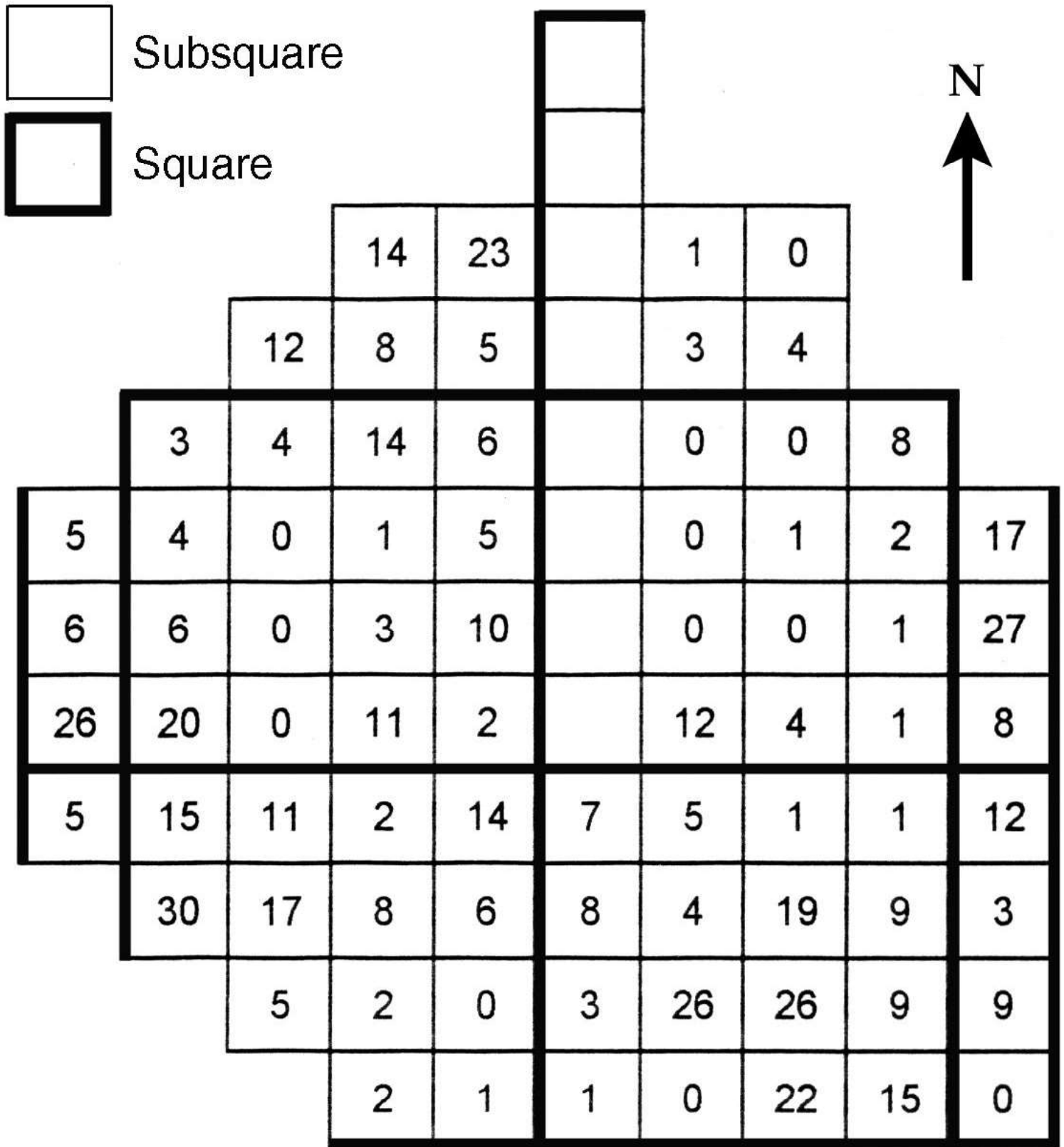


Figure 20. Distribution of Rocks in Strata VIII and XII

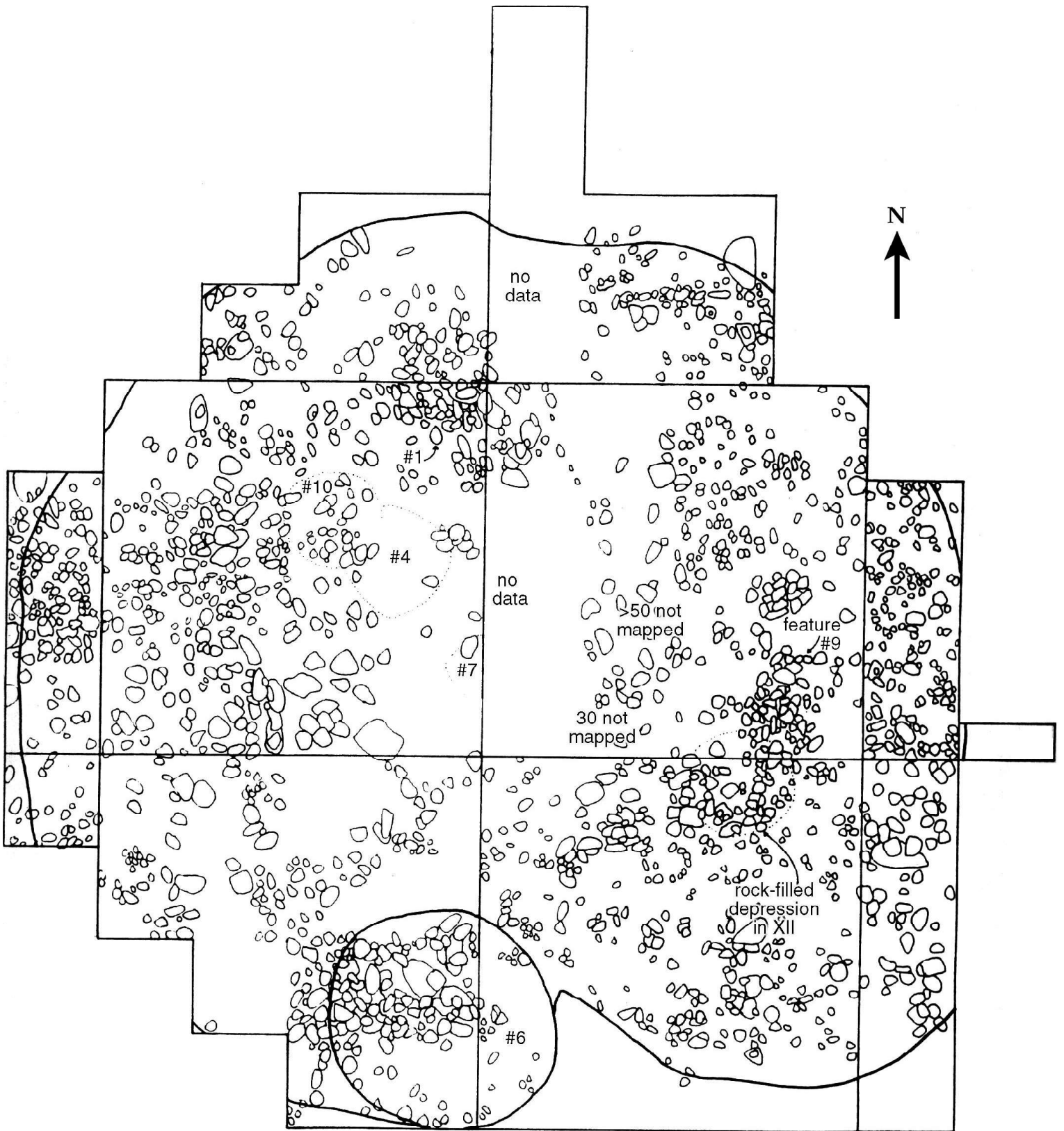


Figure 21. Reconstruction of Activity Areas in Stratum VIII

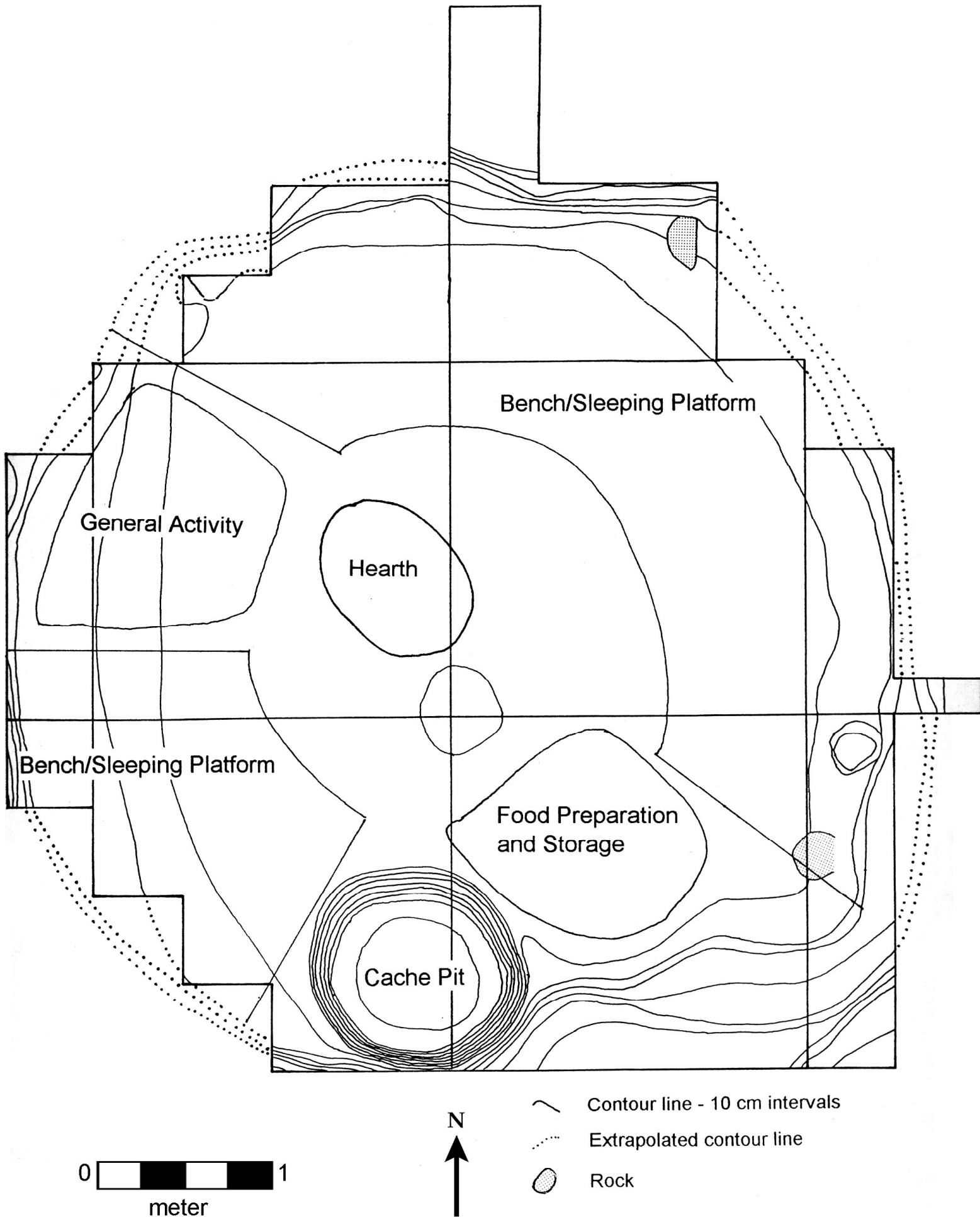


Figure 22. Distribution of Fire Altered Rocks in Stratum X

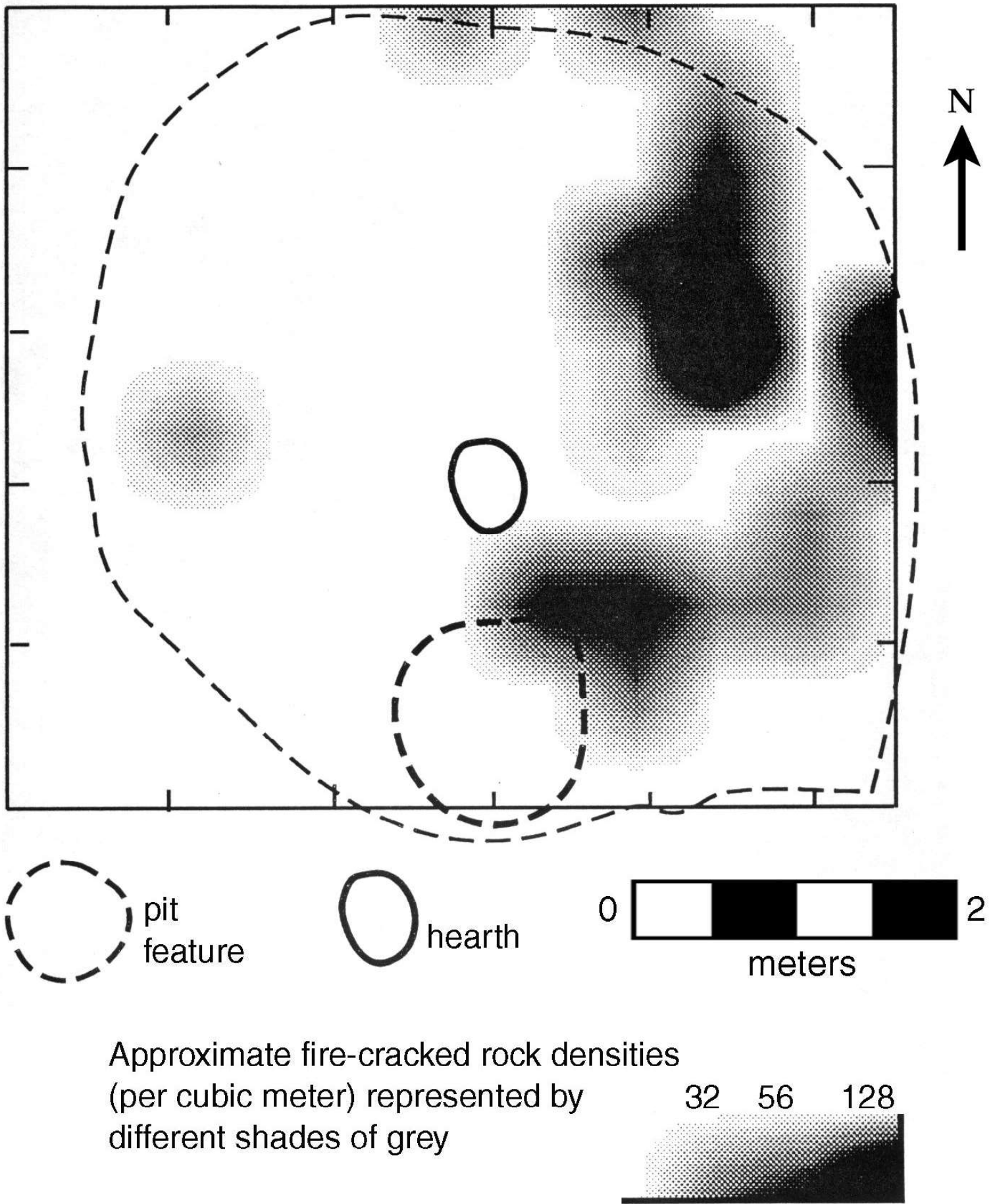


Figure 23. Distribution of Debitage in Stratum X

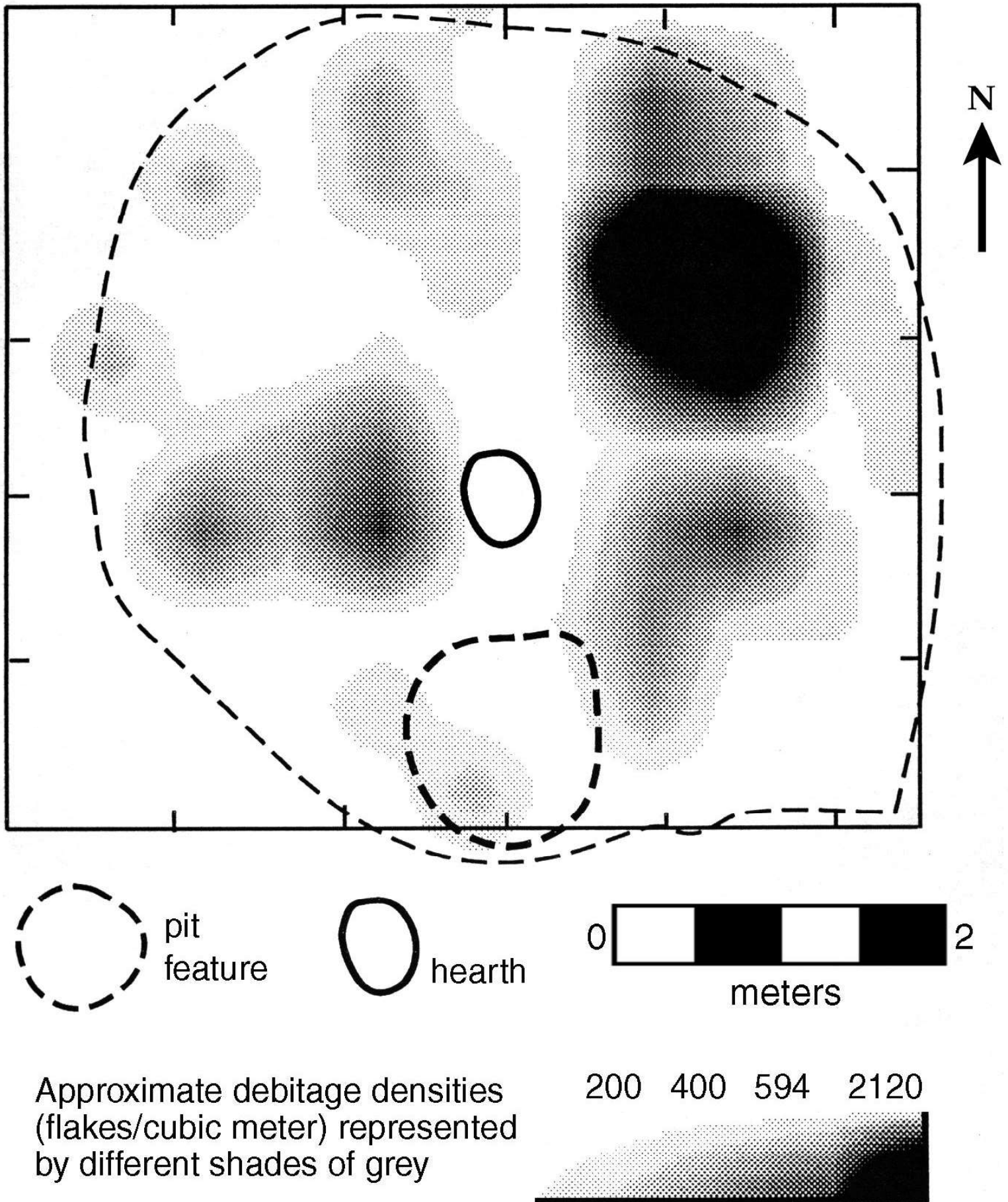




Figure 24. Distribution of Modified Artifacts in Stratum X

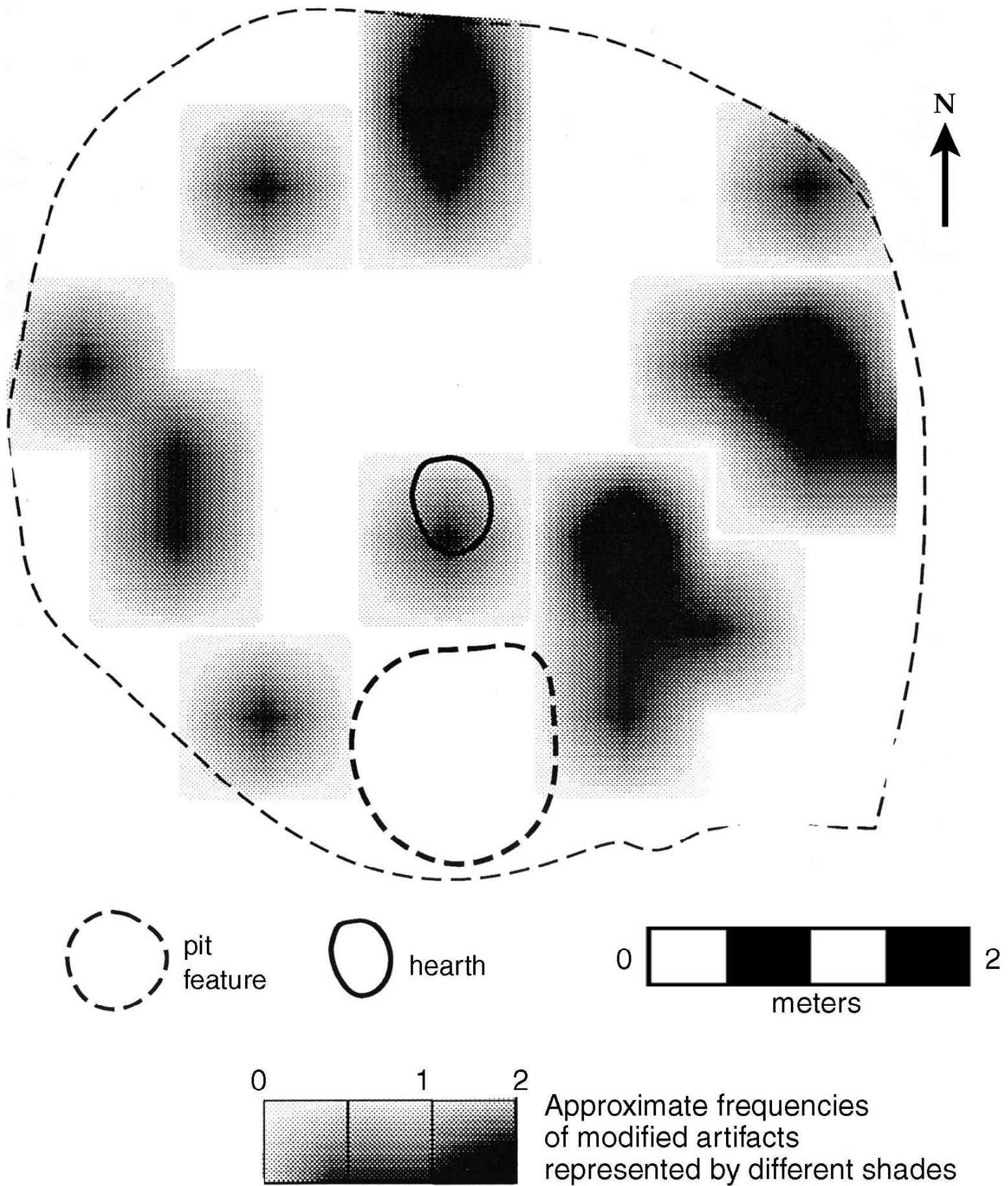


Figure 25. Distribution of Fish Remains in Stratum X

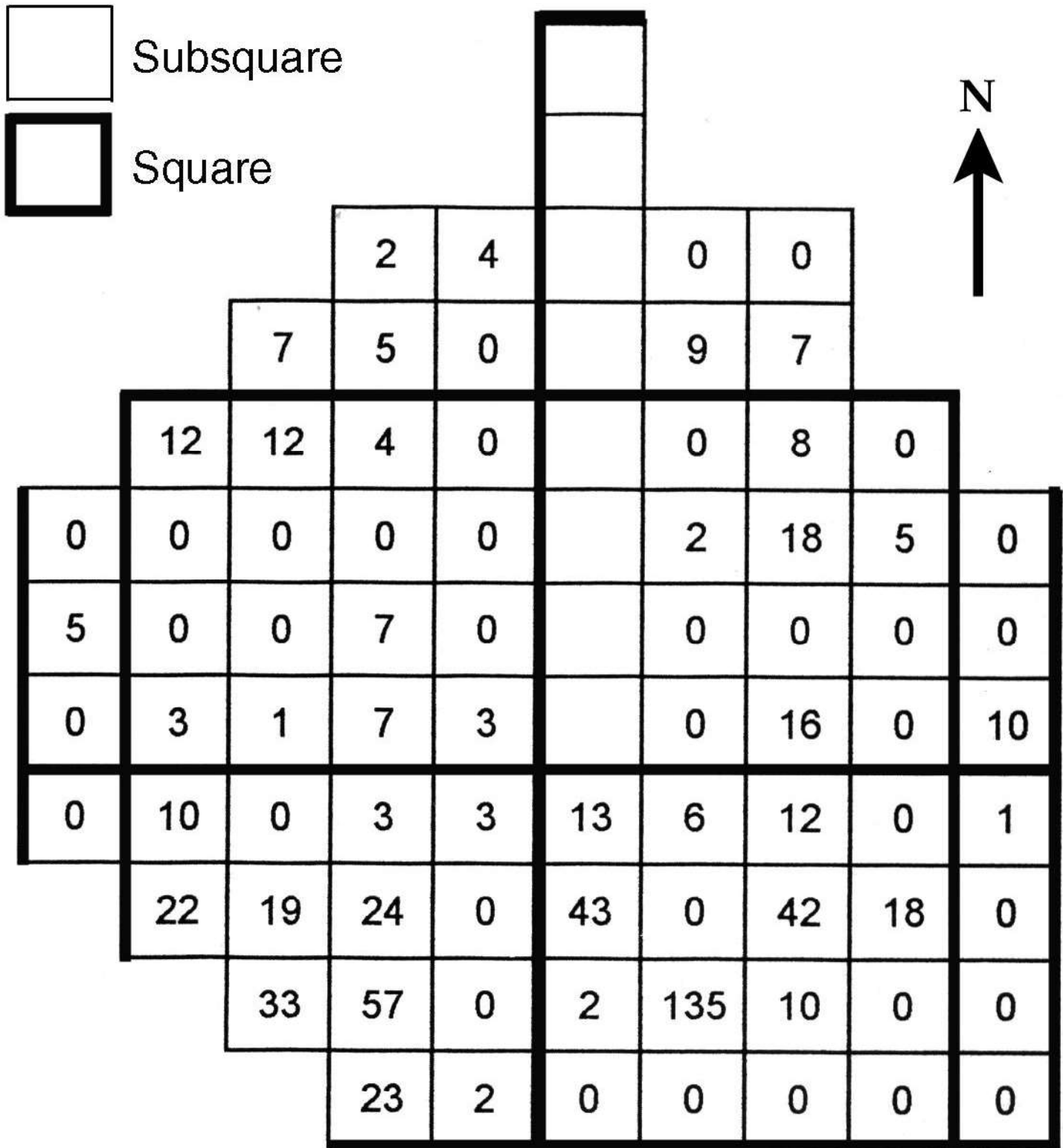


Figure 26. Distribution of Other Faunal Remains in Stratum X

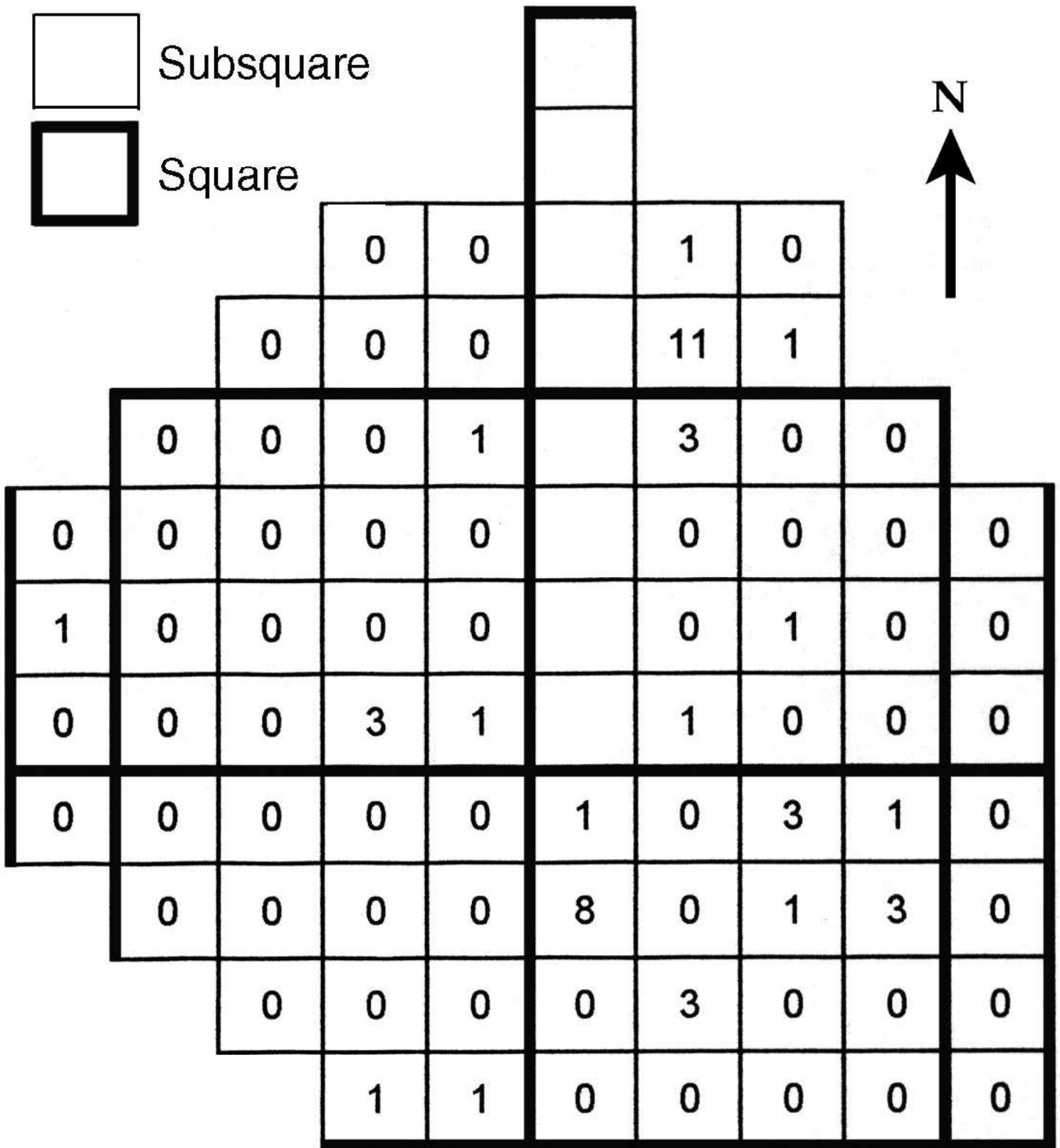
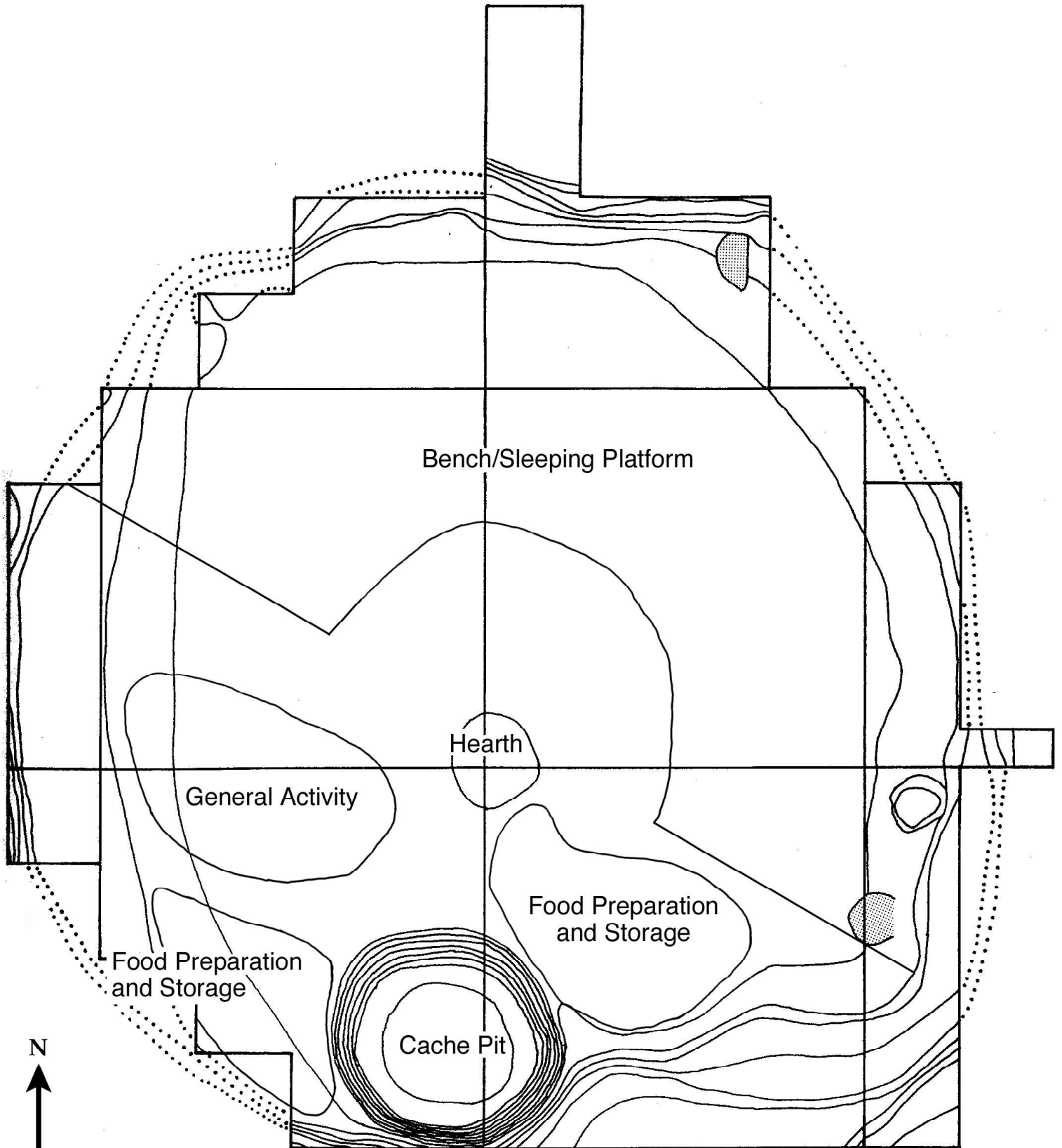




Figure 27. Reconstruction of Activity Areas in Stratum X



~ Contour line - 10 cm intervals

⋯ Extrapolated contour line

● Rock

Figure 28. Histogram of Modified Artifacts in Strata VI and VIII

