Anomaly Analysis

Background Research

Dickens used Middle Range Theory (Binford 1978) to investigate what evidence the fill within pit features can provide about season of abandonment and the filling processes that people used once the features had ceased to served their original function (Dickens 1985). He used botanical remains to test the hypothesis related to seasonality and filling. Dickens main thesis was that if people designed a feature to fulfill a specific function, it was probable that the feature would be abandoned, become a potential receptacle for refuse within seasonal parameters, and that while the fill may not directly relate to the function, it may relate to the circumstances surrounding abandonment and therefore indirectly to it (Dickens 1985:35) By demonstrating the potential for seasonal patterning in feature fill, many possibilities become clear for investigating activity variability within specific sites and comparing activities between sites and over time.

Archaeologists encountered the features that Dickens investigated at sites in the South Appalachian Province in the states of Alabama, North Carolina, Tennessee, Georgia and South Carolina. The 22 features used in this study fell within a total of eight feature types (Table 1) (Dickens 1985:38-40):

Table 1. Feature types identified by Dickens (1985)

Type	Size	Orifice shape	Depth	Profile	Other
1	Small (60-140 cm)	Circular	Deep (60-130 cm)	Strait-sided to Bell-shaped	Occasionally with rock slab cover
2	Large (160-280 cm)	Circular to Oval	Shallow (20-60 cm)	Basin-shaped	
3	Large (5-10 m)	Square to rectangular	Shallow (10-40 cm)	Basin or dish-shaped	Associated with hard-packed floors, hearths, post molds
4	Small (40-100 cm)	Circular	Shallow (5-10 cm)	Basin-shaped	May be lined with rocks or burnt clay and associated with Type 3
5	Medium to wide (100-200 cm)		Shallow (10-60 cm)	Strait-sided or basin-shaped	May have burnt areas or FCR
6	Ditch or Linear pit (120-180 cm wide)		Shallow (30-80 cm)	Sloping sides	May have adjacent post mold alignments

Table 1. (Cont.)

Type	Size	Orifice shape	Depth	Profile	Other
7	Small (5-30 cm)	Circular	Shallow to medium (10-120 cm)	Rounded to pointed bottom, strait sides	May occur individually, in aligned pattern or within a narrow trench
8	Medium (80-160 cm)	Oval to rectangular	Deep (50-120 cm)	Strait sided or undercut	Contain human remains

Archaeologists date Type 1 features from the Archaic through historic periods and interpret them as "storage pits" for hard seeds and nuts with soft vegetables such as maize being stored above ground in this area due to climatic and pedological features of the study area (Dickens 1985:41). The refuse fill in these features was typically dense and undifferentiated, representing short-term accumulation. Dickens interprets the storage pits large size, small orifices,and proximity to houses as making them highly desirable places to dispose of refuse (Dickens 1985:42). Storage pits may have become undesirable places to store food once they had become water-filled, soured or vermin ridden, transforming their purpose from one of storage to one of disposal. If people used these pits for storing nuts, the likely time for inspection and determination of the suitability for reuse would have been in the fall when the nut harvest would have occurred. By this logic, the same would hold true for pits that people used to store maize and beans, crops also harvested in the fall.

Southern archaeologists identified Type 2 features as occurring on sites dating from the Late Woodland to Historic periods and called them circular basins, shallow basin-shaped pits, and simple pits (Dickens 1985:41). Archaeologists interpret these pits as having been originally dug to acquire clay for architectural construction. An alternate formal identification would be as "borrow pits" (Dickens 1985: 41). These pits would have been available for receiving refuse immediately after people excavated them. Because they were shallow, refuse deposited into them would have been more susceptible to scattering by animals and being affected by erosion and human traffic.

Archaeologists interpreted Type 3 features as house floors with the depression being a natural outcome of repeated cleaning of the living floor (Dickens 1985:41). They interpret Types 4 and 5 as hearths and/ or cooking pits with the smaller versions of these occurring on structural floors and having burnt clay-linings. Larger versions tend to have rock lining and do not occur on living floors, but are found next to structures. Analysis identified pits of this latter type as having functioned as cooking pits (Dickens 1985:41). Archaeologists classify Type 6 features as ditches that either partially or fully enclosed Late Woodland villages and Type 7 features as wall trenches and post holes, very common on Southeastern Late Woodland and historic period sites. Finally, they interpret Type 8 feature as burial pits and generally do not contain associated refuse except in their upper portions (Dickens 1985: 42).

Researchers determined seasonality for all these features through charred plant identification from the feature fill (Dickens 1985:45). Based on the species present, and assuming that people charred the plants soon after harvest, archaeologists can estimate the season of fill Storage pits (Type 1 features) were found to have strong Late Fall to Early Winter profiles.

Wilson tried to show that feature form, function and fill strata are not always strictly related and that archaeologists should attempt to test some of the behavioral implications of the features and the fill within them (Wilson 1985: 60). Wilson's study uses the charred botanical remains recovered from "trash pits" (pits that began as storage pits but that later became convenient places to deposit refuse) and their various fill layers to look at the behavioral activities that "produced the combination of attributes represented in each feature fill zone" (Wilson 1985: 61).

Ward's study attempts correlate storage patterns with artifact distributions present in the plowzone above and around the storage related features themselves (Ward 1985: 87). The plowzone distributions were originally used to determine how well they predicted underlying features and structures. At the Warren Wilson site in North Carolina, a site lacking large storage pits, archaeologists found that Native people deposited ceramic and bone refuse away from structures while lithic debitage and projectile points were found within and next to them (Ward 1985: 92). This was a pattern also noted by Binford at Hatchery West (Binford et al. 1970). At Upper Saratown, also in North Carolina, where large storage pits were present, inhabitants refuse disposal focused on deposition into abandoned storage pits located within or immediately next to structures. Archaeologists characterize the Upper Saratown refuse disposal pattern as secondary or de facto- refuse was routinely swept up and deposited within the abandoned storage pits, or in any convenient hole. Archaeologists recovered a greater amount of pottery from the Warren Wilson site, a fact that archaeologists interpreted as being the result of a more intense occupation over a longer period.

Green and Sullivan highlight the problems with assigning primary functions to excavated pits at archaeological sites. Any speculation of the original pit function based on the pit contexts is apt to have difficulty due to the fact that pits often contain secondary refuse deposits which may not relate to the original function of the pit (Green and Sullivan 1997: 1). They see morphology as being the most direct link to the original function of the pit. They use the Ripley Site in New York state as a test for their theory which eliminates determining pit function for an emphasis on the comparison of pits size between sites as it may relate to the difference sin activities being carried out at sites. Green and Sullivan begin with Stewart's 1975 study that sought to develop a numerical classification of pit features. Using ethnographic and ethnohistoric descriptions of pits, pit sizes and functions, she identified three gross categories of pits:

-Structural (house basins and post molds)
-Fire-related (hearths, earth ovens, parching trenches, boiling pits, and smudge pits)
-Non-fire-related (storage, refuse, borrow, curing, potholders, caches and burials)

Deboer 1988 sees storage pits as indicative of a concealment strategy to protect food supplies from enemies during periods of village abandonment (Deboer 1988: 13). Thus, many storage pits would be indicative of a semi-sedentary habitation patterns where no storage pits would show year round occupation. Green and Sullivan used a rough index of feature size (maximum diameter x maximum depth / 100) to compare features at the Ripley Site (Green and Sullivan 1997: 8). They then placed the pits into one of six pit groups that they identified:

-Group 1 small to medium-sized (18-85 cm), shallow (3-46 cm)
-Group 2 Large (198-318 cm), shallow to medium depth (26-76 cm)

-Group 3 Medium-sized (71-183 cm) medium depth (36-82 cm)
-Group 4 Large (213-315 cm) medium to deep (76-117 cm)
-Group 5 Medium-sized (86-152 cm) deep to very deep (92-137 cm)
-Group 6 Extremely large (381-472 cm) shallow (76-79 cm)

The investigators then compared their findings from the Ripley site with those from known Iroquoian village sites to decide if the Ripley site represents a village or mortuary site. Archaeologists presumed that village occupations would have a range of activities represented in a range of features types. It was also assumed that many of the storage pits would be indicative of a site that was intensely occupied (Green and Sullivan 1997:12). It was found that special purpose sites should have many examples of a limited range of pit and artifact types, as related to the activities that took place there (Green and Sullivan 1997:18). In conclusion it was found that:

1) pit feature assemblages at sites defined as northern Iroquoian village are quite varied
2) large numbers of food storage pits are not necessarily present at all sites interpreted as Iroquoian villages in upstate New York
3) pit assemblages at special purpose, periodically used, or seasonal sites may be more diverse than those at village sites
4) small pits are not limited to habitation sites and may have served a wide variety of functions (Green and Sullivan 1997:18).

Ja-Mar Site Anomalies

Plowing had truncated the anomalies within the project area and were most probably encountered at the deepest point that the plow has penetrated. It can only be speculated how much farther up into what is now the plowzone, the features did originally extend. For example, archaeologists assumed that storage pits originally had a low wall or dam around the periphery of the pit to keep rain and melt water from running into it but, due to plowing, no traces of this remains.

Three gross categories of anomalies are commonly encountered on Eastern Woodland Late Woodland sites: dish-shaped basins, bowl-shaped pits, and silo-shaped pits. Dish-shaped basins have orifices that are at least five times as wide as the basin is deep. They bear a convex exterior surface that forms a gentle arc at the bottom at or near the basins center. Their precise function is not known but Native people used them throughout the Late Woodland Period with most containing charcoal and few being found within house patterns. Kraft identified seventy-seven of these anomalies, 28.3% of the total number of anomalies, at the Tocks island site (Kraft 1975: 69). These basins measured 15 to 84" (38-213 cm) in diameter and two to 18" (5-45.7 cm) deep with an average being 6.4" (16.2 cm) with about 50% containing any cultural material. These basins may be the result of natural processes such as dogs digging places to lay or the truncated evidence of erosion resulting from natural or cultural processes, such as drip lines or worn paths. Native people may have used them alone or with deeper pits as smudge pits for smoking hides or people may have lined with skins and used them with heated stones for boiling liquids.

Archaeologists excavated 241 anomalies (not including post molds) across the project area (Table 2). In addition to these 241 anomalies, testing encountered two human

Table 2. Anomalies from the Muttock-Pauwating site Data Recovery excavations

	Natural	**LSB**	**MSB**	**SSB**	**SMP**	**MMP**	**LMP**	**LDP**	**MDP**	**FCR**	**Hist**	**Total**
L1H	4	7	14	2		3		1			1	**32**
L2H		1	1	2		18	1	1		2		**26**
L2S							1					**1**
L4H	4	7	6	5		7		1		2		**32**
L4S	2	2	3	2		14	2	1		2		**28**
L5H	5	3	7	2		8	1	1		4		**31**
L6H	1	5	5	4		2	1	5	1			**24**
L6S		1				4				1		**6**
L7H	2	1	2	1		3		1				**10**
L7HN	2	2	1			5		1		2		**13**
L7SN	1	5	7	2		3	2					**20**
L8HN	1	1	3	1	1	5						**12**
L8S	1			1		2	2					**6**
Total	**23**	**35**	**49**	**22**	**1**	**74**	**10**	**12**	**1**	**13**	**1**	**241**

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

encountered one historic feature, other than suspected post holes. This was a stone lined cellar hole in L1HN that was completely excavated (see report section on historic artifacts). Analysis subdivided basins into large (over 70 cm in diameter), medium (40-68 cm in diameter), and small (under 38 cm in diameter). It divided pits into medium depth and deep pits and these subcategories were further divided in large, medium, and small-size pits. Descriptions, photographs and drawings of each anomaly are in Appendix G.

Basin Shaped Anomalies

Basin-shaped anomalies from the Ja-Mar project area were the most common type of anomaly identified with a total of 102 being found unevenly distributed across the project area (Table 3) (**Figures 1-8**).

Table 3. Basin-shaped anomalies

Location	LSB	MSB	SSB	Total
L1H	7	14	2	**23/ 71.9%**
L2H	1	1	2	**4/ 15.4%**
L4H	7	6	5	**18/ 56.3%**
L4S	2	3	2	**7/ 25%**
L5H	3	7	2	**12/ 38.7%**
L6H	5	5	4	**14/ 58.3%**
L6S	1			**1/ 16.7%**
L7H	1	2	1	**4/ 40%**
L7HN	2	1		**3/ 23%**
L7SN	5	7	2	**14/ 70%**
L8HN	1	3	1	**5/ 41.7%**
L8S			1	**1/ 16.7%**
Total	**35**	**49**	**22**	**102**

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin

Archaeologists identified these anomalies as basin-shaped because they were wider than deep with depths between 5 and 20 cm, with gradually sloping side walls. Shallow basins accounted for between 15.4% and 71.9% of the total anomaly count in an individual impact area with L1H followed by L7SN having the highest occurrences and L2H followed by L6S and L8S as having the lowest occurrences The average percentage of occurrence was 39.5%. Archaeologists recovered a limited variety of artifacts recovered from basin-shaped anomalies, consisting of debitage, pottery, fire-cracked rock (FCR) charcoal, and calcined bone (Table 4). Several of the basin-shaped anomalies also contained

Table 4. Artifacts associated with basin-shaped anomalies

Contents	Small Basin	Medium Basin	Large Basin
NCM	17/ 77.2%	8/ 16.3%	3/ 8.3%
Debitage	4/ 80%	30/ 73%	28/ 84.9%
Pottery	1/ 20%	11/ 26.8%	17/ 51.5%
FCR	1/ 20%	12/ 29.3%	14/ 42.4%
Charcoal	2/ 40%	14/ 34.1%	17/ 51.5%
Calcined Bone	1/ 20%	10/ 51.5%	5/ 15.2%
Total	**22/ 5 with artifacts**	**49/ 41 with artifacts**	**36/ 33 with artifacts**

no cultural material at all (NCM) with the lack of cultural material being directly related to the size of the anomaly, the smaller the anomaly the more likely it was to be sterile. This may relate to the length of use and ease of filling a small basin versus a large one. Larger basins may also have remained open and visible longer than smaller ones. Alternately if cultural material is present, it may relate to the uses for which people created them. Debitage was common in all basins, being slightly less common in

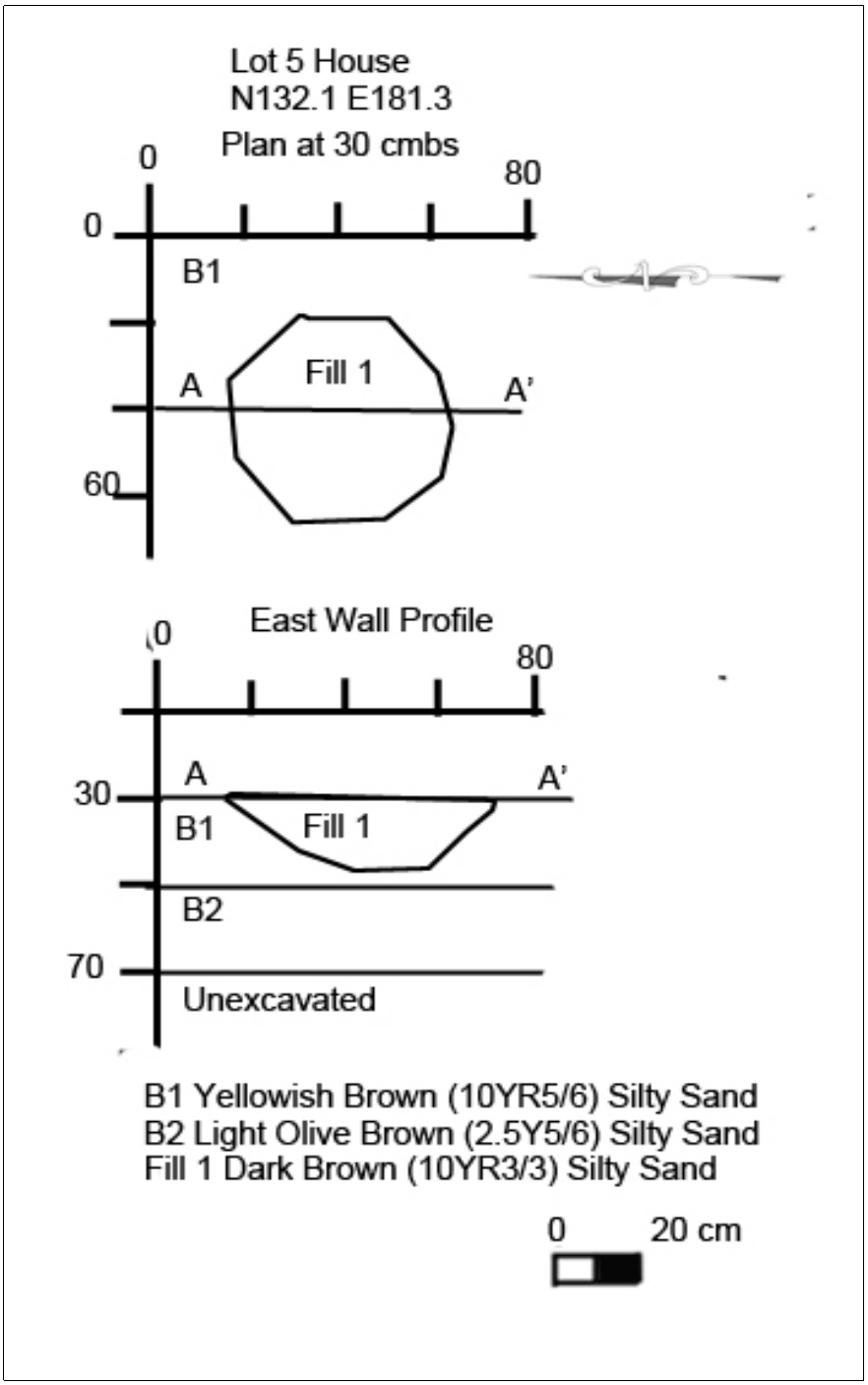


Figure 1. Representative example of basin-shaped anomaly

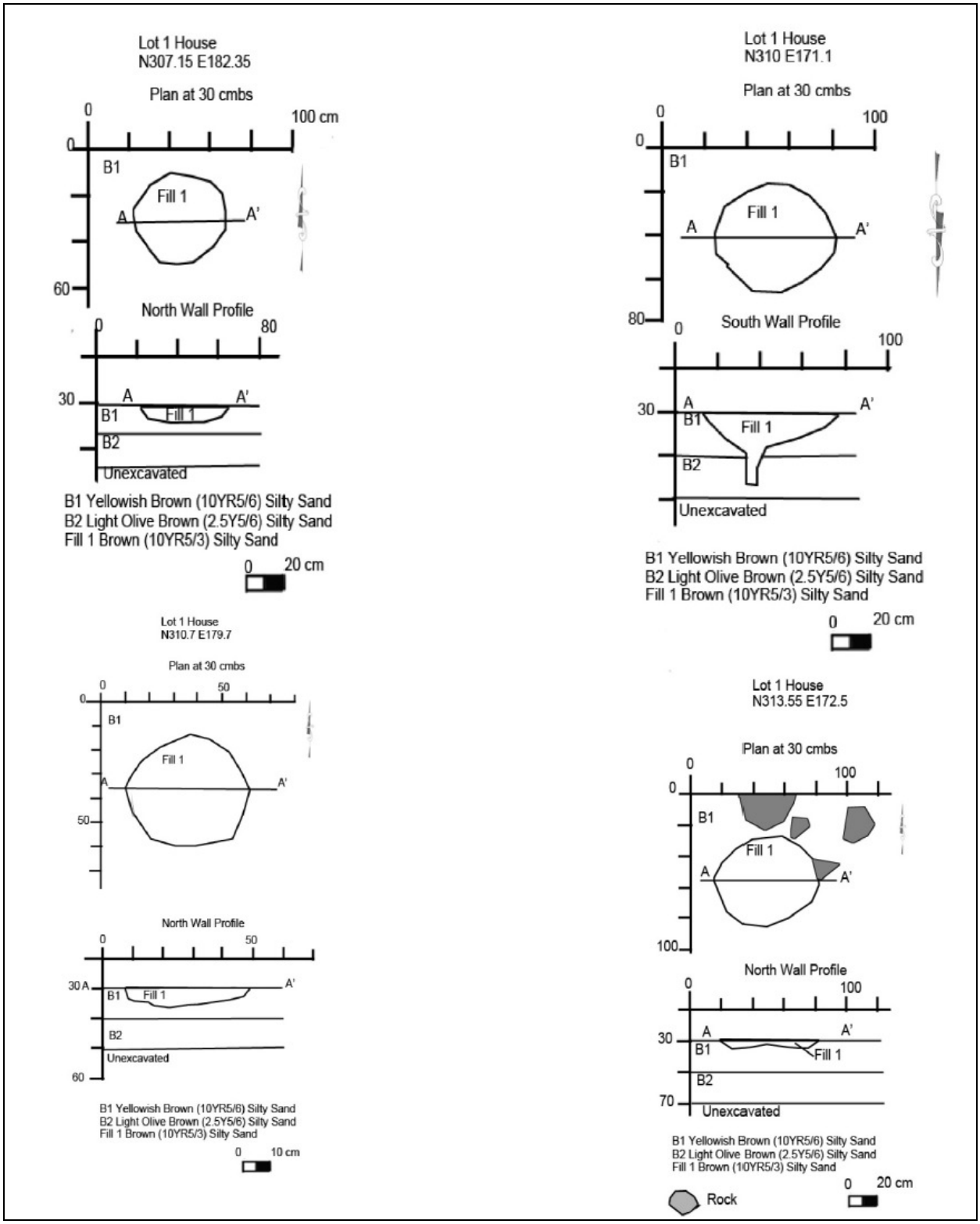


Figure 2. Lot 1 Basin-shaped anomalies

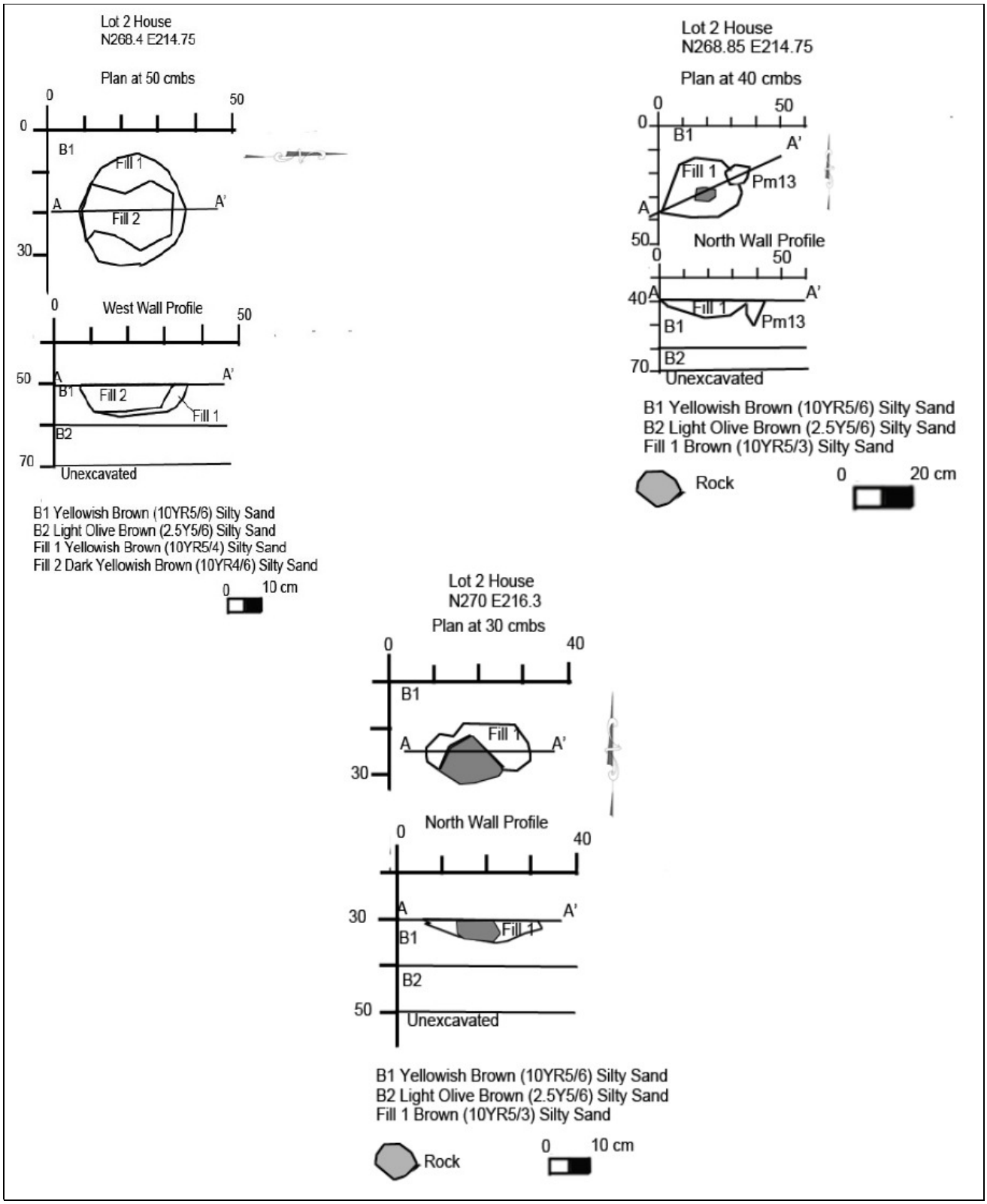


Figure 3. Lot 2 Basin-shaped anomalies

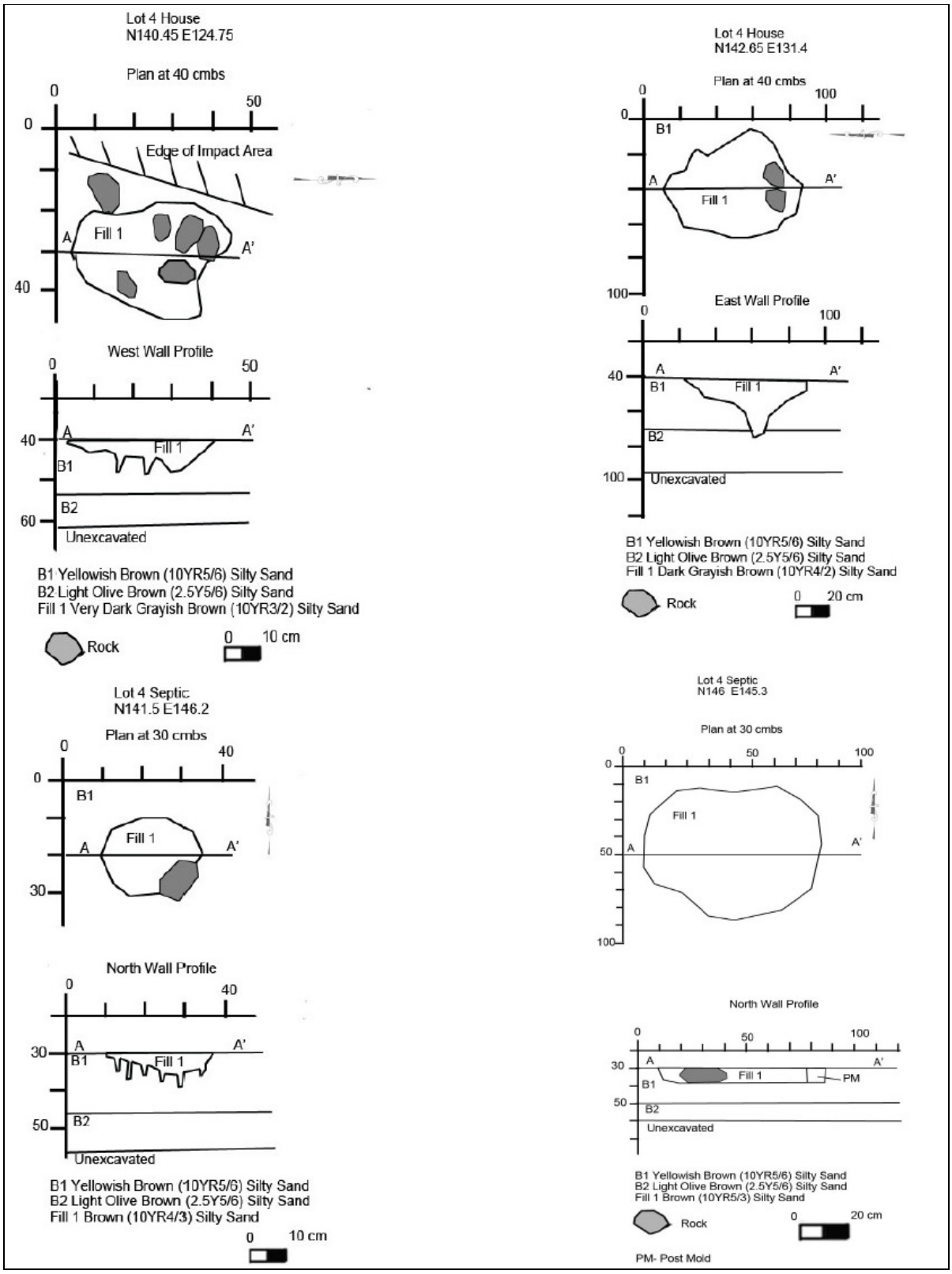


Figure 4. Lot 4 Basin-shaped anomalies

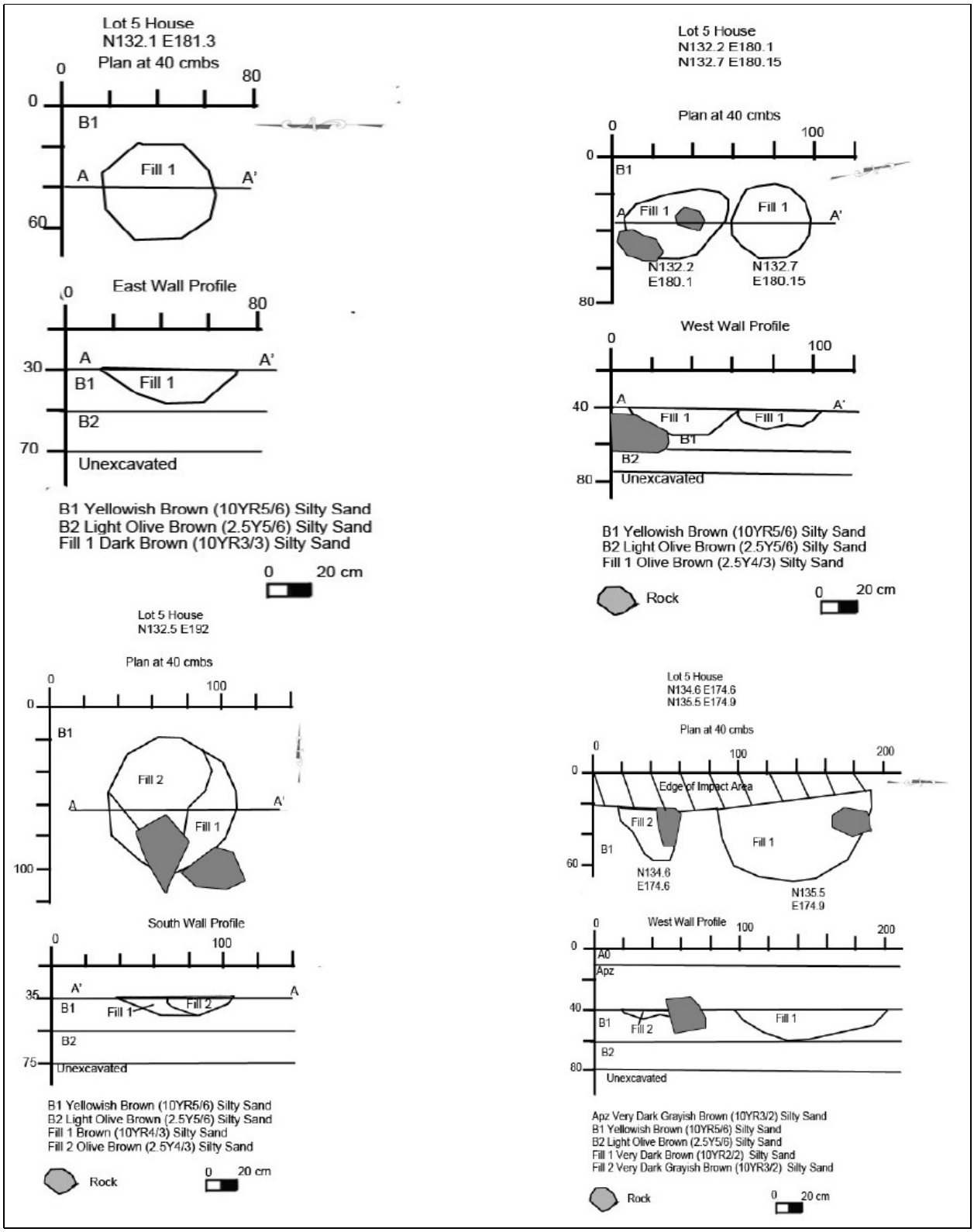


Figure 5. Lot 5 Basin-shaped anomalies

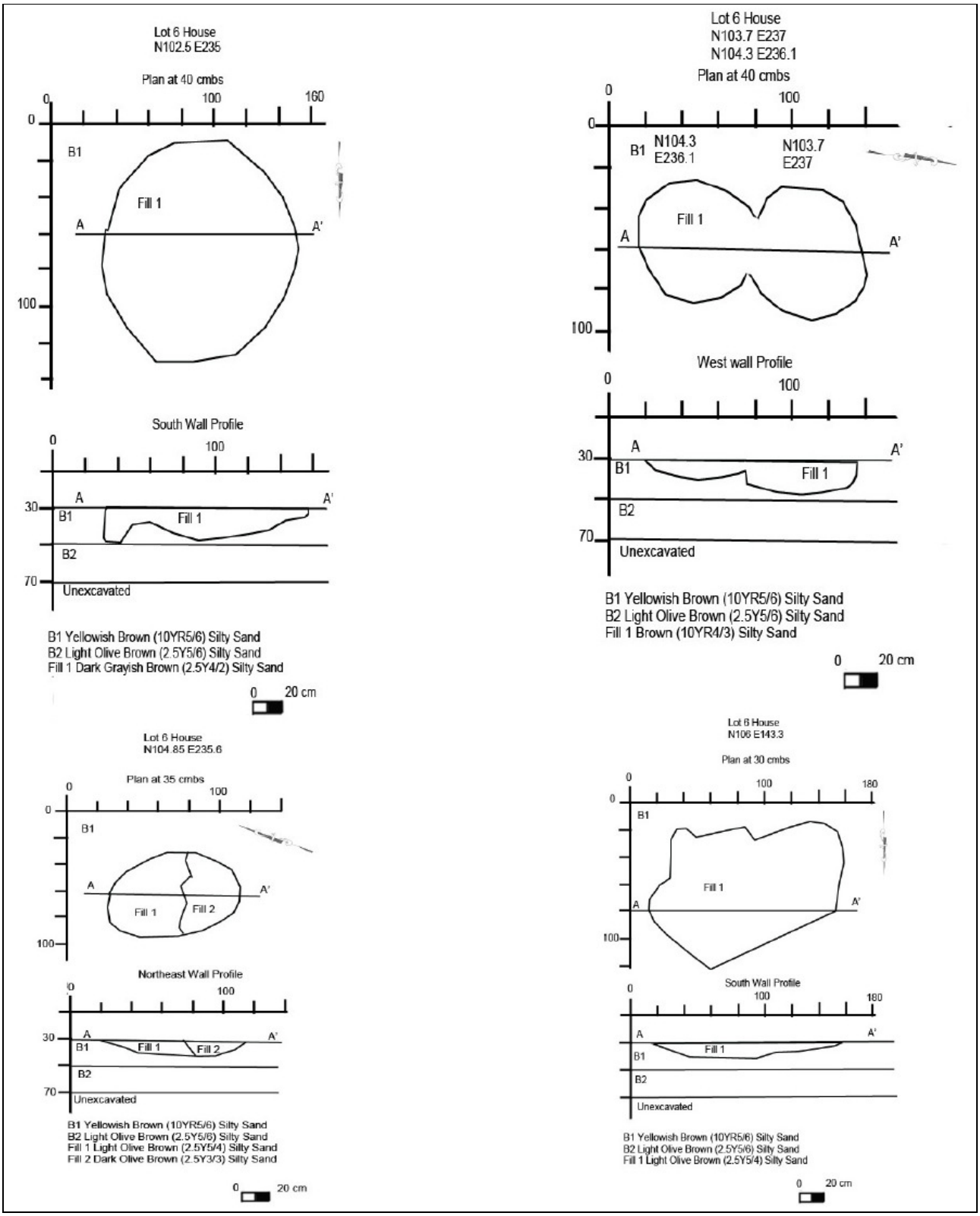


Figure 6. Lot 6 Basin-shaped anomalies

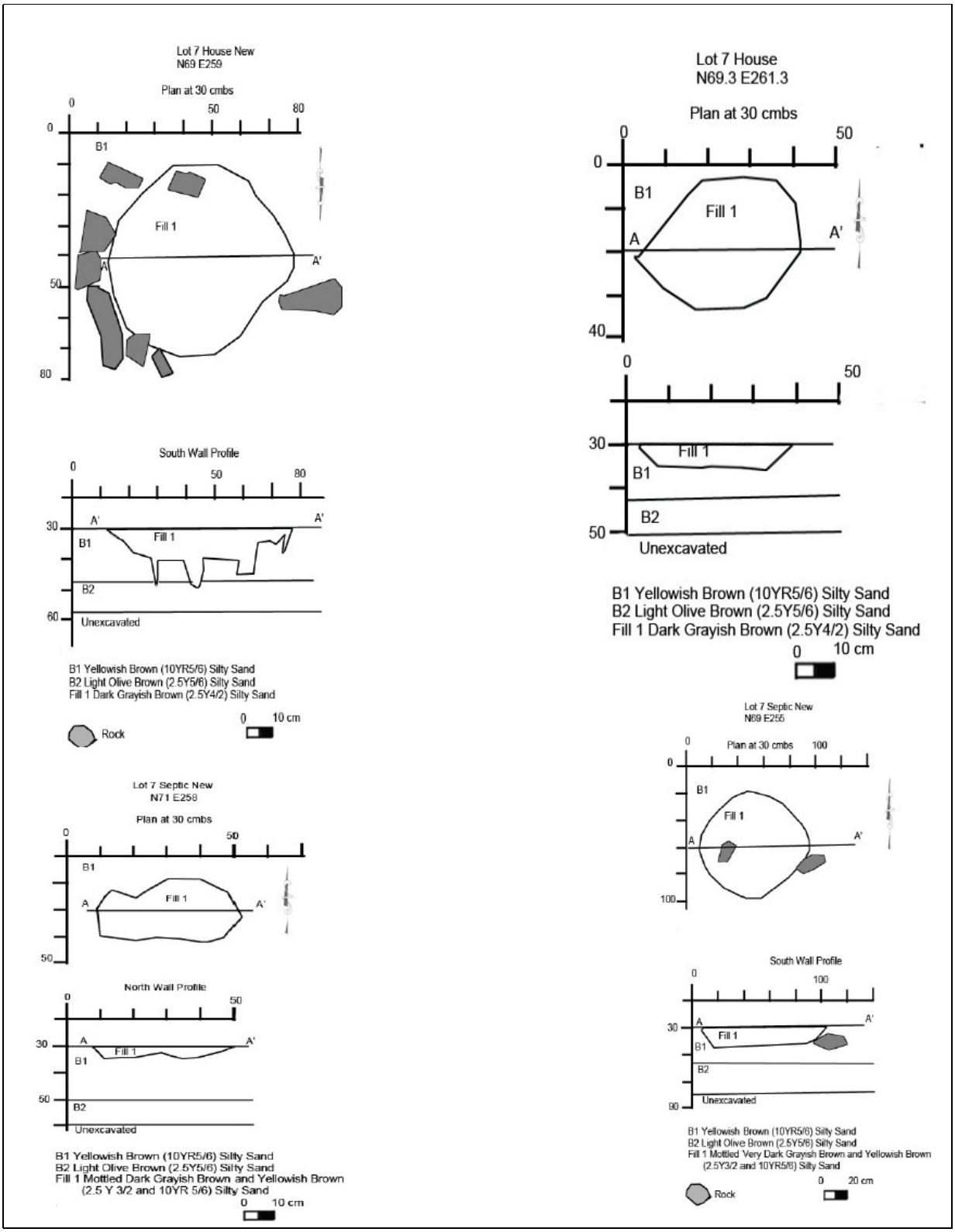


Figure 7. Lot 7 Basin-shaped anomalies

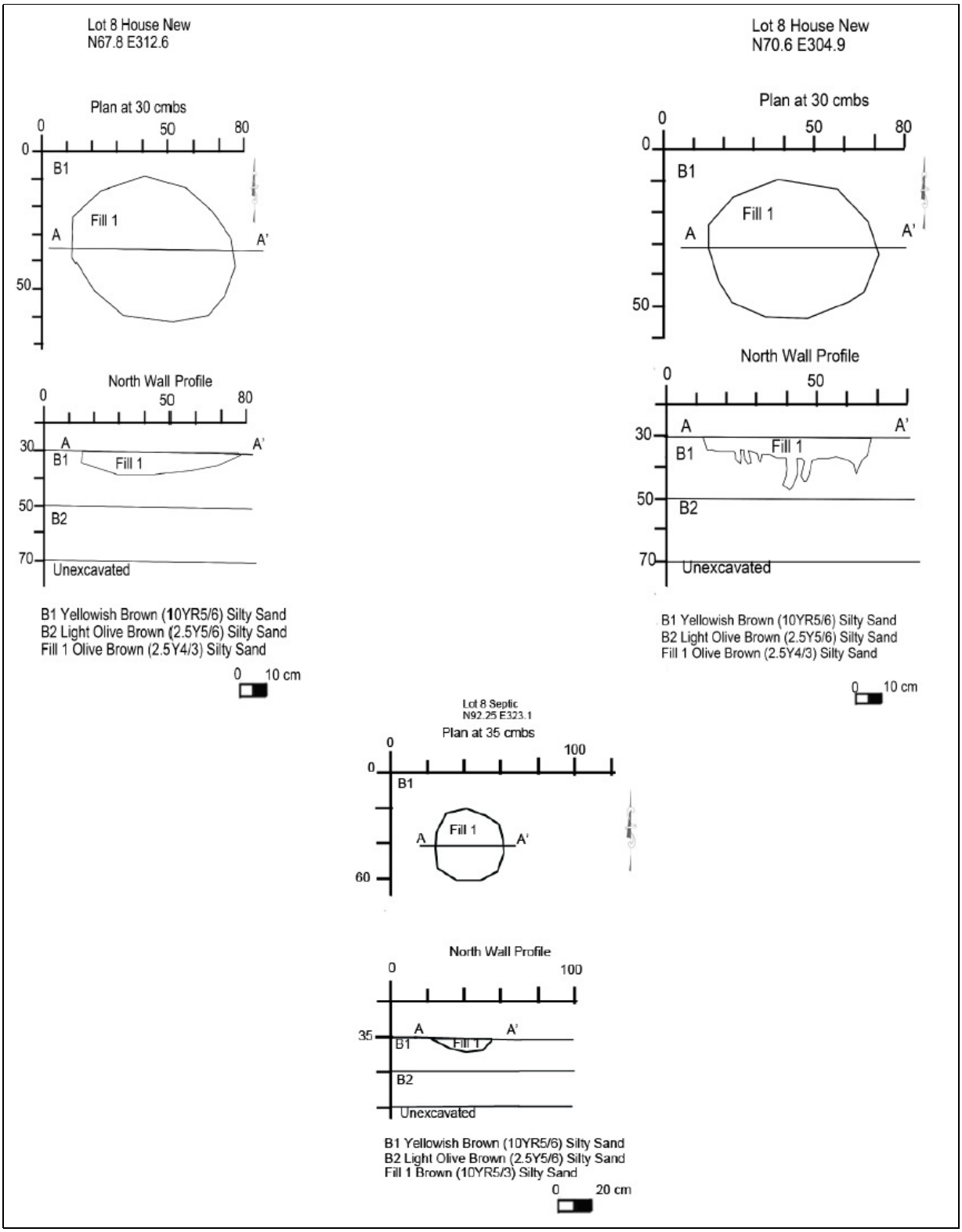


Figure 8. Lot 8 Basin-shaped anomalies

medium-sized basins and slightly more common in larger ones. FCR, charcoal, and pottery were most common in large basins while calcined bone occurred more often in medium-sized ones. No in situ burning was present in any of the basins, but at other sites on the East coast, large basins were often associated with hearths. It is possible that these basins served as pottery firing locations and that the charcoal, FCR, and broken pottery were the debris associated with firing pots. Pottery firing involves a brush fire above the pots, thus possibly resulting in little reddening of the bottom of the pits. The only problem with this interpretation, aside from the lack of soil reddening (which could be interpreted as a result of the well-drained soils in the area), is the lack of substantial amounts of charcoal and rejected pottery in and around the basins. Medium and small-size basins may have served a different purpose or may have even been accidentally created as a result of erosion or animal or plant activity with the depressions then being convenient locations to dispose of hearth refuse. Alternately, any of these basins may have served as boiling pits for stone boiling activities where an animal skin lined the basin, having been staked down on the edges, and was filled with water and hot stones added to bring it to a boil. Once the boiling had finished, the basin may have served as a convenient place to dispose of refuse.

Medium Depth Pits

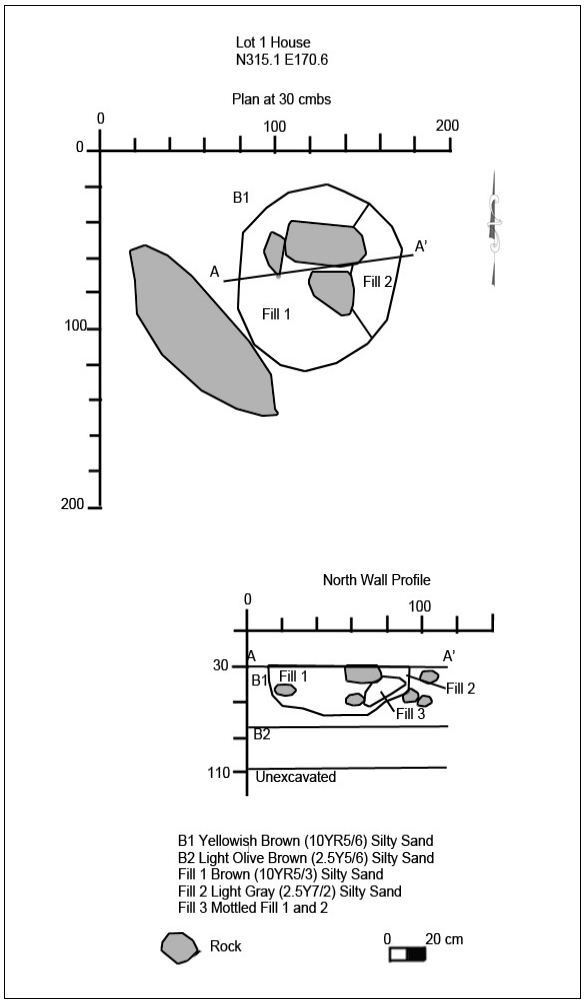
A total of 85 medium depth (between 20 and 35 cm) with steeply sloping to nearly vertical sides. Medium depth pits accounted for 35% of the anomalies identified and excavated. Medium depth pits were disproportionately distributed across the project area (Table 5) **(Figures 9-16)**.

Table 5. Medium-depth pit anomalies

	SMP	**MMP**	**LMP**	**Total/ % of total feature count by area**
L1H		3		3/ 9.3%
L2H		18	1	19/ 73.1%
L2S			1	1/ 100%
L4H		7		7/ 21.9%
L4S		14	2	16/ 57.1%
L5H		8	1	9/ 29%
L6H		2	1	3/ 12.5%
L6S		4		4/ 66.7%
L7H		3		3/ 30%
L7HN		5		5/ 38.5%
L7SN		3	2	5/ 25%
L8HN	1	5		6/ 50%
L8S		2	2	4/ 66.7%
Total	1	74	10	85

SMP- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit

They accounted for between 9.3% and 73.1% (leaving out L2S where the medium depth pit was the only anomaly identified) of the total feature assemblage in each impact area. They were found to occur



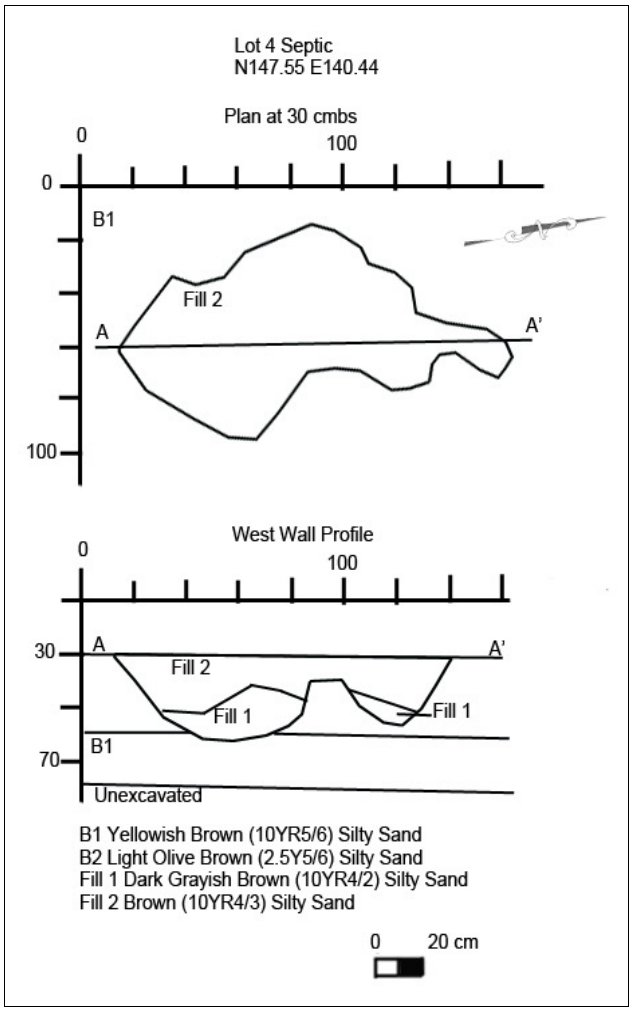


Figure 9. Representative examples of Medium-depth anomalies

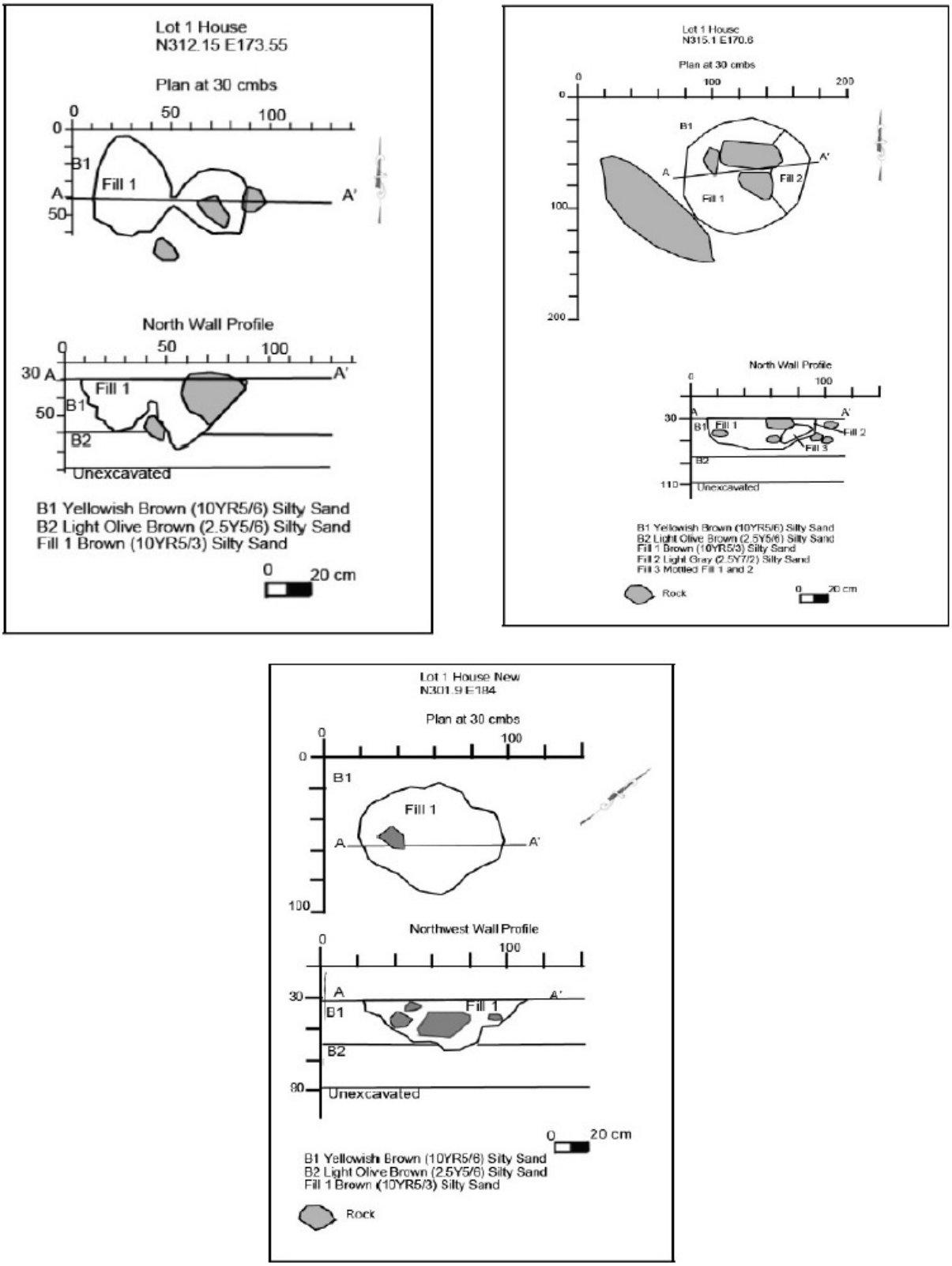
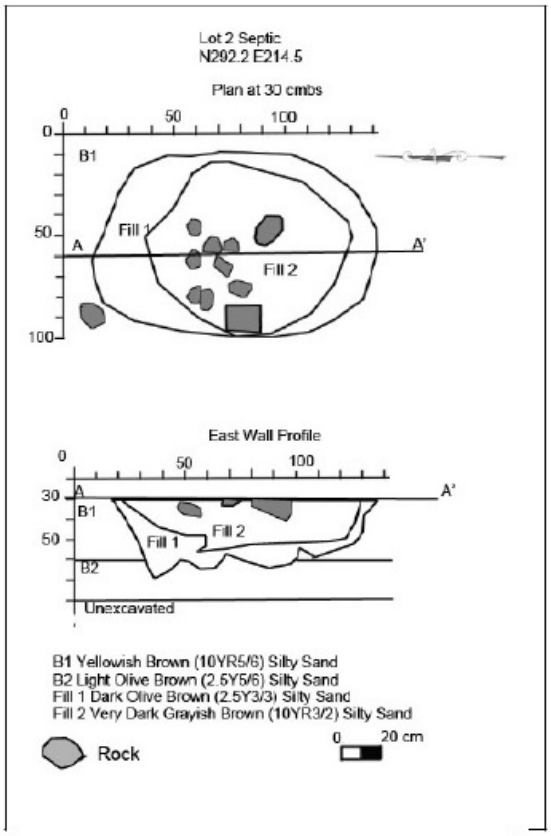
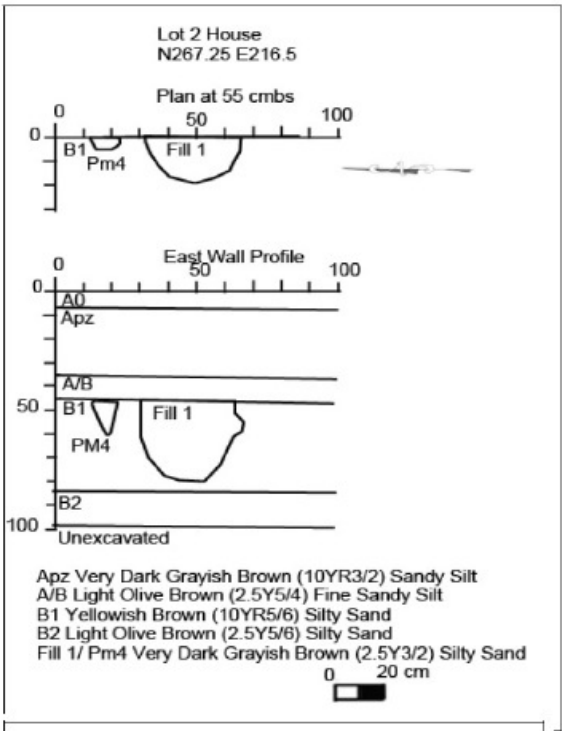
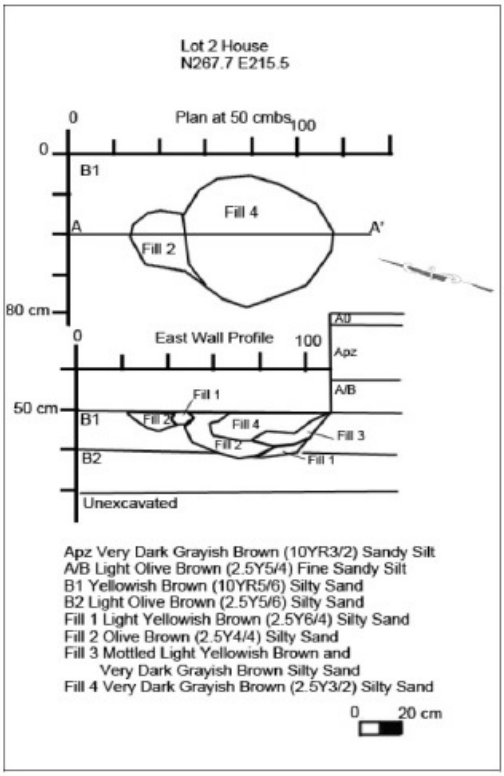


Figure 10. Lot 1 Medium-depth anomalies







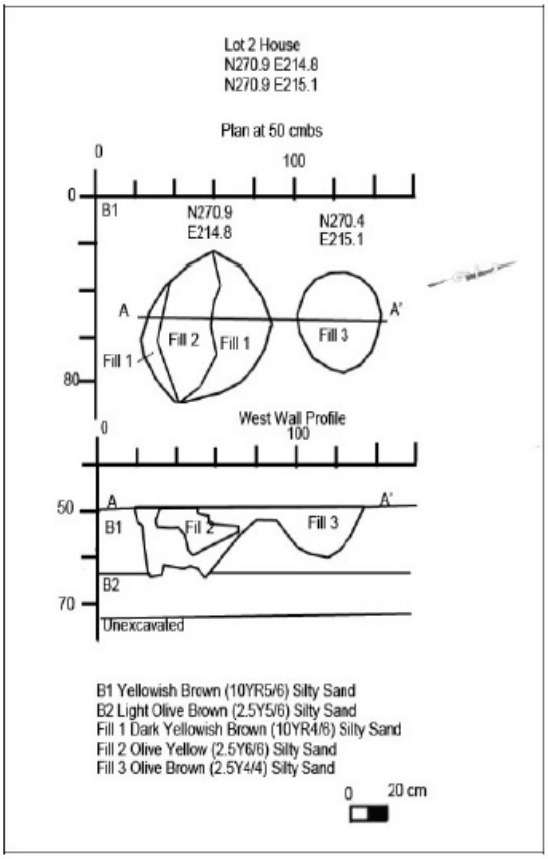
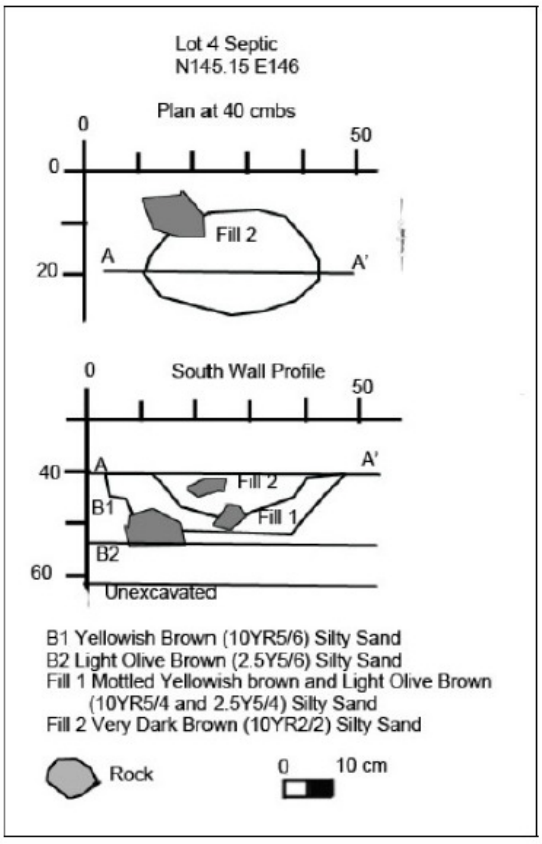
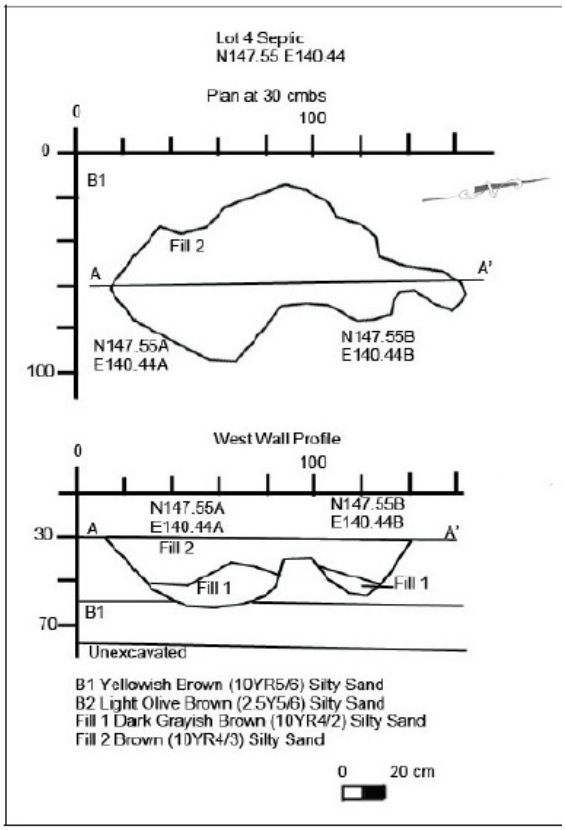
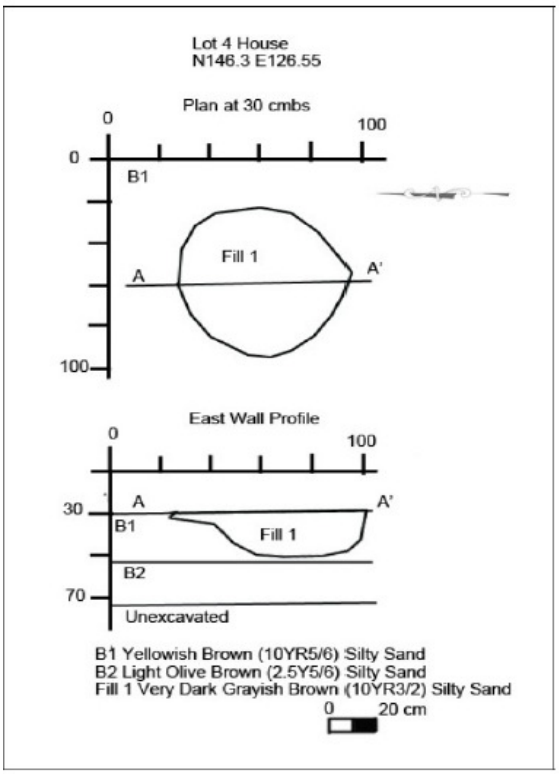


Figure 11. Lot 2 Medium-depth anomalies







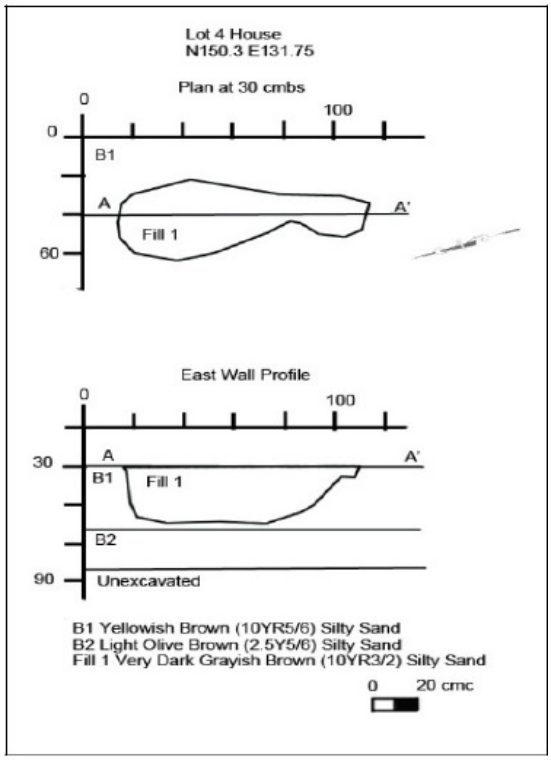


Figure 12. Lot 4 Medium-depth anomalies

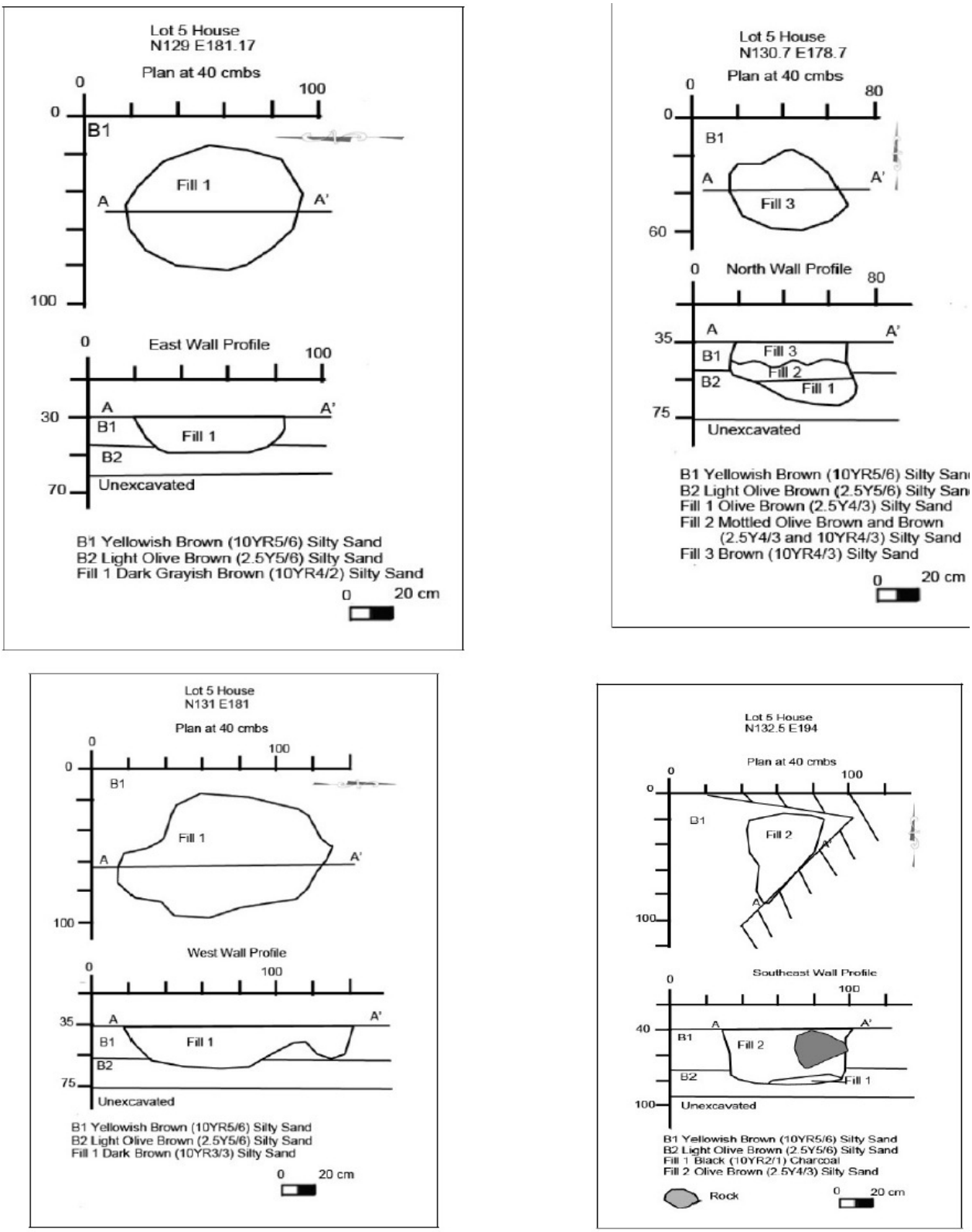
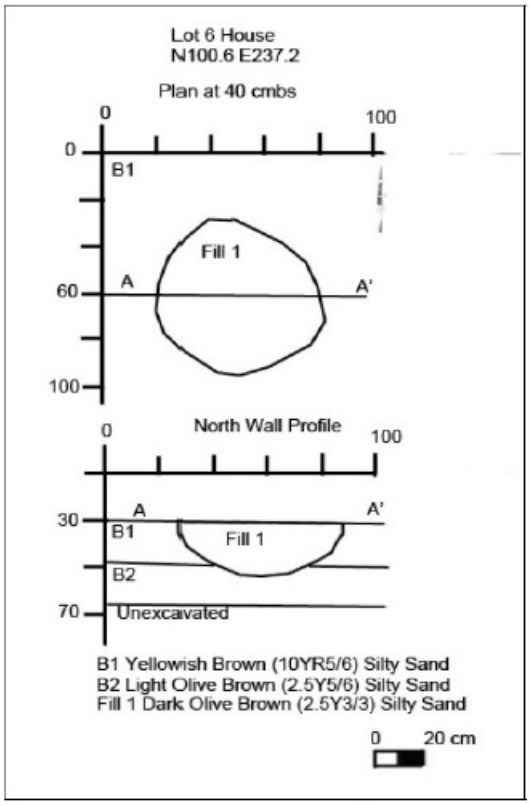
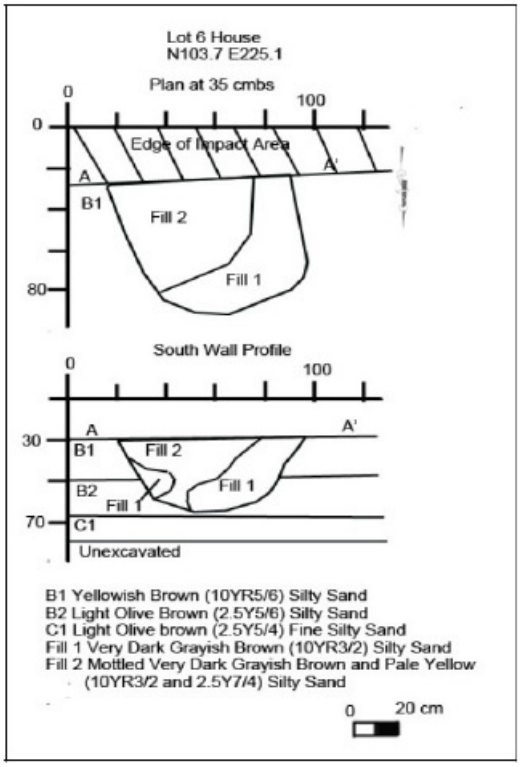


Figure 13. Lot 5 Medium-depth anomalies





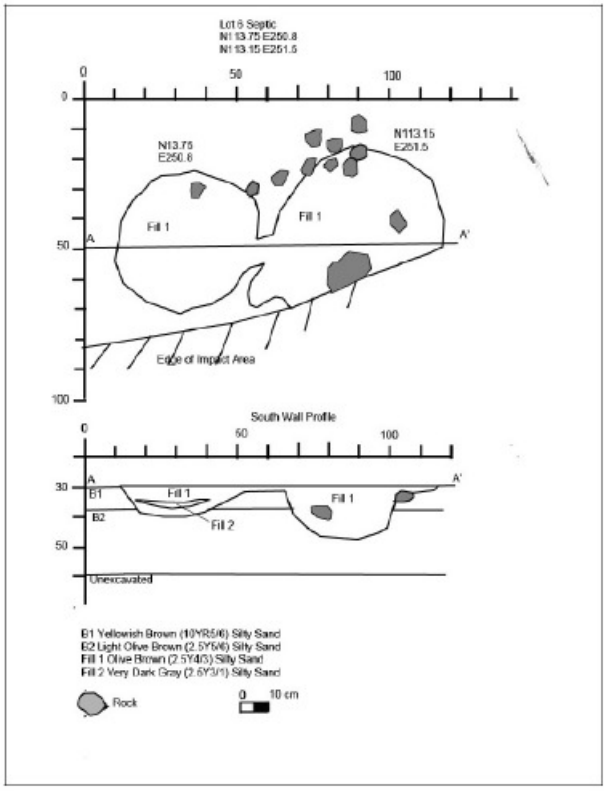
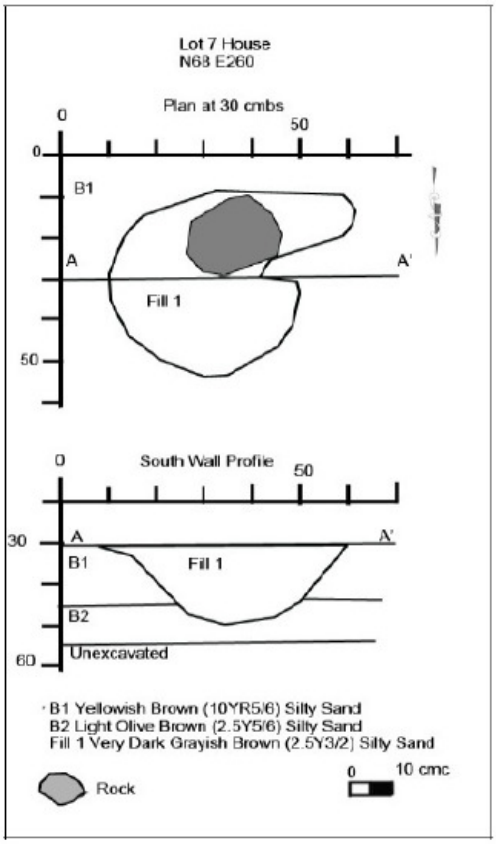
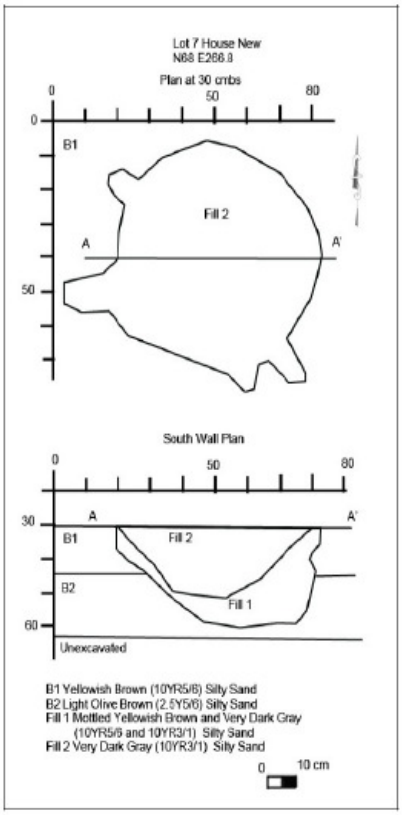
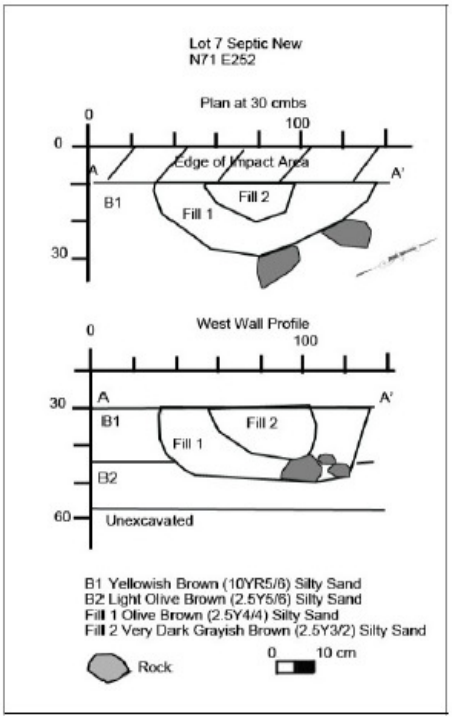


Figure 14. Lot 6 Medium-depth anomalies







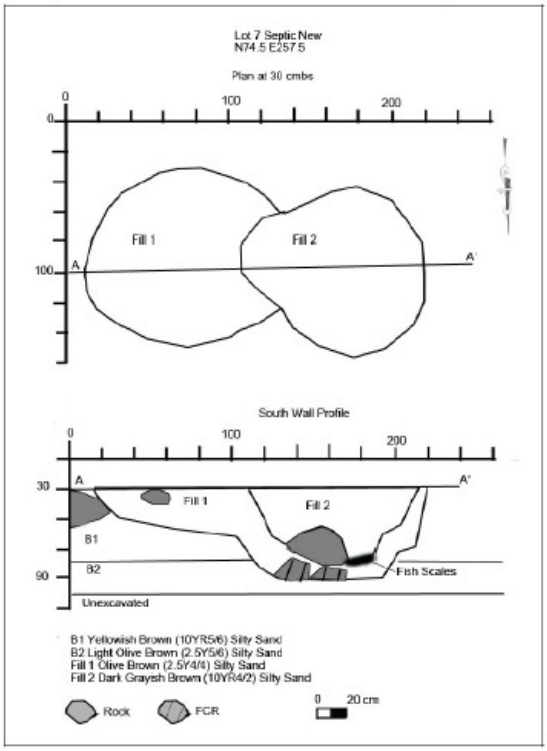


Figure 15. Lot 7 Medium-depth anomalies

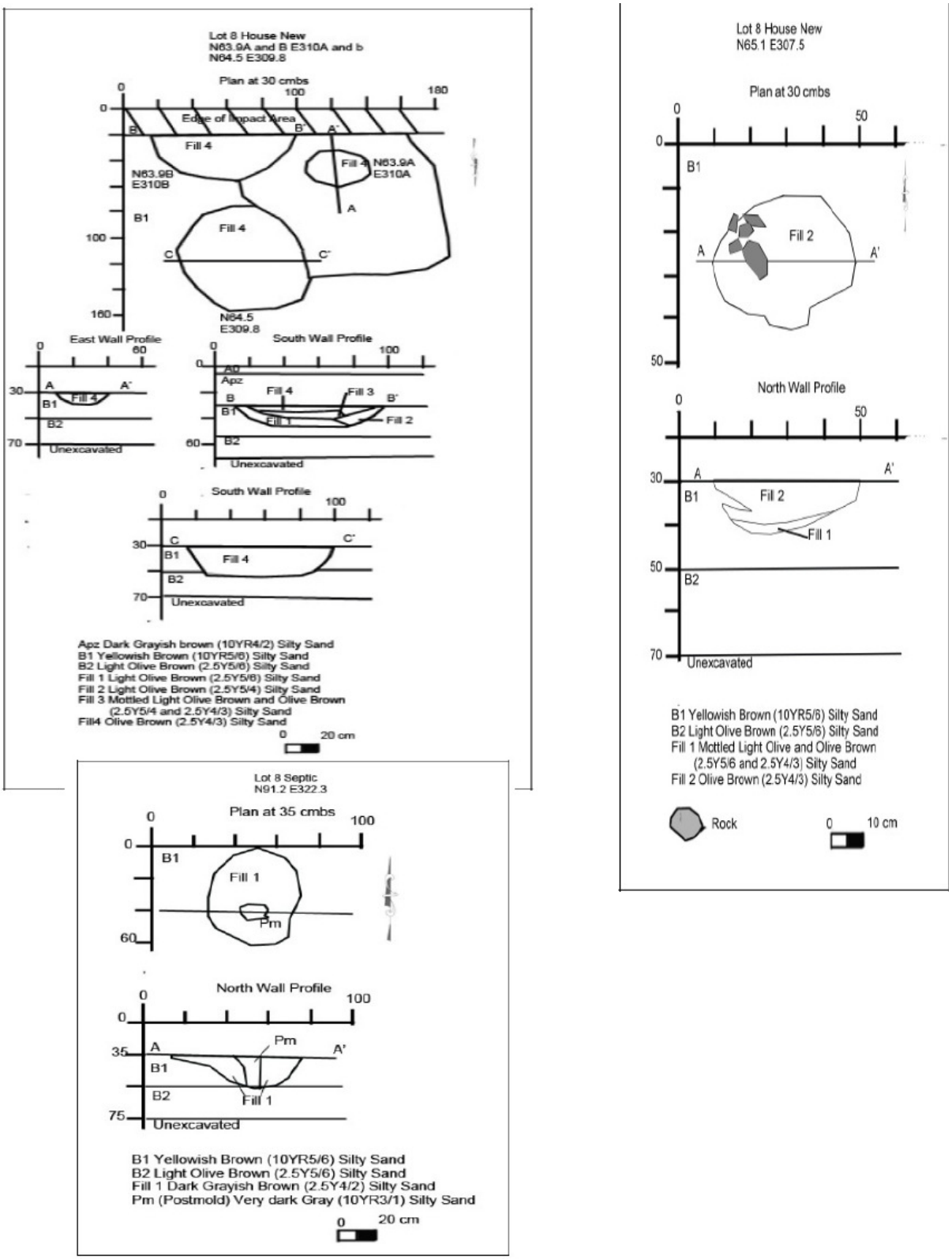


Figure 16. Lot 8 Medium-depth anomalies

in opposing frequency to shallow basins so that when there was a high occurrence of medium depth pits, there was a low occurrence of basins (Table 6). Analysis determined that this could be the result

Table 6. Artifacts associated with medium-depth pit anomalies

Location	Shallow Basins	Medium Depth Pits
L1H	71.9%	9.3%
L2H	15.4%	73.1%
L2S	0	100%
L4H	56.3%	21.9%
L4S	25%	57.1%
L5H	38.7%	29%
L6H	58.3%	12.5%
L6S	16.7%	66.7%
L7H	40%	30%
L7HN	23%	38.5%
L7SN	70%	25%
L8HN	41.7%	50%
L8S	16.7%	66.7%
Total		**85**

of the frequency of repeated occupation, possibly by the same groups within a short time, resulting in a new pit each year. The present study believes that Native people used most of these pits as cache pits within houses. A pit would be excavated in the fall when the occupants were moving away to winter quarters. Native people located these pits in the center of the houses, but more often they tended to place them at the end of the house opposite the doorway in round houses and close to the sides in longhouses. This pit may have served as a sort of place holder for the occupants, effectively saving this homesite for them the following spring when they returned. Alternately, these pits may have been dug in the spring when the occupants returned to the sapling house form that they had left the previous fall. Spring time excavation of these pits may have had a more ceremonial purpose serving to spiritually establish the household in the spring and possibly bring good fortune and protection to the occupants. Multiple pits located near or even slightly overlapping each other, with the most dramatic example being in L4S, represent the yearly reestablishment of the household at the homesite. Native people filled the pits (or possibly excavated them) in the spring, as shown by the abundant herring scales and bones, often associated with one or two surf clam shells, found within them. In addition to the herring remains, which people may have placed there as an offering of thanks for the return of the herring at that time, other unique items were also recovered from these pits. Complete pots were found in one anomaly in L4S and in Feature 12 identified during the Site Examination in Lot 6, two virtually identical argillite hoes from anomalies in L7HN and L8HN, a fulgurite from L8HN N65.1 E307.5, a large fragment of a deer pelvis in L4S anomaly N148.3 E144.2, an almost complete turkey humerus in L4S N149.1 E144.7, the distal end of a turkey tibiotarsus in L7SN N75.3E258.75, a remains from one young and one old deer in L6S N113.75 E250.8, a turtle cervical vertebra from L4S N148.2 E139.6, a

deer molar and a bear molar from L6H N103.7 E231, and an incised Late Archaic beveled cobble abrader from L7HN.

The present study theorizes that the non-fish faunal remains may represent totemic species associated with the individuals or families associated with the homes- deer, turkey, bear, and turtle. The pottery and lithic artifacts may reflect "sacrifices" made to help ensure a good harvest (the hoes), a full pot (the pots), an appeal to the Thunderbird (the fulgurite), and a possible appeal to the people from the past (the reworked beveled cobble abrader).

Goodby postulated a connection between the Transitional Archaic and the Late Woodland (Goodby 1992:214-215). He sees possible evidence of this "deep time" connection between the two cultures in two specific artifacts- an atlatl weight from Wapanucket that bears a "corn" motif and a clay pot from the Green River site in East Greenwich, RI. The atlatl weight, which Goodby dates to the Transitional Archaic, bears a "corn" ear motif similar to those found on Late Woodland/ Contact period pottery and states that either an individual found this Transitional Archaic artifact and etched a contemporary design onto the old artifact or that "...it is also possible that this symbol remained in the historical memory of the people, incorporated into a variety of perishable media, and was prominently placed on ceramic vessels as they were increasingly used in defense of tradition." (Goodby 1992: 214). Essentially, this "corn" motif originated in the Transitional Archaic and was continually used, although it remained archaeologically invisible (due to its use on perishable media and not ceramics, stone,or bone) until the late Woodland/ Contact Period when it became a symbol of Native resistance to foreign (European) change. The clay pot is an atypical form that is flat on the bottom with opposing lug handles at the rim. Goodby sees this pot as being closer in style to Transitional Archaic steatite vessels that with Contact Period European kettles (Goodby 1992: 215).

Incorporating Transitional Archaic cultural artifacts into Late Woodland contexts could be the result of the fact that both cultures, Transitional Archaic and Late Woodland, favored the same sorts of locales for their base camps. This would naturally have meant that later people would have encountered earlier artifacts and may have collected them in a similar manner to the way that Colonial and later farmers did, as curiosities from an unknown past, objects that are obviously human made but that look different from those in current use by people. The Late Woodland people appear to have been a "pit people", people that excavated into the subsoil to create pits that they used for a variety of purposes (cache, storage, roasting, burial). As a result, they would be more likely to encounter artifacts from people who had lived at the sites before them. These artifacts may have even had a spiritual connection to the Late woodland people as either mnemonic devices for recalling oral history or as intermediaries between the people of the past and people of the then, Late Woodland, present. Native people in New England had/ have an oral history that extends into the past, the unfamiliar artifacts recovered by the Late woodland people as they dug their storage and cache pits, may have been another way that created a "deep time" for Late woodland people.

Seven of the medium-size medium depth pits contained no artifacts in their fill. They may have never had artifacts or they may have had organic material in them that has then decomposed. Archaeologists found most of these sterile pits in L2H with only two being located elsewhere (L7HN). Eight of the pits contained abundant alewife remains (scales and vertebra) possibly indicating a spring time creation/ filling for these pits (Table 7). Half of these were associated with significant portions of

Table 7. Alewife and significant faunal remains from medium depth pits

Anomaly	Herring Count	Other Significant Faunal
L4S N147.8 E147.4	500	
L4S N148.3 E141.25	215	Deer Pelvis
L4S N148.8 E145.4	144	
L4S N149.1 E144.7	383	Turkey Humerus
L6H N109.3 E230.4	111	
L6S N113.75 E250.8	29	Deer Maxilla and Atlas Vertebra
L6S N114.3 E248.2	88	
L7SN N74.5 E257.5	120	Deer Metatarsal and Turkey Tibia

other fauna, specifically deer and turkey. Most of the remaining medium and large size medium depth pits contained debitage, and to a lesser degree, pottery, fire cracked rock, charcoal, calcined bone and maize (Table 8). All of these materials were better represented in the large size pits versus the

Table 8. Artifact classes recovered from medium depth pits

Artifact	Medium Size Medium Depth Pit	Large Size Medium Depth Pit
NCM	7/ 9.6%	0
Debitage	58 / 79.5%	11/ 100%
Pottery	36/ 49.3%	8/ 72.7%
FCR	41/ 56.2%	8/ 72.7%
Charcoal	43/ 58.9%	9/ 81.8%
Calcined Bone	16/ 21.9%	5/ 45.5%
Maize	3/ 4.1%	
Bean	1/ 1.4%	
Acorn	1/ 1.4%	1/ 9.1%
Historic		3/ 27.3%
Total	**73**	**11**

medium size ones. Archaeologists recovered few floral remains, to a few pieces of maize kernel and cob, a bean, and acorn fragments. Overall, most of the material recovered appears to consist of hearth debris on top of possible ceremonial deposits, all of which people deposited in the spring. A possible scenario is that people excavated these pits in the spring, then they deposited into them a springtime offering (pots, hoes, herring, totemic animal parts) which was then capped with the hearth cleaning left over from the previous year. This deposit may have ceremoniously "cleansed" the house and hearth, appeasing the fire spirits, thanked the spirits of the herring for returning, and appealing to the clan, village, and/ or individual totems and spirits to encourage a bountiful planting, hunting and harvest year. Alternately, these pits may represent nothing more than in-house small cache pits that people filled with household refuse.

Twelve of the medium-depth pits yielded projectile points or temporally identifiable point fragments (Table 9). Most of these were large triangle (Levanna) or small triangle, Squibnocket triangle

Table 9. Projectile points recovered from medium-depth pits

Anomaly	**Large Triangle**	**Small Triangle**	**Other**
Medium-Size Pits			
2H-N268.1 E214.25			Neville
2H-N268.2 E214.2	Present		
2H-N271.9 E214.8	Present		
4S-N145.15 E146		Present	
4S-N148.8 E145.4		Present	
4S-N149.1 E144.7	Present		
6H-N103.7 E225.1		Present	
6S-N114.3 E248.2		Present	
7SN-N74.5 E257.5	Present x 3		
Large-Size Pits			
4S-N147.8 E147.4		Present	
4S-N149.7 E142.6			Brewerton
5h-N131 E181			Rossville
Total	**6**	**5**	**3**

but possibly small Levanna-like points. Archaeologists recovered the Neville point from an anomaly that impacted the Middle Archaic component in L2H. Archaeologists consider the Brewerton and Rossville points to have been redeposited as well. The presence of Late Woodland points in thee anomalies support the hypothesis that these anomalies date to this period.

Deep Pits

Dunham discussed very uniform-shaped pit (ca. 1-2 m. in diameter x 50 cm deep) containing few associated artifacts that archaeologists encountered (Dunham 2000:225). Archaeologists have identified these pits from sites in Michigan where they can number over one hundred from a single site. Dunham sought to investigate and explain these pits by using a multidisciplinary approach that combined ethnoarchaeology, ethnohistory, and historical archaeology to build a model to understand them. This model was then compared to the formal, spatial, and temporal dimensions of the features, as derived from archaeological investigation (Dunham 2000:226). He found that these features related to food processing, preparation, and storage (Dunham 2000:227). Associated with the pits were commonly cultural debris such as charred and decayed wood, ash, and occasionally fire-cracked rock. Earlier archaeologists, basing their interpretations on the presence of these materials, interpreted these pits as earth ovens. When the ash, charcoal and other evidence of fire were missing, the same archaeologists interpreted them as emptied storage pits. More recent archaeological investigations of these pits had yielded similar artifact recoveries- a low density of material consisting of a low density of lithic debitage, fire-cracked rock and the occasional piece of pottery (Dunham 2000:228). The areas around

the pits were also found to be conspicuously lacking in artifacts and settlement evidence (post molds, living floors, refuse middens and the like). They appear to have been often physically separated, from 150 to 400 m to up to 1.6 km, from the nearest known habitation and date to the Late Woodland Period (Dunham 2000:229).

Ethnographic sources for the Great Lakes region describe storage pits as being 1-2 meters in diameter and of a similar depth and being lined with bark, grasses or hay (Dunham 2000:230). Native women stored foods such as maize, wild rice, squash, dried berries, and maple sugar, in woven sacks, animal skins, baskets, bark containers, ceramic, metal and glass vessels within the pits (Dunham 2000:230). Dunham described these pits as having been in use in pre-contact times into the 1930s. Archaeologists found that these pits ethnohistorically associated with two general locational contexts: settlements and specific activity areas such as gardens, sugar bushes, wild rice camps, and along regular transportation routes, always in well-drained locales (Dunham 2000:230).

Archaeologists based their earlier interpretation of these pits as earth ovens on the presence of charcoal, ash and fire-cracked rock. Earth ovens are well-represented tint he ethnohistoric record for the Great Lakes where Native people used them to roast corn, squash, and beans or bread (Dunham 2000:231). Archaeologically, earth ovens would be expected to contain evidence of in situ burning (reddened/ heat altered soils), charcoal and possibly fire-cracked rock and carbonized botanicals.

Alternate interpretations for these pits are that people used them for processing wild rice or maple sugar or to cache tools used for these purposes. Cache pits, for people practicing a mobile economy, served a practical purpose. Surplus food, beyond that which was immediately needed, could be stored against future needs and thus would be available upon return. Pits used for this purpose would likely be found near their respective resource locations, isolated from habitation areas. Earthen ovens would be expected in or near to habitation areas. It appears that Native people separated the storage pits from habitation areas, possibly as a result of a desire for concealment (Dunham 2000:233). Dunham interpreted the idea of caching food as the result of subsistence strategies that relied on seasonally dense, abundant plant and animal resources, which required a degree of settlement movement (Dunham 2000:234).

With relation to the use of storage pits at agricultural sites, Hinsdale (1931: 14) noted that “there are numerous groups of pit holes not far from the cornfield; some of them are arranged in rows with the pits in row alternating with those upon the other side”. This, surface depressions may appear to be separated from habitation sites because they represent a specific activity area (Storage) associated with a specific task such as gardening or horticulture. Such locations would be physically distinct from habitation sites, but would not represent extractive encampments...” (Dunham 2000:234).

Quimby estimated that 10 bushels of grain (maize and rice) were necessary to support a family over the winter (1968:133). A pit 1 m in diameter and .7 m deep would have an approximate volume of 15 bushels, if half that volume was bark, mats and/ or grass, it could hold 8 bushels of grain. Taking in a family's berry and medicine plant requirements for a year, a minimum of two smaller storage pits or one large pit would be required per family.

Bursey investigated the role of storage and how it would appear archaeologically, beyond the common identification of “storage pit” in the literature. He cites Moeller's hypothesis that Native people used storage pits seasonally at sites for short-term storage before the seasonal move to winter quarters. In this scenario, refuse contents in storage pits would be the result of food processing activities related to the preparation of food in the fall. Pits previously used for storage were immediately filled with refuse which was directly related to the pit's terminal function when people deposited refuse from food processing into them (Bursey 2001: 183). Moeller's hypothesis is most applicable to seasonally occupied sites.

Large storage pits were often described in the ethnohistoric documents from eastern Massachusetts. The best description of this is by Thomas Morton in 1637 "They are careful to store food for winter, they eat freely of it but put away a convenient portion to get them through the dead of winter. Their barnes are holes made in the earth, that will hold a hogshead of corn a peece in the. In these (when their corn is out of the husk and well dried) they lay their store in great baskets (which they make of sparke) with matts under, about the sides and on top; and putting it into the place made for it, they cover it with earth.. to be used in the case of necessity and not else." (Morton 1637: 42). These are the type of storage pits which the colonists found in 1620 on Cape Cod wherein they found "a bottle of oil, bag of beans...2 to 3 baskets parched acorns" as well as several bushels of corn (Young 1974:141; 155). The size of these caches varied from .18m3 to .21m3 for those described by Bradford to .27 m3 (7.88 bushels) for those seen by Morton (Bendremer 1999: 146-147). The English reported that woven bags recovered from the storage pits could hold between three to four (.11 to .14 m3) bushels. Winslow reports that in one storage pit a large basket was found that contained “thirty-six goodly ears of corn, some yellow, and some red, and others mixed with blue...the basket...held about three or four bushels.” (Heath 1963: 22).

Archaeologists identified 12 medium and large size deep pits across the project area (Table 10)

Table 10. Medium and large deep pits

Anomaly	**Type**	**Diameter**	**Depth**
L1-Feature 2	LDP	150 cm	68 cm
L2H-N270.5 E217.5	LDP	135 cm	65 cm
L4H-N155.65 E130.15	LDP	85 cm	40 cm
L4S-N144.5 E145.5	LDP	85 cm	50 cm
L5H-N135 E186.5	LDP	120 cm	45 cm
L6H-N100.6 E244	LDP	125 cm	45 cm
L6H-N103.6 E238.75	MDP	78 cm	40 cm
L6H-N103.8 E244	LDP	130 cm	80 cm
L6H-N104 E241.6	LDP	96 cm	40 cm
L6H-N104.5 E243	LDP	160 cm	60 cm
L6H-N108.8 E235.7	LDP	60 cm	85 cm
L7HN-N58.75 E278.4	LDP	70 cm	60 cm

*MDP- Medium size deep pit LDP- large size deep pit

(**Figures 17, 18-24**). Testing found half of These pits in L6H, an apparent formal storage area of the community site. Testing found the remaining pits scattered across the remaining lots possibly indicating scattered hamlet settlements with their own storage pits versus a larger planned community settlement with specifically designated activity areas.

None of the pits were sterile, although one, L7HN-N58.75 E278.4 was found to only contain flecks of charcoal and one possibly intrusive piece of coal. Because this pit was in an area of the site that apparently had seen little repeated settlement use and thus little debris accumulation, it is not surprising that little artifactual material was found in this pit. The remaining deep pits contained debris commonly associated with hearth cleaning- lithic debitage, charcoal, pottery, calcined bone, maize, and fire-cracked rock (Table 11). Maize was common in the pits

Table 11. Gross artifact class occurrences in medium and large size deep pits

Artifact	**Occurrences**
NCM	0
Debitage	11
Pottery	9
FCR	9
Charcoal	11
Calcined Bone	8
Maize	6
Historic	1
Total	**12**

especially those in L6H. Excavation recovered unburned faunal remains from three deep pits in L6H with deer and black bear being found in N100.6 E244 and N103.6 E238.75, and deer remains from N103.8 E244. Unlike the medium depth pits, archaeologists failed to recovered significant traces of fish remains. Archaeologists recovered nine temporally identifiable projectile points from the deep pits (Table 12).

Table 12. Projectile Points from deep pits

Anomaly	**Small Triangle**	**Other**
L4S-N144.5 E145.5		Rossville
L5H-N135 E186.5		Susquehanna
L6H-N100.6 E244	Present	
L6H-N103.6 E238.75	Present	Small Stemmed
L6H-N103.8 E244		Small Stemmed, Wayland Notched
L6H-N104 E241.6	Present	
L6H-N104.5 E243		Bifurcate

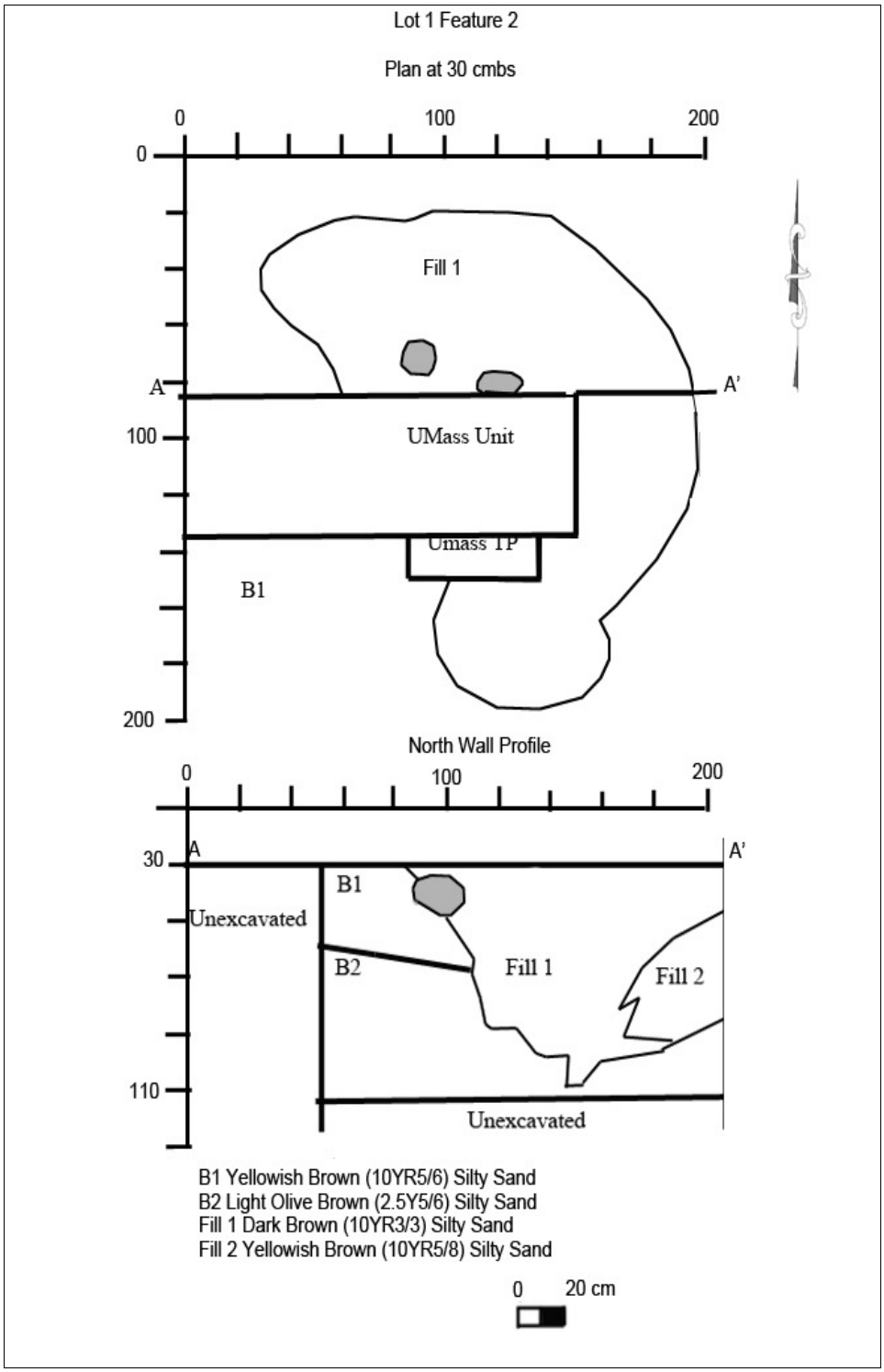


Figure 17. Representative example of deep-depth pit anomalies

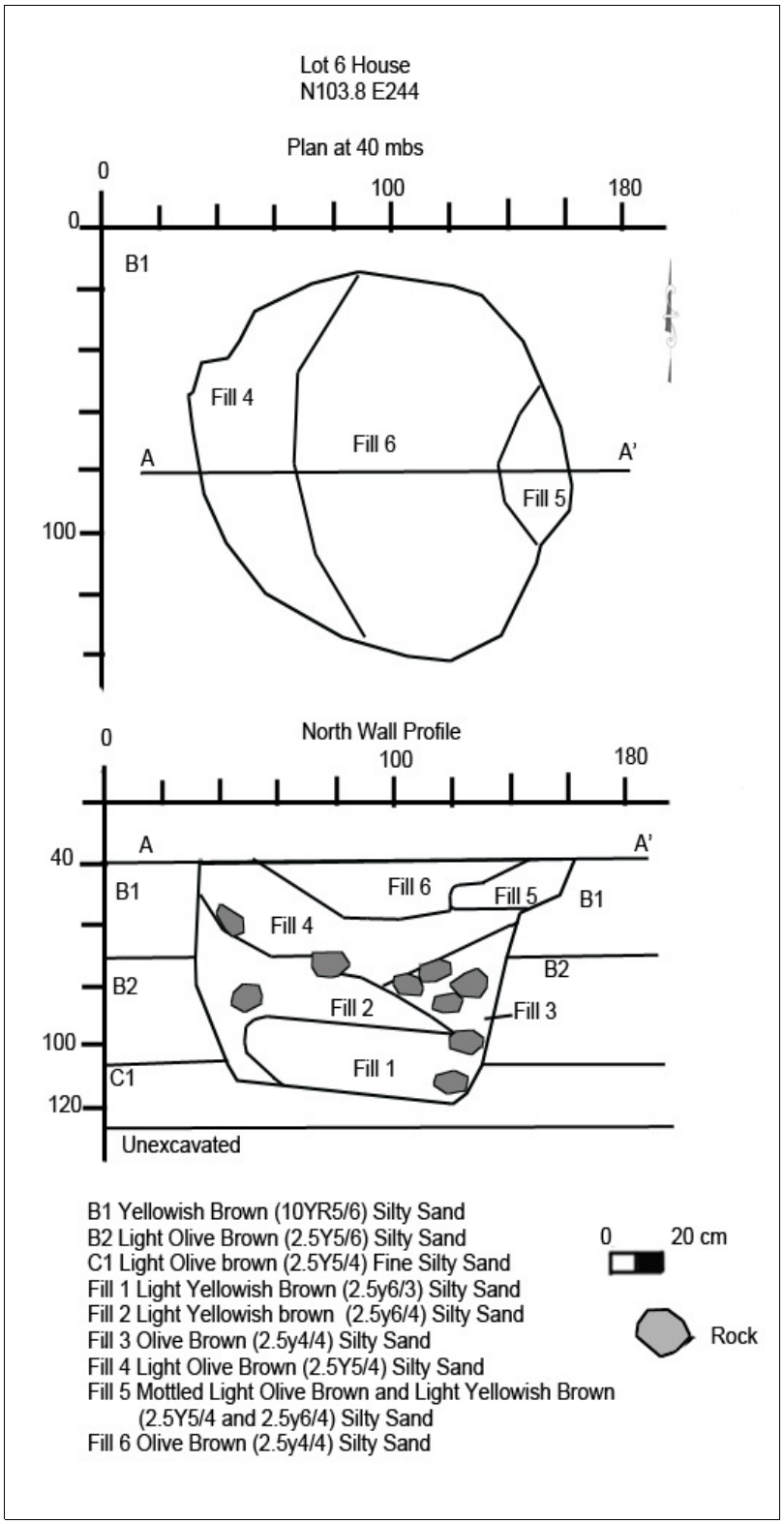


Figure 17. continued

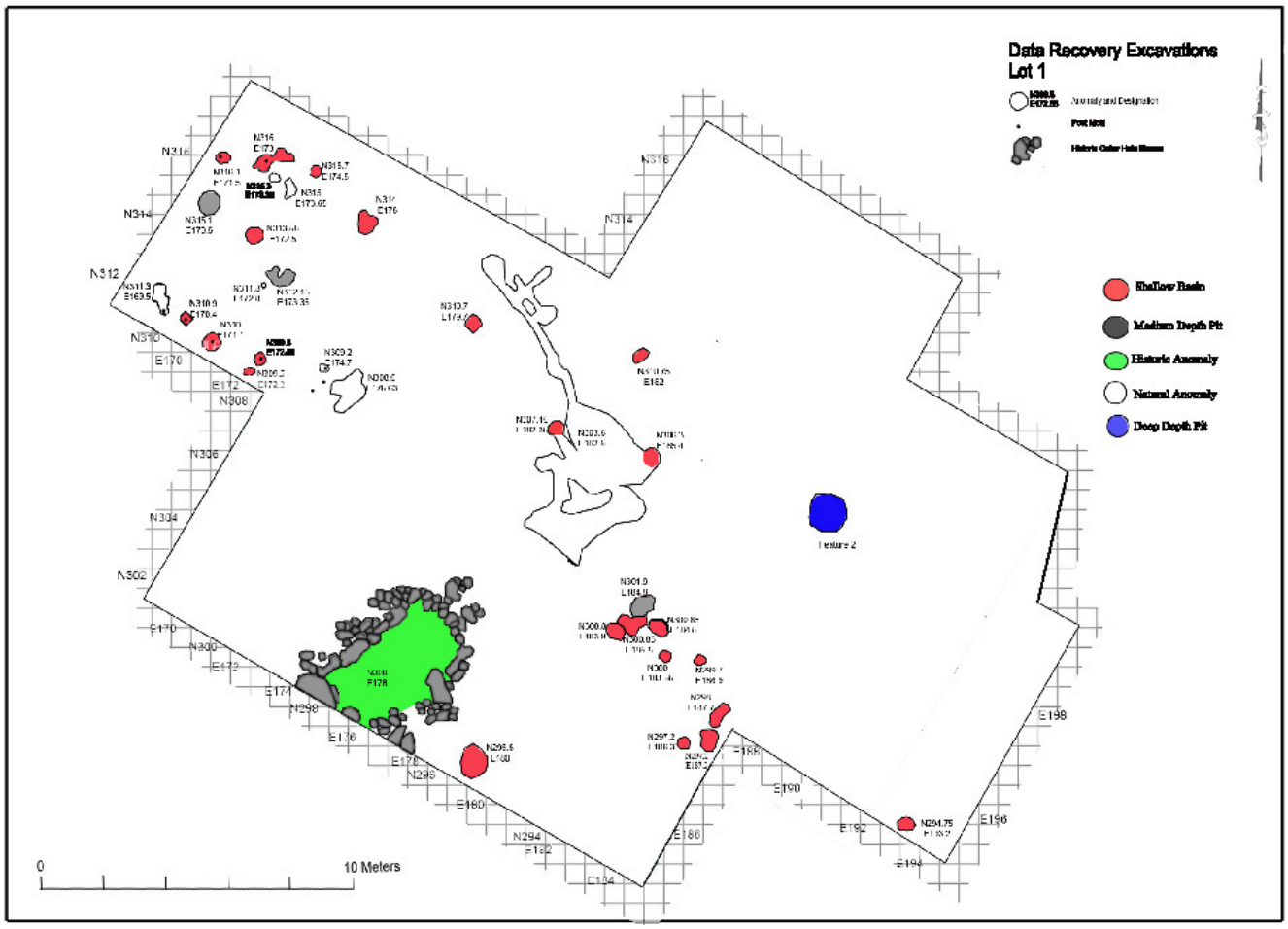


Figure 18. Distribution of deep-depth pit anomalies in the Lot 1 impact area

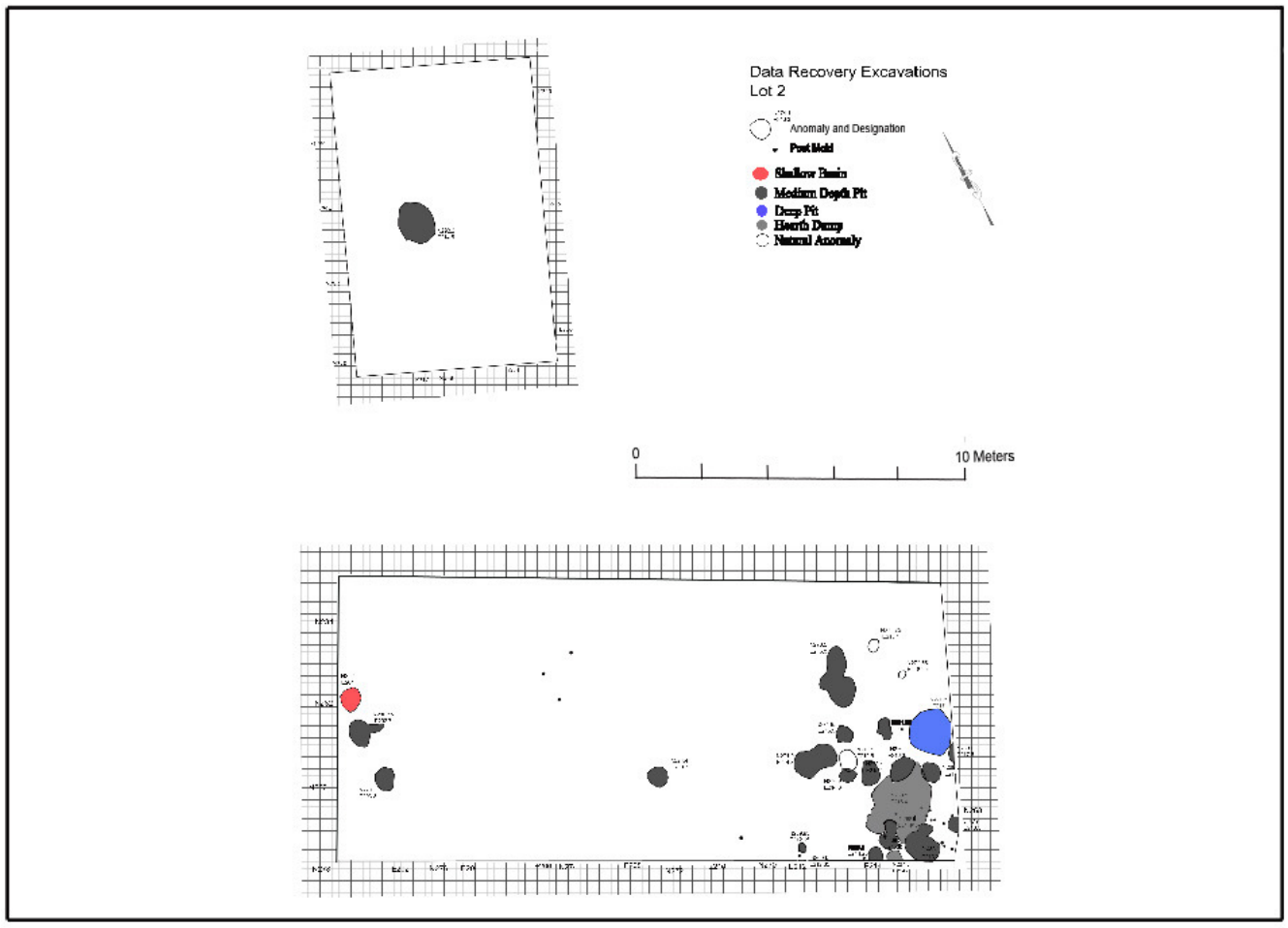


Figure 19. Distribution of deep-depth pit anomalies in the Lot 2 impact area

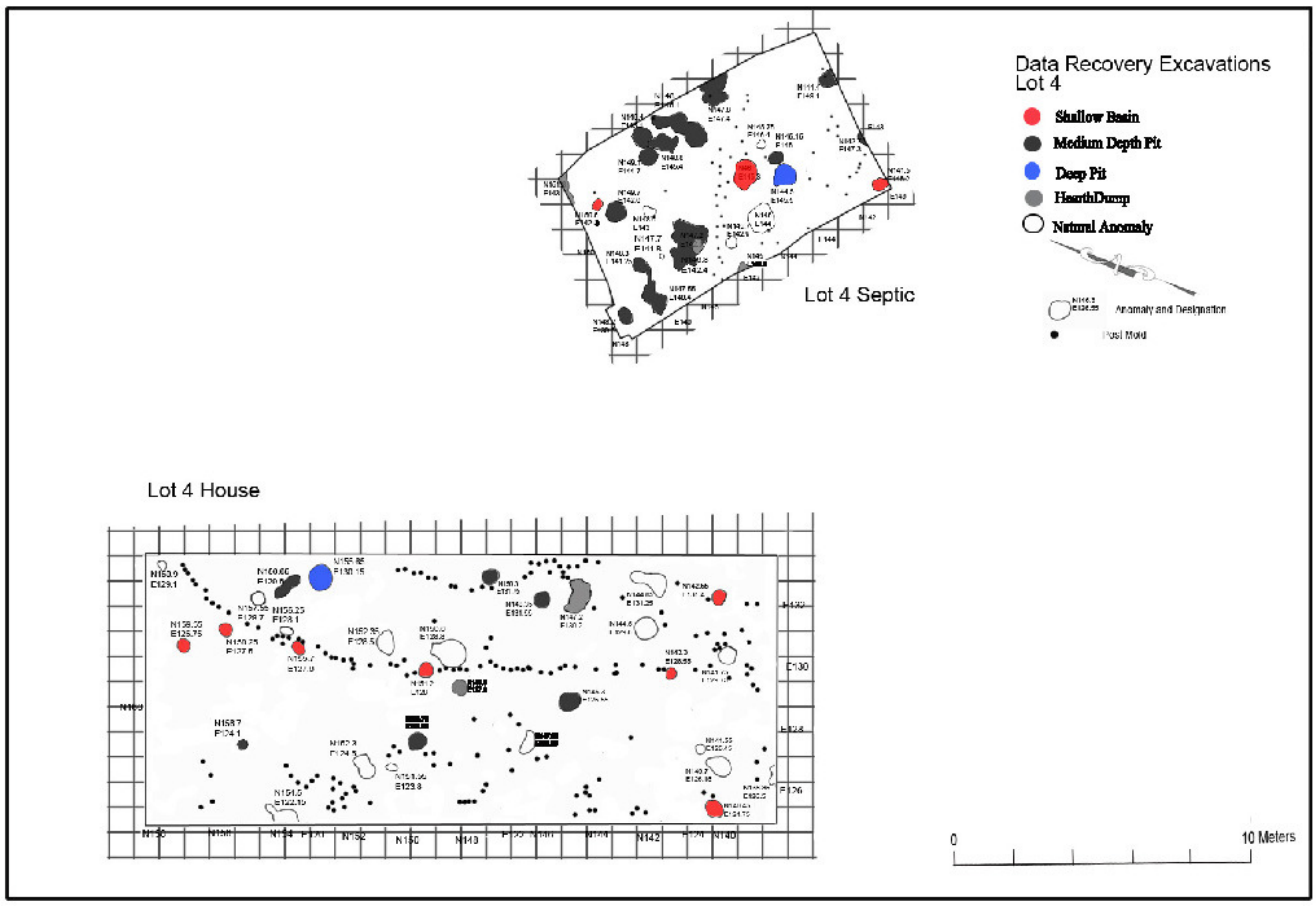


Figure 20. Distribution of deep-depth pit anomalies in the Lot 4 impact area

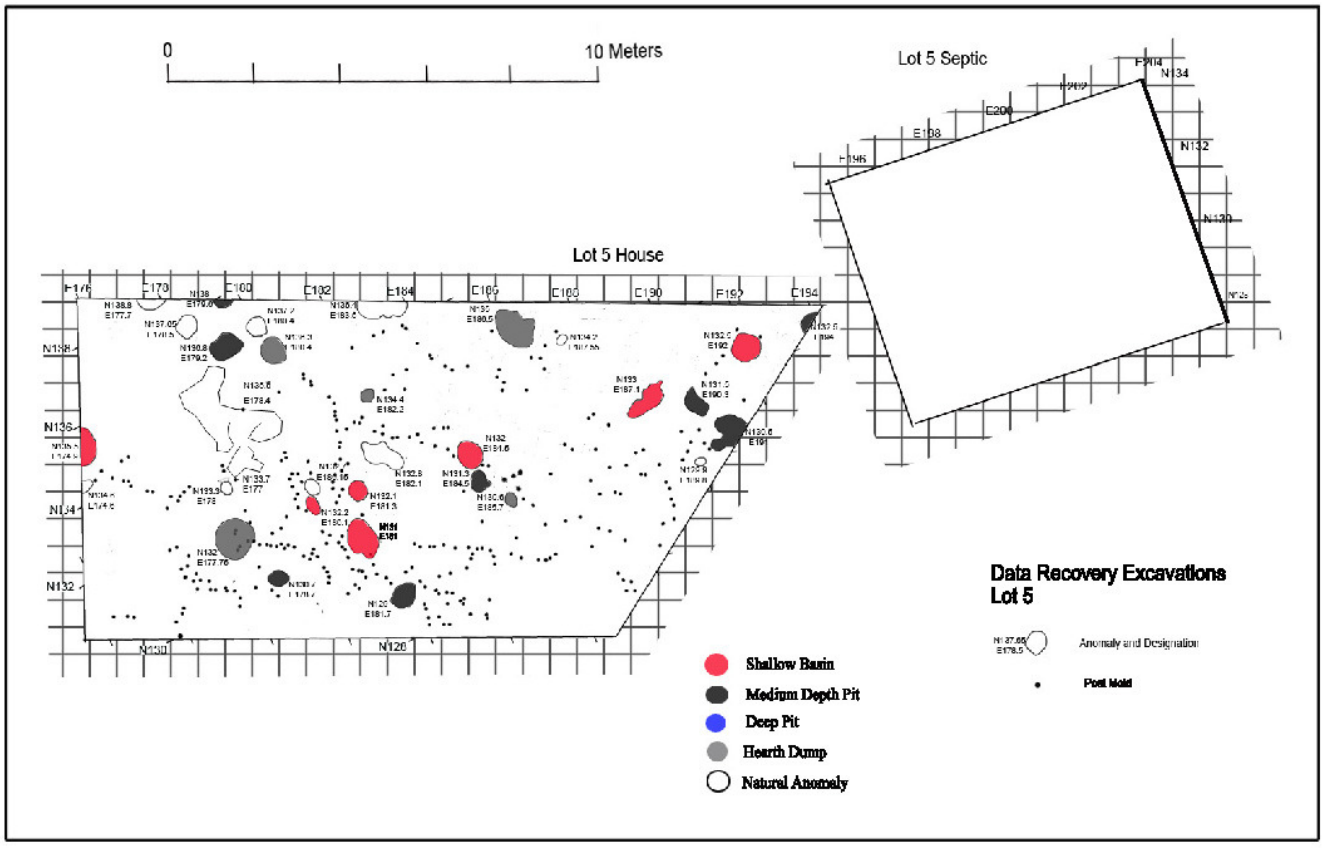


Figure 21. Distribution of deep-depth pit anomalies in the Lot 5 impact area

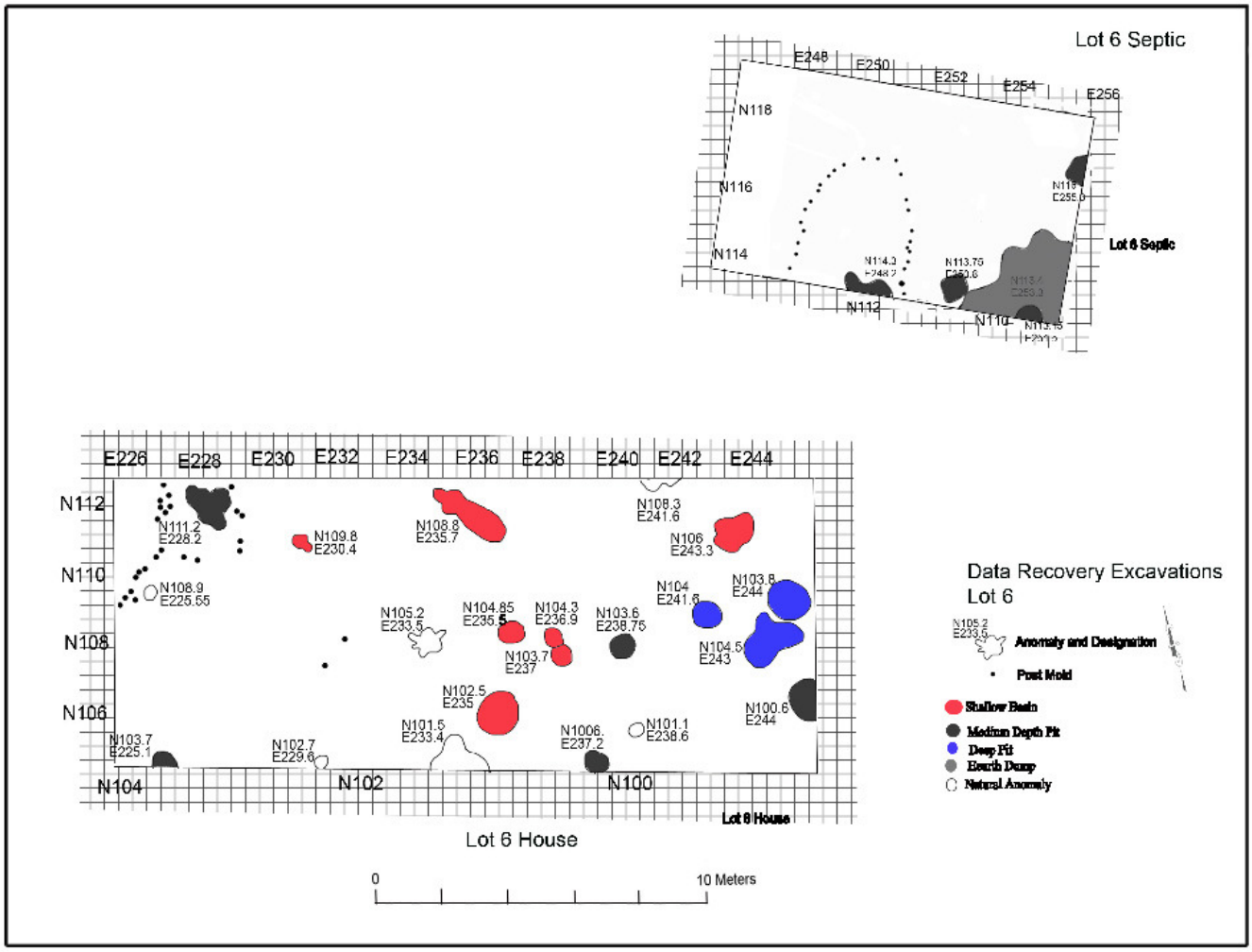


Figure 22. Distribution of deep-depth pit anomalies in the Lot 6 impact area

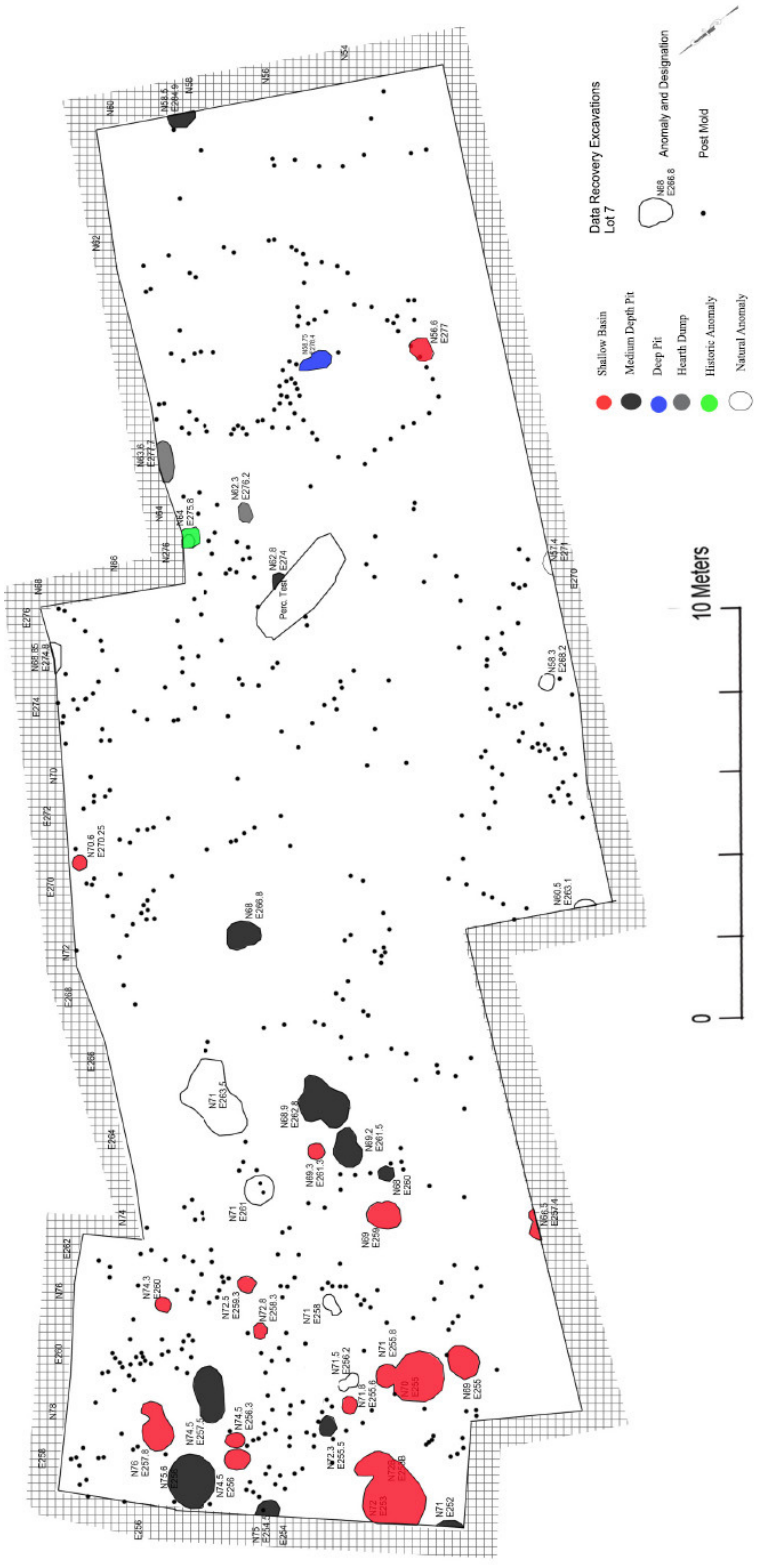


Figure 23. Distribution of deep-depth pit anomalies in the Lot 7 impact area

Again, unlike the medium depth pits, no large triangular points were found, but they did find three small triangle points. Four of the other points recovered dated to the Late to Transitional Archaic, one dated to the Early Woodland, and one appeared was a base fragment of an Early Archaic bifurcate point. These earlier points may have been accidentally included in the pit fill or collected by the occupants of the site either as curiosities or out of a notion of deep time or possibly ancestor worship.

Some of the large deep pits, interpreted as horticultural product storage pits ("barns" in the period literature) were a distance away from houses. This occurrence was even noted by the Plymouth colonists when the explored Cape Cod in November of 1620 (Young 1974: 145). Archaeologists noted this phenomena in Lot 1 where a possible storage pit was 12 meters from one house and four meters from another possible house location. In Lot 6, a group of storage pits were between eight and 16 meters from the nearest possible house form. The location of these isolated storage pits may be the result of a desire to place a food storage area away from the actual habitation area to hide it. The inhabitants may have been done this so that scavengers, attracted to the smell of human habitation around a house, or other humans who may have been more likely to take note of a house frame first, would not discover and loot the food storage pits after the owners had left for their winter quarters.

Archaeologists estimated the extent of cultivation practiced by the inhabitants by using the dimensions of the anomalies identified as storage pits to calculate the maximum volume of maize that they could hold and subsequently the minimum amount of land that they would need to cultivate to generate this much maize. This investigation is based on several assumptions: that people used these pits for storing maize; that the pits were at least half filled with stored maize; and that the maize stored in the pits originated from fields cultivated by the inhabitants of the site. The pits selected for inclusion in this analysis were those that appeared large and deep enough to store loose or bagged maize below the frost line. Analysis included 19 anomalies, representing large-size deep pits and large-size medium depth pits in the analysis (Table 13). These anomalies were located across the project area and

Table 13. Potential full capacity (in bushels) and acreage of large size medium depth and deep pits

Anomaly	Type	Diameter	Depth	Bushels	Acreage
L1-Feature 2	LDP	150 cm	68 cm	29.1	1.4
L2H-N270.5 E217.5	LDP	135 cm	65 cm	26.4	1.3
L2H-N280.75 E203.7	LMP	80 cm	45 cm	6.4	0.3
L4H-N155.65 E130.15	LDP	85 cm	40 cm	6.4	0.3
L4S-N144.5 E145.5	LDP	85 cm	50 cm	8.1	0.4
L4S-N147.8 E147.4	LMP	90 cm	35 cm	6.3	0.3
L4S-N149.7 E142.6	LMP	83 cm	25 cm	3.8	0.2
L5H-N131 E181	LMP	113 cm	25 cm	7.1	0.3
L5H-N135 E186.5	LDP	120 cm	45 cm	14.4	0.7
L6H-N100.6 E244	LDP	125 cm	45 cm	15.7	0.8
L6H-N103.6 E238.75	MDP	78 cm	40 cm	5.4	0.3
L6H-N103.8 E244	LDP	130 cm	80 cm	30.1	1.4
L6H-N104 E241.6	LDP	96 cm	40 cm	8.2	0.4

Table 13. (Cont.)

Anomaly	Type	Diameter	Depth	Bushels	Acreage
L6H-N104.5 E243	LDP	160 cm	60 cm	34	1.6
L6H-N108.8 E235.7	LDP	60 cm	85 cm	6.8	0.3
L6H-N111.2 E228.2	LMP	175 cm	30 cm	20.5	1
L6S-N113.15 E251.5	LMP	120 cm	35 cm	11.2	0.5
L7HN-N58.75 E278.4	LDP	70 cm	60 cm	6.6	0.3
L8HN-N63.9B E310B	LMP	90 cm	20 cm	3.6	0.2
L8HN-N64.5 E309.8	LMP	88 cm	30 cm	5.1	0.2
L8S-N88.9 E313.7	LMP	53 cm	40 cm	2.5	0.1
Total				**257.7**	**12.3**

LDP-Large Size Deep Pit LMP- Large Size Medium Depth Pit

represent a good cross-section of large size pits that people may have used to store maize. Archaeologists estimated that the total acreage of, and immediately around, the project area that people could have planted with maize was 28 acres. Researchers arrived at this estimate by looking at the total acreage of and around the project area and subtracting the portions that were too steep or too wet to be plantable **(Figure 24).**

If all the potential storage pits were in use at the same time, the total acreage that would need to be under cultivation (with two corn plants per hill and each hill spaced at three feet apart) would be 12.3 acres and the total yield would be 257.7 bushels. It is not believed that all the storage pits were in use at one time, but archaeologists suspect that the storage pits in L6H were in use at the same time. If this was the case, then a minimum total of 5.5 acres would have needed to have been under cultivation by the six households potentially represented by the six pits in this impact area, a total of .9 acres per family. Analysis assumes the following: the maize grown by a family was not stored in storage pit; a portion was kept within the household for daily family use; some was lost to vermin; some was eaten green; and given as tribute to the community sachem. When considering all variables, another quarter of the amount derived for each pit could be added to the total produced. Adding another quarter to the .9 acres per family would mean that the average household potentially cultivated approximately 1.2 acres for their own use.

Analysis compared these findings to Sandy's Point site in Yarmouth, the only other Massachusetts site that contained a Native house form, storage pit, and an extant field (Mrozowski 1992). The house form at this site measured six by seven meters, which by comparison with the houses at the Ja-Mar site could have potentially housed 11 persons. The storage pit measured one meter wide by 75 cm deep, meaning that it had the potential to hold up to 16 bushels of loose shelled maize. Archaeologists identified the field as measuring 78 x 120 meters, which is approximately 2.3 acres with plants spaced approximately one meter apart. Excavation identified 40 hills in a portion of the field measuring 12 x 12 meters meaning that the entire field of 78 x 120 meters could potentially have 2600 corn hills within it. The findings from Sandy's Point, 2.3 acres per a household of potentially 11 people, is approximately double those from Ja-Mar where archaeologists estimated an average of 1.2 acres for each of the households represented by the storage pits at the site. The fact that the Sandy's Point site dates to the seventeenth century while archaeologists believe that the Ja-Mar occupation was Pre

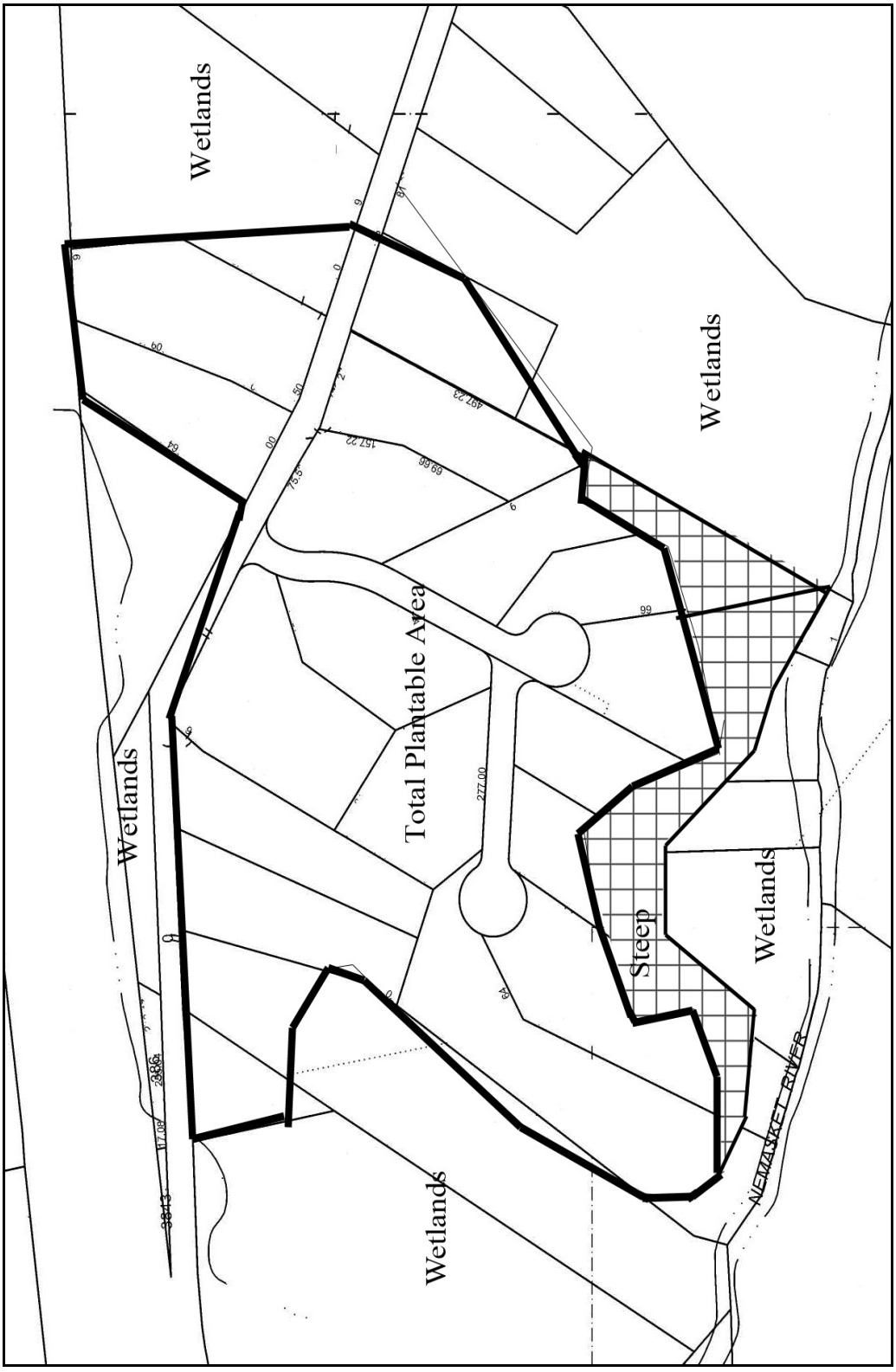


Figure 24. Plantable areas at and around the Ja-Mar project area

Contact may account for this difference. Archaeologists have hypothesized that maize production increased following European colonization in the seventeenth century due to a new market for maize- the European colonists- that resulted in an increase in maize to produce surplus that could be traded to the colonists for European goods.

Fire-Cracked Rock Concentrations

Thirteen fire cracked rock (FCR) concentrations were identified. These anomalies were concentrated in Lot 4 and 5 with isolated examples in L6S and L7HN (Table 14) **(Figures 25, 26-30)**. Fire-cracked rock and charcoal were present in all anomalies with debitage and

Table 14. Fire cracked rock concentrations

Anomaly	Width	Depth	Debitage	Pottery
L4H-N140.45 E124.75	40 cm x 15 cm	5 cm	Present	Present
L4H-N147.2 E130.2	80 x 105 cm	5 cm	Present	
L4H-N149.5 E127.9	40 x 40 cm	5 cm	Present	
L4S-N147.2 E142.5	150 x 100 cm	10 cm	Present	Present
L4S-N151.8 E143	10 x 30+ cm	15 cm		
L5H-N130.6 E185.7	50 x 30 cm	5 cm		
L5H-N132 E173.75	122 x 145 cm	5 cm	Present	
L5H-N134.4 E182.2	40 x 25 cm	5 cm	Present	Present
L5H-N136.3 E180.4	70 x 60 cm	5 cm		
L6S-N113.4 E253.3	105 x 85 cm	5 cm	Present	Present
L7HN-N56.6 E277	69 x 50 cm	10 cm		
L7HN-N58.3 E268.2	50 x 30 cm	15 cm		
L7HN-N63.6 E277.7	70 x 20+ cm	10 cm		

pottery occasionally co-occurring in the L4 to L6 concentrations. One fire-cracked rock concentration was also present in the upper limits of medium size medium depth pit L7HN-N68 E266.8. Most of the concentrations in L4H were within house forms, except for L4H-N140.45 E124.75 which appears outside of a house. Due to difficulties in identifying house forms, this anomaly may be within a house as well. Archaeologists encountered anomaly L4H-N147.2 E130.2 just southeast of the center of the longhouse identified in this impact area. Archaeologists identified an additional fire-cracked rock concentration in the plowzone but did not extend into the subsoil **(Figure 31)**. This was at the opposite end of the longhouse, spaced about the same distance from the end of the house as L4H-N147.2 E130.2.

Anomaly L4S-N147.2 E142.5 was almost midway between two concentrations of medium-size medium-depth pits possibly indicating that it was a communal hearth used by the two families in this

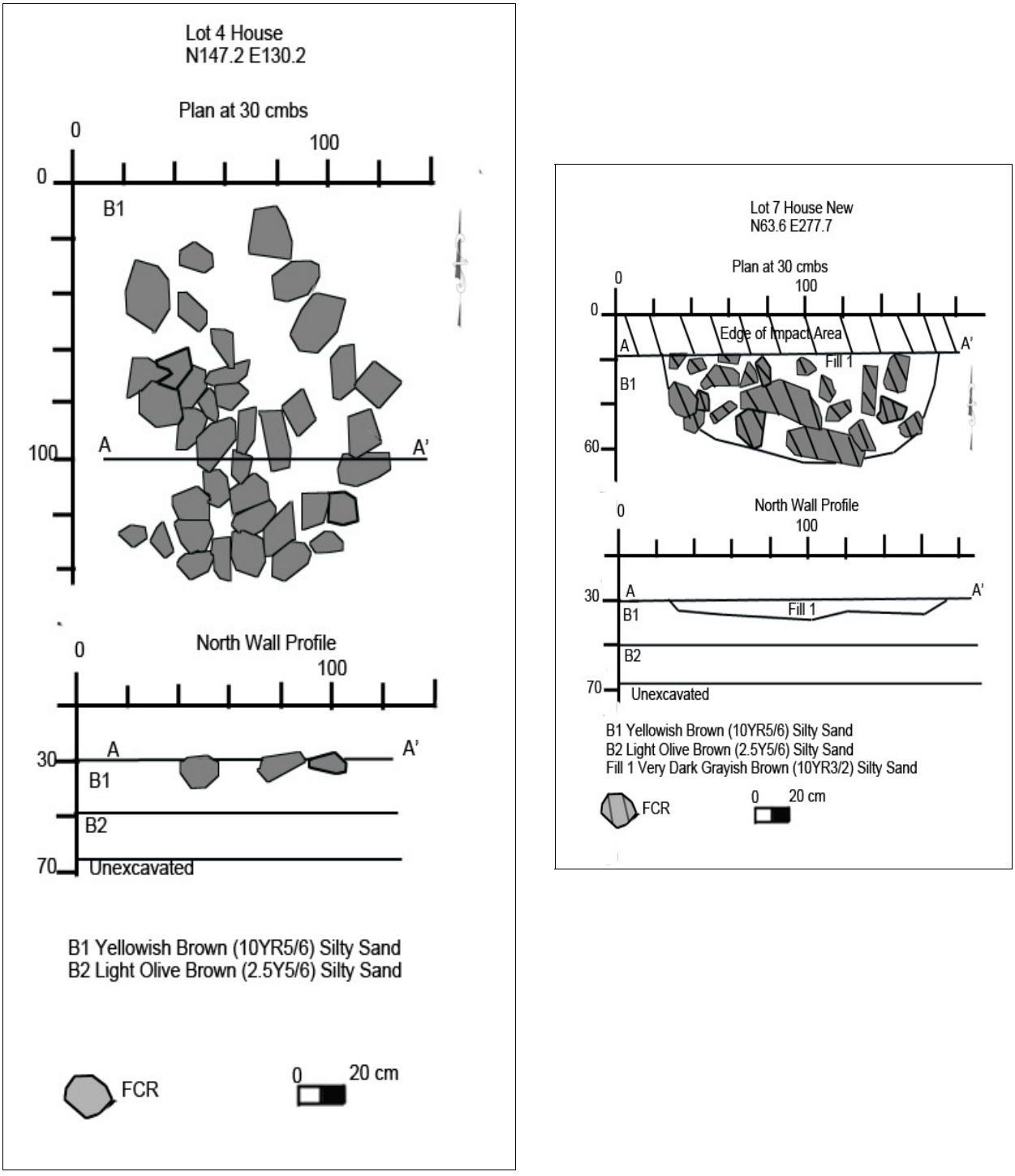


Figure 25. Representative example of fire-cracked rock concentration anomalies

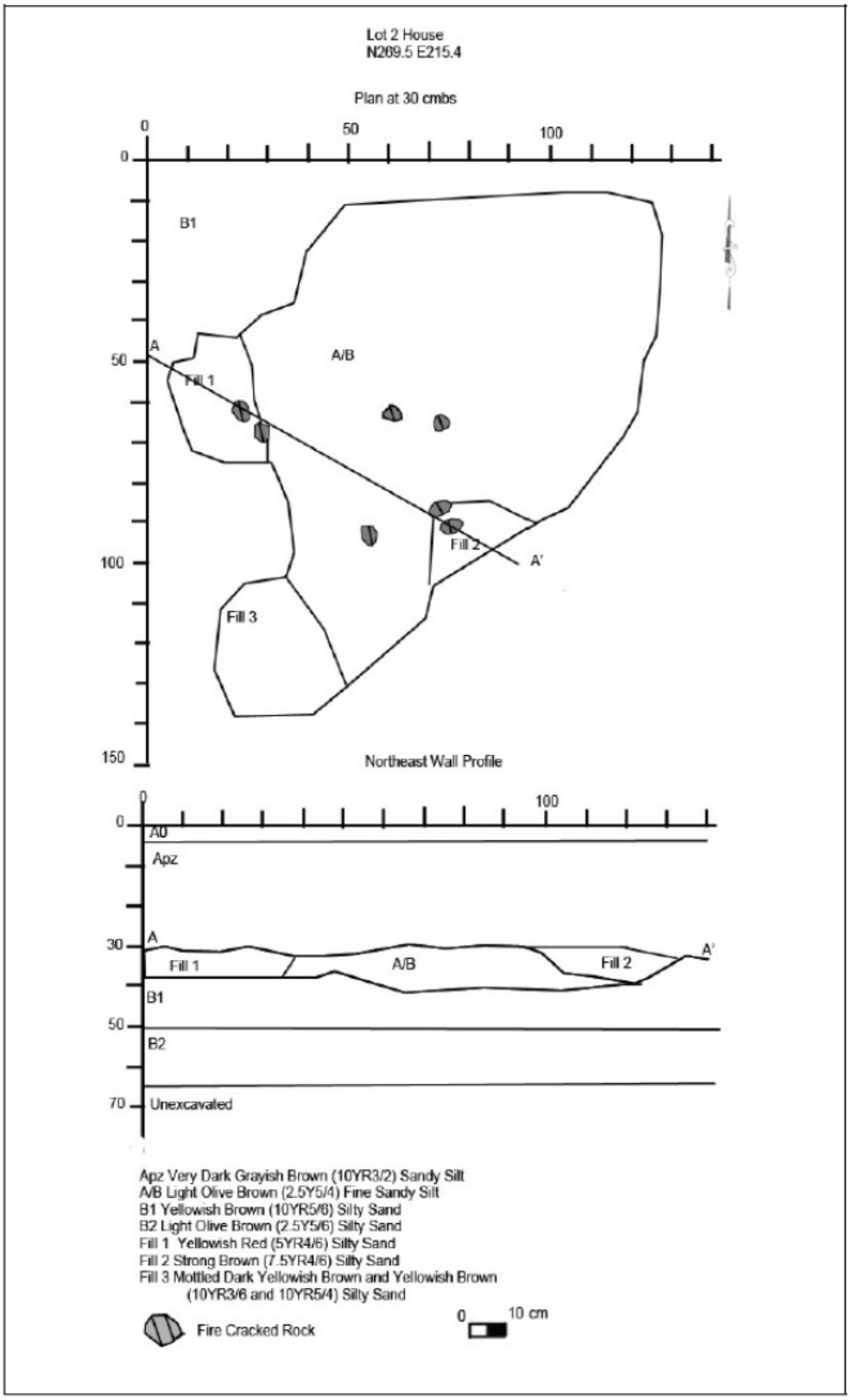


Figure 26. Fire-cracked rock anomalies from Lot 2

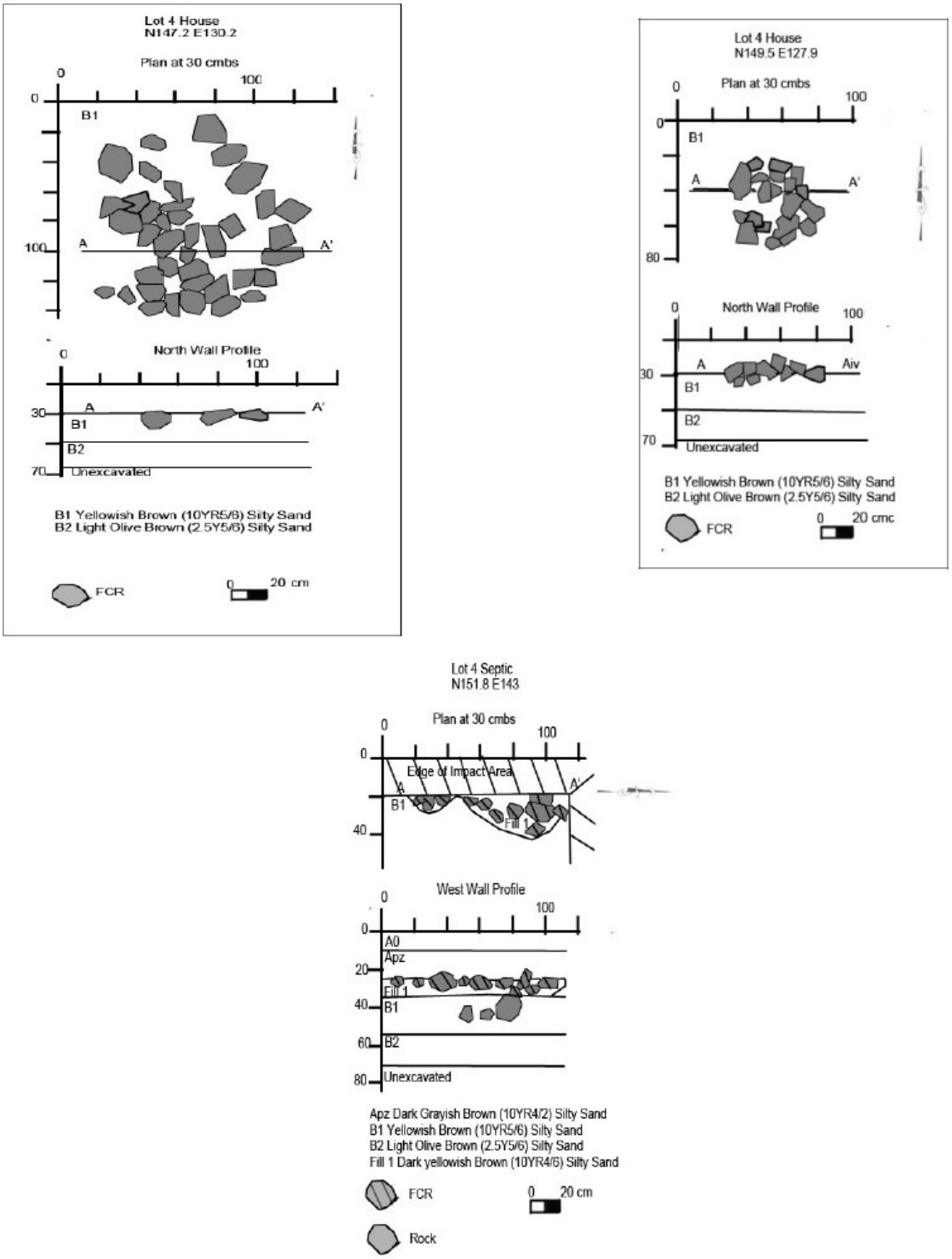


Figure 27. Fire-cracked rock anomalies from Lot 4

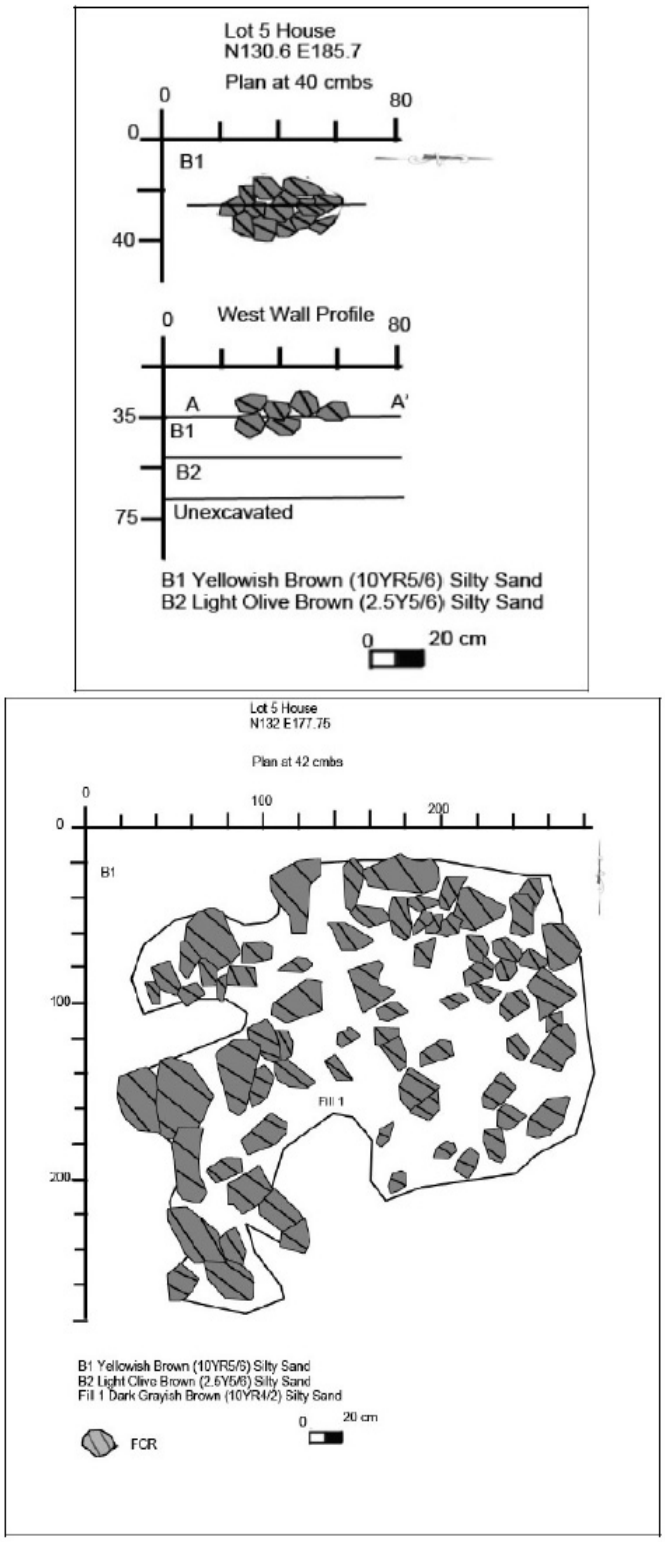


Figure 28. Fire-cracked rock anomalies from Lot 5

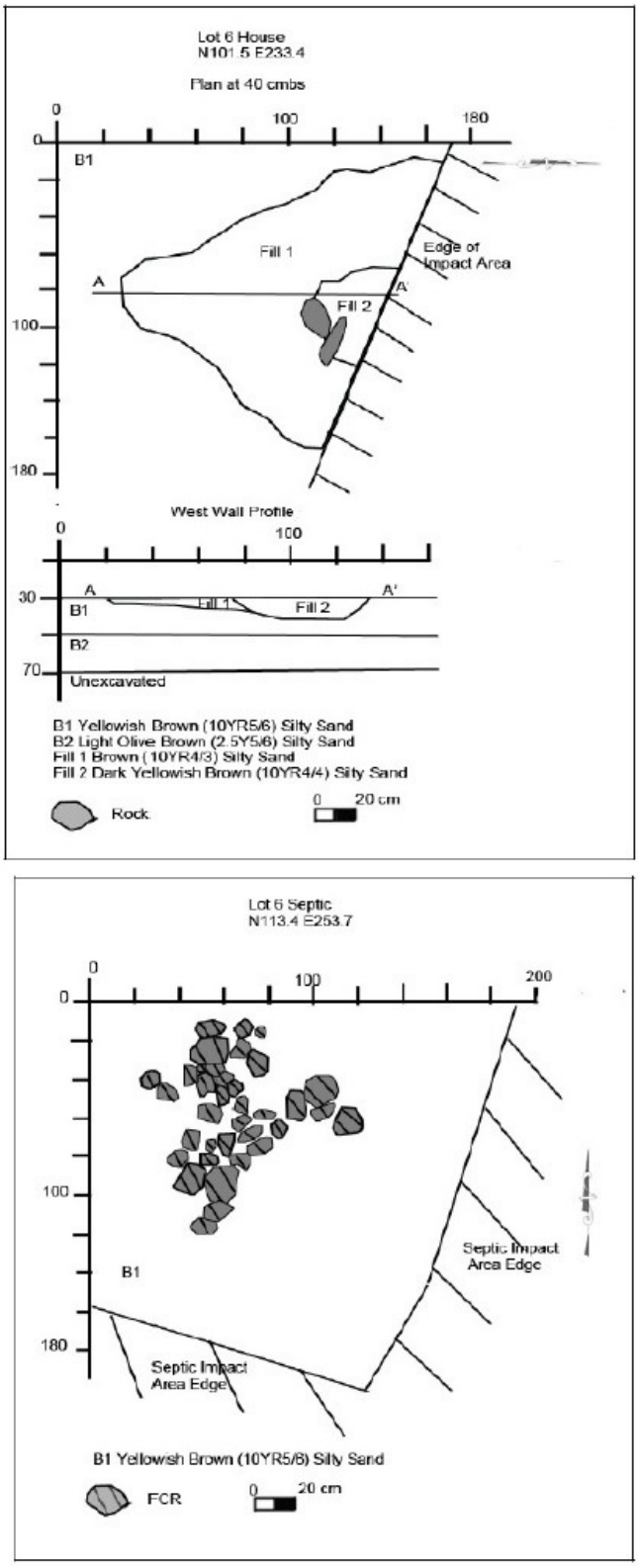


Figure 29. Fire-cracked rock anomalies from Lot 6

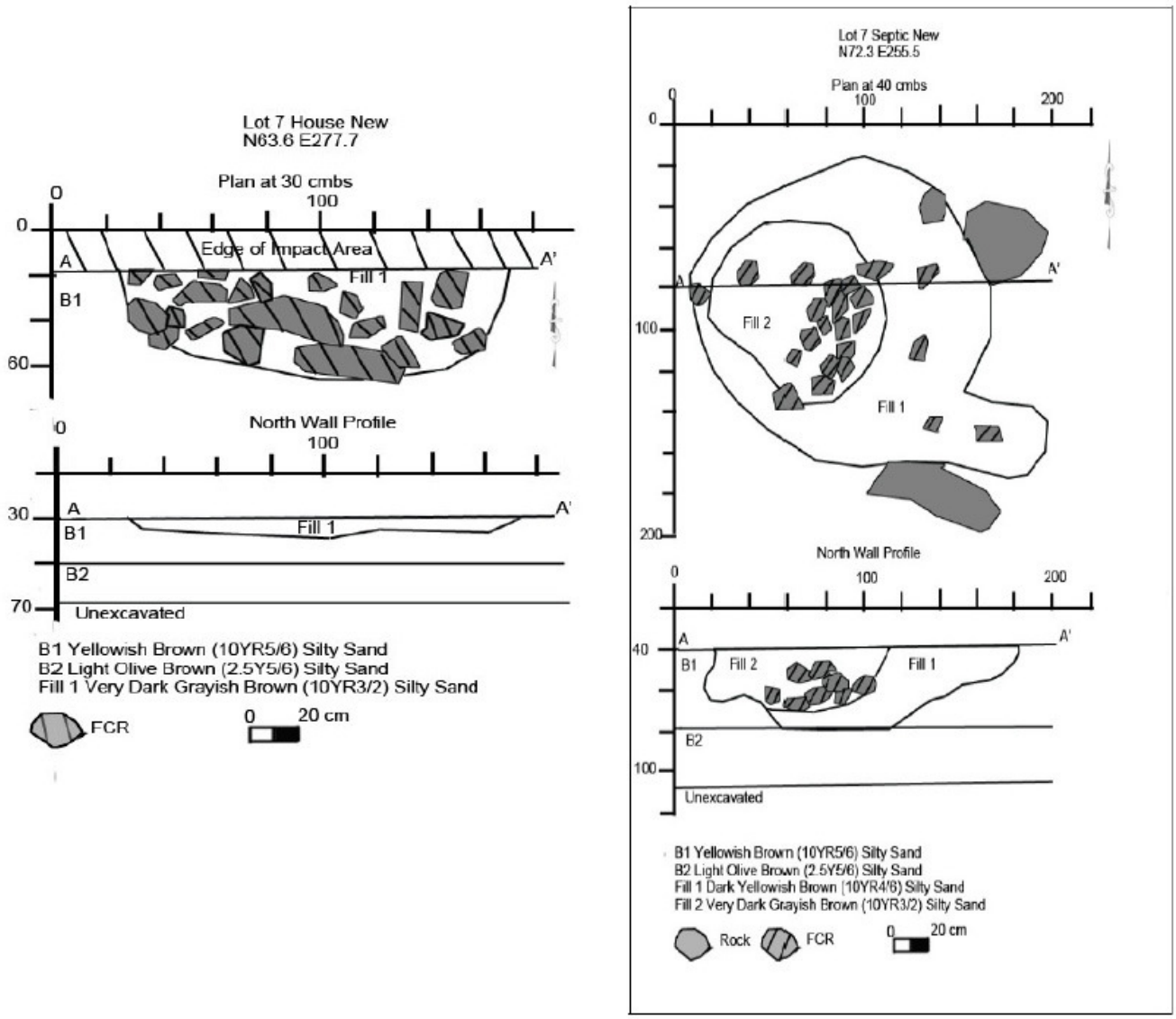


Figure 30. Fire-cracked rock anomalies from Lot 7

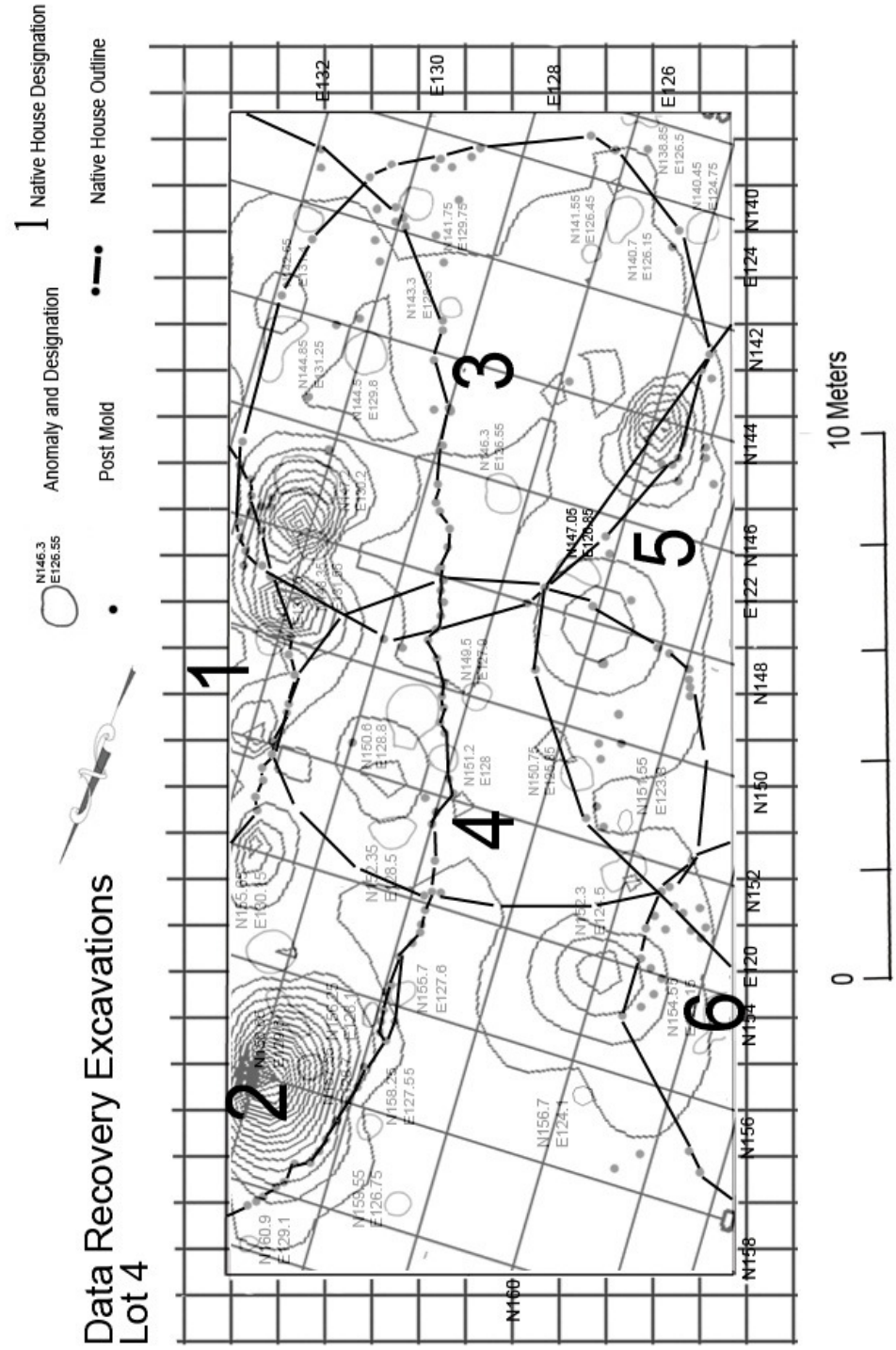


Figure 31. SURFER distribution of Fire-cracked rock in the Lot 4 House impact area

house. The second fire-cracked rock anomaly, L4S-N151.8 E143, in this impact area was further to the north possibly outside of the house or possibly associated with a second unidentified house form.

The fire-cracked rock anomaly L5H-N132 E173.75 was in the western half of a longhouse just south of the center line of the house. The position of this hearth would have been similar to that in L4H. Analysis interpreted the other three fire-cracked rock anomalies in L5H possibly be associated with a longhouse extending from southeast to northwest. These pits were roughly equidistantly spaced apart.

The fire-cracked rock concentration anomaly in the Lot 6 Septic impact area, L6S-N113.4 E253.3 , was outside of a house form and archaeologists interpreted it as reflecting a hearth dump/ refuse disposal area or possibly a scattered outside hearth associated with the house form in this impact area.

The fire-cracked rock concentrations in the lot 7 House New impact area, existed within various house forms. Anomaly L7HN-N56.6 E277 was within the northern end a longhouse form in a similar location to the hearths within longhouses identified in L4H and L5H. Anomaly L7HN-N58.3 E268.2 may have also been located within the same house form as anomaly L7HN-N56.6 E277, but being located more at the southern end Alternately it may be associated with an overlapping house form that was roughly round-shaped. Anomaly L7HN-N63.6 E277.7 was Figure 31. SURFER distribution of fire-cracked rock in the Lot 4 impact area either close to the north wall of a round house form, or it may represent a refuse dump outside of one of the various overlapping house forms in this area. The fire cracked rock concentration in medium-depth medium size pit L7HN-N68 E266.8 is in almost the exact center of a house form and is a hearth built in a filled medium size pit.

Overall, the number of fire-cracked rock anomalies identified is decidedly low when compared with the number of house forms identified. This may be a result of the presumed season of occupation for the site, spring to fall with an emphasis on summer planting and the general low impact occupation observed especially in lots 7 and 8. This occupation did not appear to have left much in the way of artifacts in most of these impact areas. This may relate to the Native habit of potentially having more than one planting area associated with a family and the tendency to move between planting areas during the planting season "And sometimes having fields a mile or two, or many miles asunder, when the work of one field is over, the remove house to the other.." (Williams 1971: 46). It is possible that the occupations in lots 7 and 8 are evidence of this removal to different fields, thus resulting in a low artifact density in these areas, where the occupation to the west in lots 4-6 is evidence of a focus on planting for the entire season at this one area.

Large fire-cracked concentrations in most cases were well represented in the plowzone as well. These concentrations were in the plowzone, represented by scatters that measured on average two meters by four meters, probably representing scatter caused by plow drag. Archaeologists found secondary concentrations in L4H, L4S, and L5H. Plotting of plowzone occurrences of fire-cracked rock by SURFER program showed a second hearth within the L4H longhouse and a possible hearth in one of the round house forms. A previously unidentified FCR concentration was also identified in on e of the narrow longhouse forms in L4S. Fire-cracked rock scatters in L5H appeared associated with the fire-cracked rock anomalies identified during stripping and subsoil scraping. Two small fire-cracked rock concentrations were present in the plowzone possibly associated with a hearth in the east end of one of the longhouses. Archaeologists identified small fire-cracked rock concentrations that extended into the

subsoil were not represented in the plowzone, possibly indicating that these anomalies were older than the ones impacted by later plowing.

Quartz Concentrations

Plowzone stripping identified a small quartz concentration in L4H. Anomaly L4H- N151.2 E128 measured 35 x 30 cm and was five centimeters deep. It consisted of a dense deposit of quartz shatter and flakes. Archaeologist found that this concentration was directly against the interior wall of the longhouse in L4H. Analysis interpreted that this concentration represents a lithic debitage refuse deposit beneath a bed platform by someone knapping onto a mat or skin within the house. Striking platform angles ranged from 40 to 85° with the average being 65.6°. Complete flakes ranged from .4 to 2.5 cm in length with the average being 1.47 cm. Most (80.5%) of the shatter recovered was flat shatter and most of the flakes were broken. No cortex was present on any of the debitage. The lithic data suggests that this concentration resulted from a single episode of bifacial reduction of a previously prepared core or blank.

Historic Anomalies

Excavation identified historic anomalies in the L1HN, L4S and L7HN. The historic anomaly from L1HN (L1HN-N300 E178) was a rectangular dry-laid stone cellarhole associated with a previously undocumented structure dating to the eighteenth to early nineteenth century **(Figures 33-34).** The cellar hole was found to measure three by five meters and was 135 cmbs deep. Archaeologists excavated it in a series of 5 cm levels with material being separated by one-meter square and by deposit layer. The nature of the deposit layers encountered indicates that the cellarhole was quickly and purposefully filled after the structure surrounding had been systematically removed.

Excavation recovered relatively few artifacts from the cellar hole with the total count being 3154 piece. Most (n=2241) of the artifacts recovered were charcoal associated with ash deposits in the southeastern corner of the cellarhole where a cellar ash box or possible hearth was located. The remainder was historic material (n=628) such as pottery (brick, creamware, white salt-glazed stoneware, redware, slipware, tin-glazed earthenware and pipe stems, iron artifacts, hand-wrought and machine-cut nails), unburned (n=185) and calcined (n=5) faunal remains and lithic artifacts (n=95). The lithic artifacts consisted of both large objects (steatite bowl fragment, nutting stone, small mortar, cores) as well as quartz (n=72), hornfels (n=1), quartzite (n=1) and rhyolite (n=14) debitage and one quartzite biface and a rhyolite Levanna point. The larger artifacts were found within a cobble layer that was virtually devoid of soil which may represent redeposited field clearing stones, while the smaller artifacts were found in the soils above and below this cobble layer.

Archaeologists did not find any trace of the hearth associated with the house and a portion of the house lies outside of the impact area to the south. The cellar hole, while providing an interesting archaeological anomaly, is not believed to represent a significant archaeological resource and archaeologists recommended that its presence should not interrupt the development of this lot. Plowzone stripping of the impact area failed to yield other traces of historic occupation except possibly for some of the natural anomalies that they encountered which may represent planting or tree holes associated with the historic occupation. Archaeologists believe that they tested a significant portion of the cellarhole and that the materials recovered from the cellarhole, when combined the historic period artifacts recovered from plowzone testing, should provide an adequate sample of the assemblage

associated with the historic period occupation of the site. Preliminary archival and historical research indicates that the house was likely associated with Ichabod Wood Jr. who lived in the area from 1775-1826, a time frame, which fits all of the recovered material. Ichabod Wood Jr. Is believed to have been a fairly typical farmer of the period and while he does appear in the historic documents regarding land transactions and such, does not appear to have been a prominent member of the Middleborough community of his time. The artifacts recovered will help to illuminate more about him and his family's lives in post-Revolutionary New England.

Archaeologists interpreted the remaining historic anomalies in L4S and L7HN as fence post holes and molds associated with eighteenth to twentieth century farming of this land.

Natural

Archaeologists found that most of the 22 anomalies of natural origin were in L1H, L4H, and L5H (Table 15) **(Figures 35-42)**. These locations also had relatively high occurrence of

Table 15. Natural anomalies dimensions, identifications, and contents

Anomaly	Dimensions	Depth	Type	Artifacts
L1H-N303.6 E182.5	7 x 10 m	NA	Tree Hole	Historic
L1H-N315 E173.65	30 x 45 cm	5 cm	Tree Hole	NCM
L1H-N315.3 E173.25	25 x 20 cm	5 cm	Tree Hole	NCM
L2H-N273.75 E218.1	30 x 31 cm	25 cm	Rodent Run	NCM
L4H-N141.75 E129.75	52 x 43 cm	25 cm	Tree Hole	Pottery, FCR, Charcoal
L4H-N144.85 E131.25	75 x 120 cm	15 cm	Tree Hole	NCM
L4H-N147.05 E126.85	45 x 430 cm	45 cm	Rodent Burrow	NCM
L4H-N152.35 E128.5	40 x 220 cm	15 cm	Rodent Burrow	Debitage, FCR
L4S-N145 E142.3	23 x 23 cm	5 cm	Rodent Burrow	NCM
L4S-N145.75 E146.4	30 x 25 cm	70 cm	Tree Hole	Debitage, Charcoal
L5H-N129.9 E189.8	20 x 35 cm	30 cm	Rodent Burrow	Debitage, Charcoal
L5H-N133.7 E177	75 x 123 cm	50 cm	Rodent Burrow	NCM
L5H-N135.5 E178.4	110 x 230 cm	20 cm	Rodent Burrow	Debitage, Pottery, CC, Historic
L5H-N136.4 E183.5	70 x 110 cm	30 cm	Rodent Burrow	Debitage, Pottery, Historic
L5H-N137.2 E180.4	50 x 55 cm	20 cm	Rodent Burrow	FCR
L6H-N105.2 233.5	60 x 70 cm	20 cm	Tree Hole	Debitage, CC, Historic
L7H-N71 E263.5	130 x 180 cm	5 cm	Depression	NCM
L7HN-N60.5 E263.1	36 x 50 cm	10 cm	Tree Hole	NCM
L7HN-N68.85 N274.8	15+ x 75 cm	5 cm	Rodent Burrow	NCM
L7SN-N71.5 E256.2	37 x 63 cm	10 cm	Rodent Burrow	NCM
L8HN-N79.5 E315.9	50 x 65 cm	5 cm	Rodent Burrow	NCM
L8S-N92.6 E314.9	34 x 36 cm	5 cm	Depression	NCM

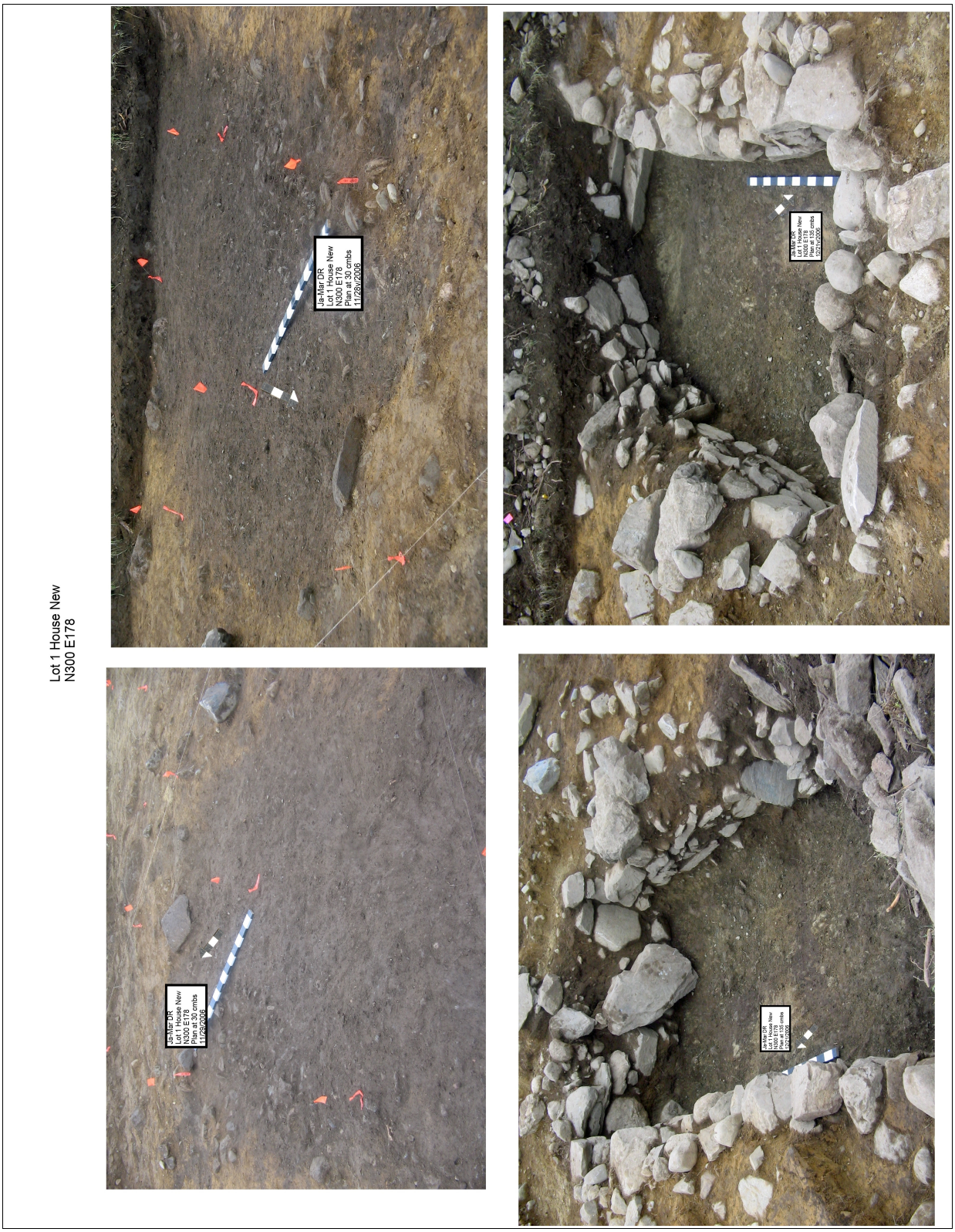
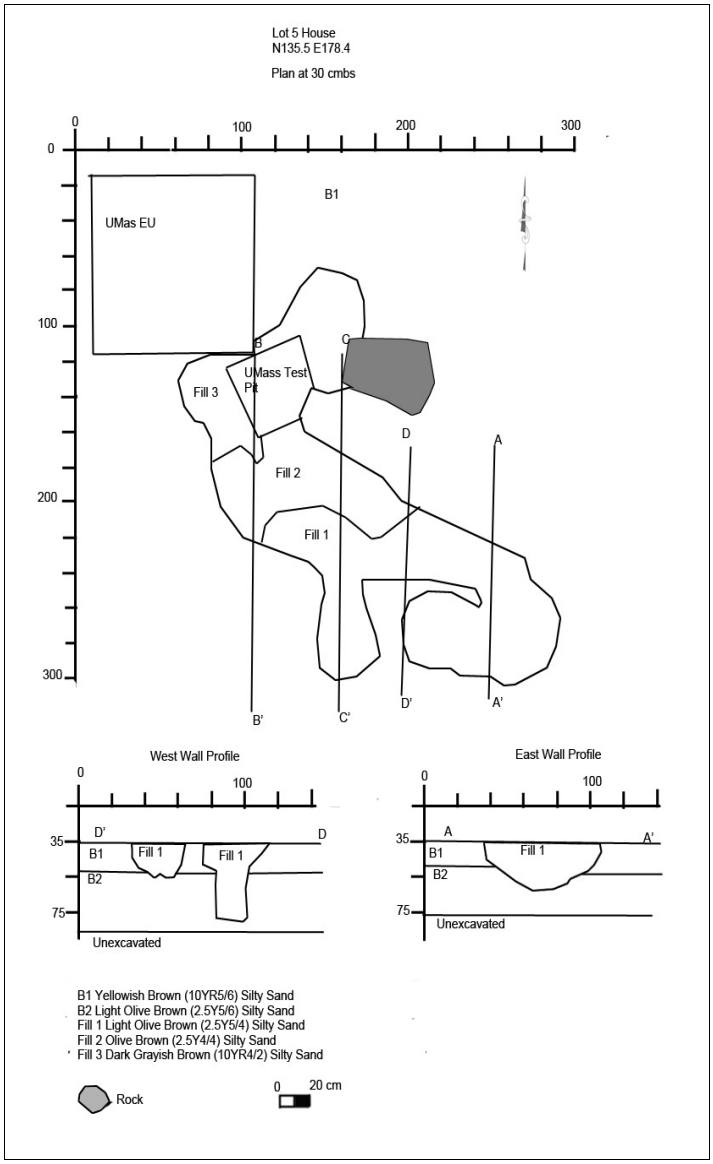


Figure 33. L1HN cellarhole plan view

Figure 34. L1HN cellarhole cellar hearth



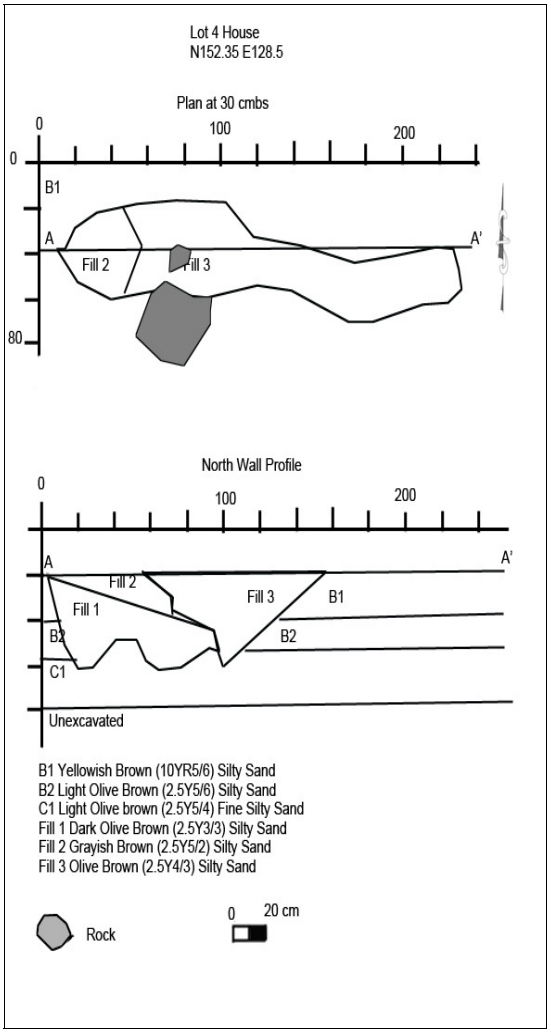
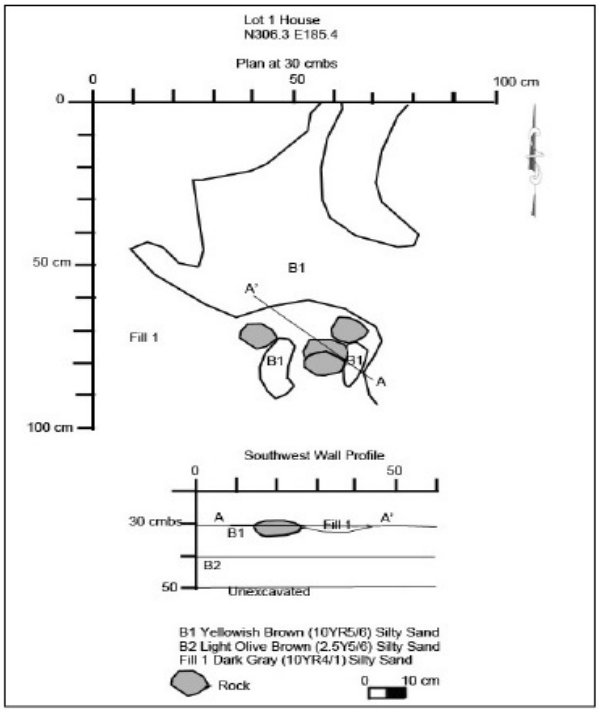
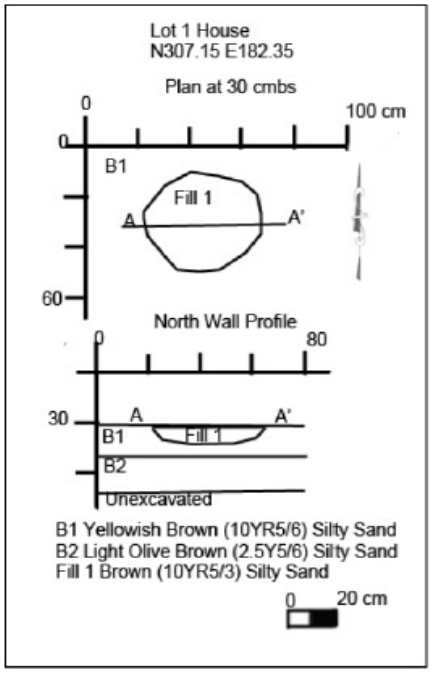
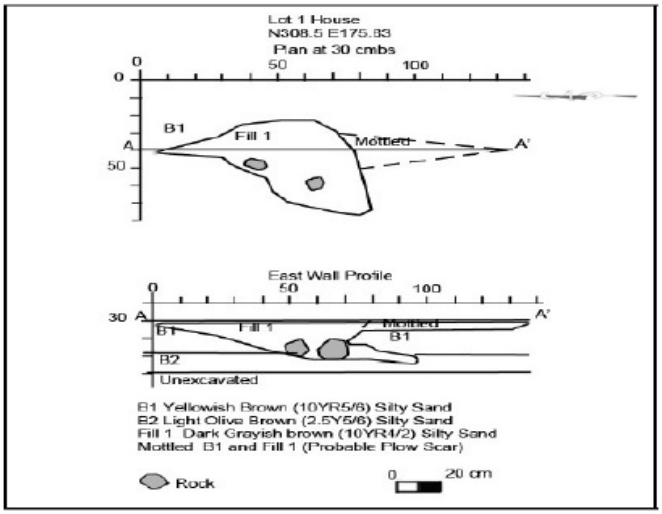


Figure 35. Representative example of natural anomalies







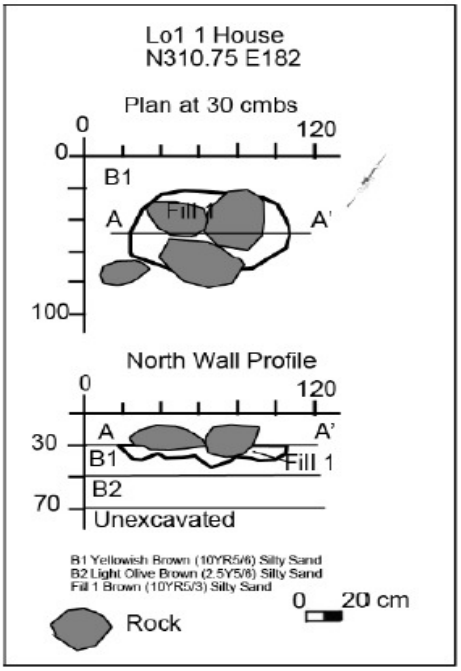


Figure 36. Natural anomalies from Lot 1

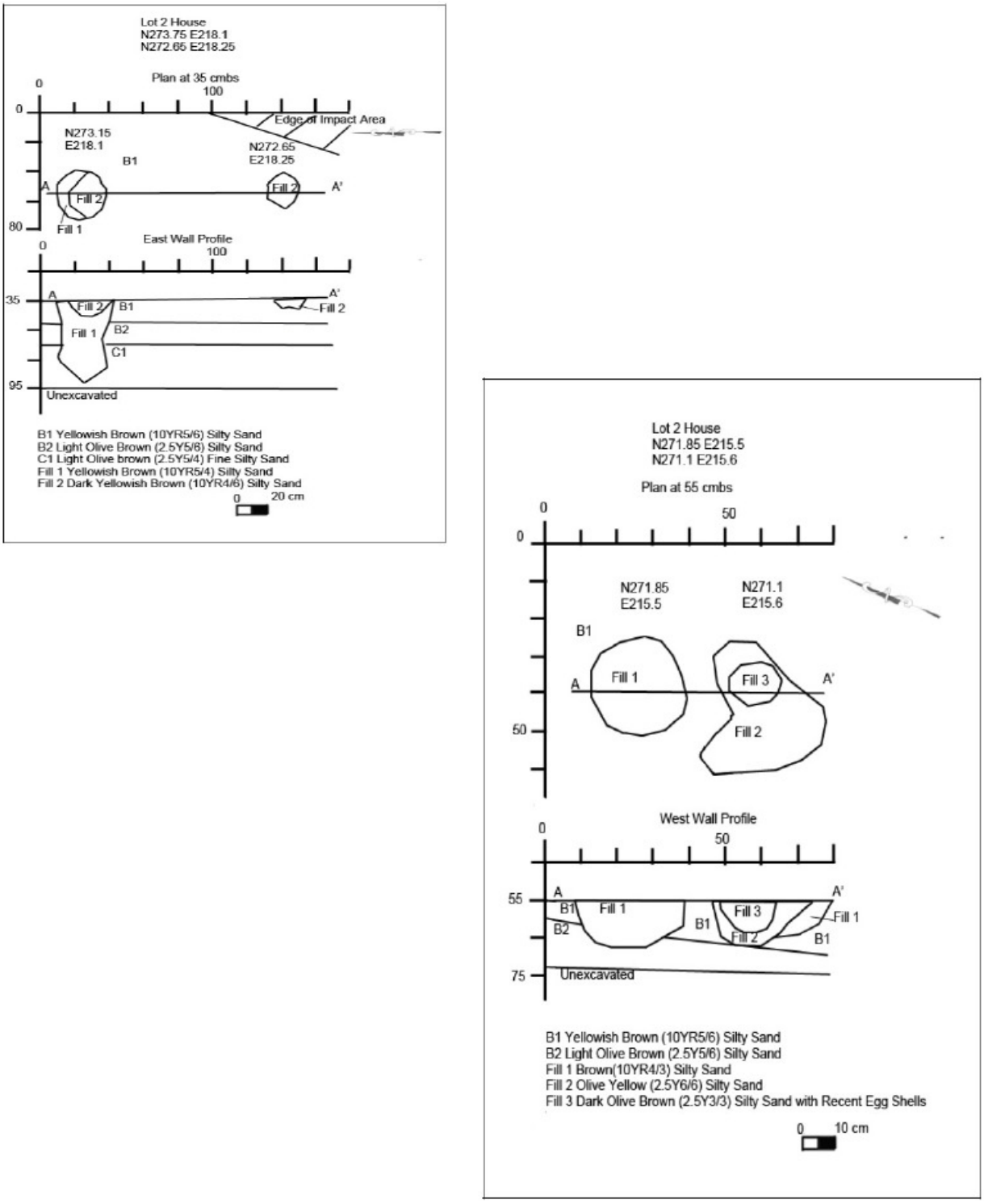
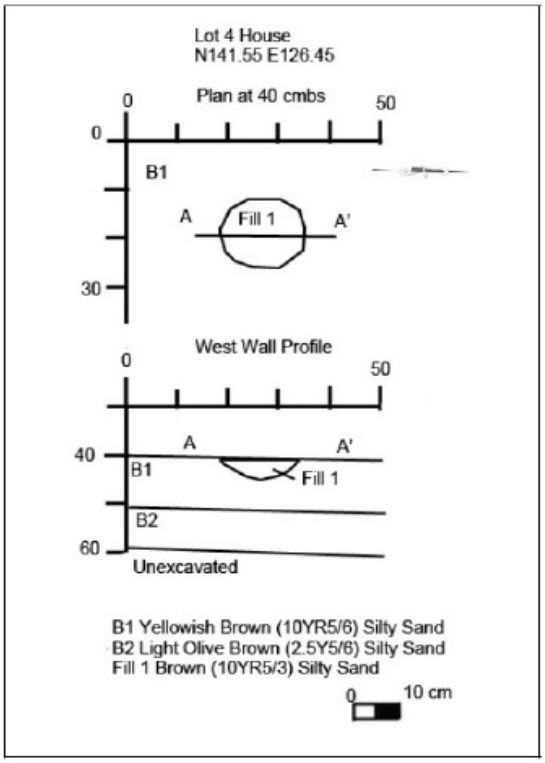
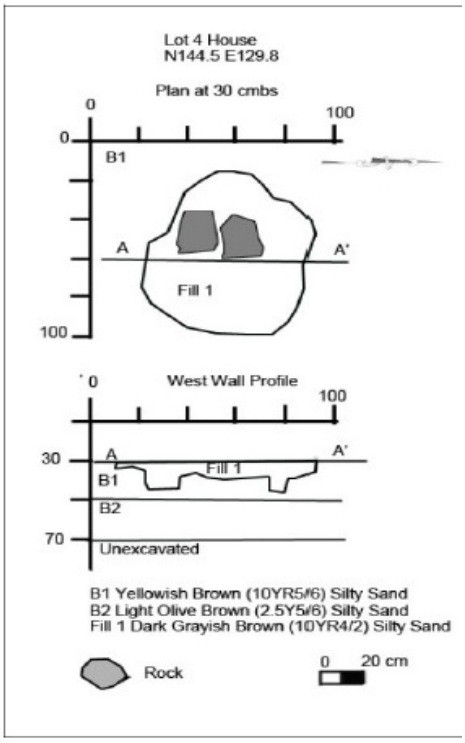
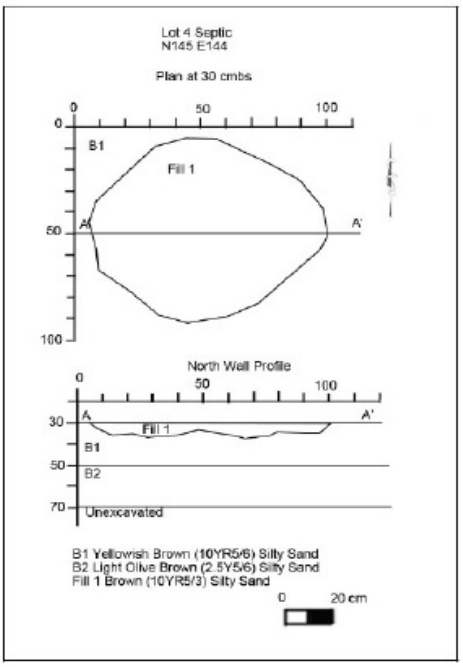


Figure 37. Natural anomalies from Lot 2







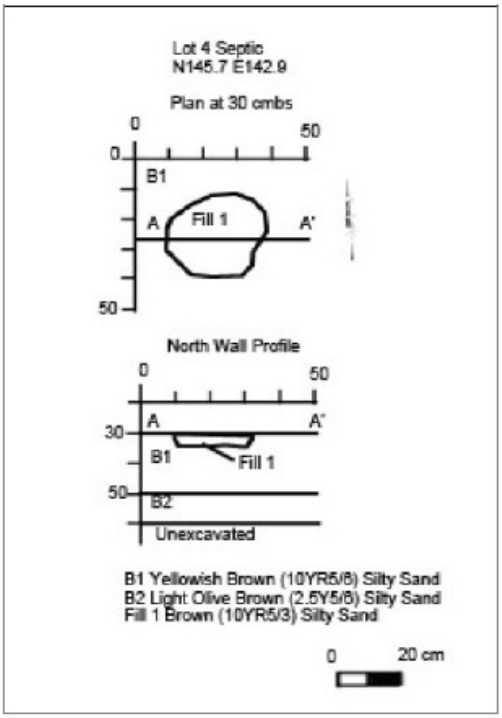
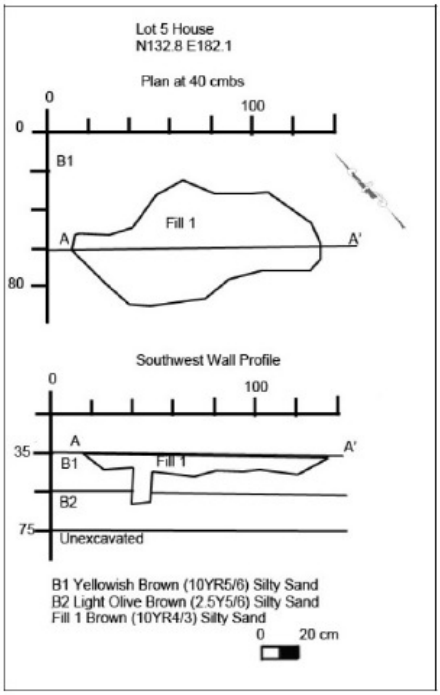
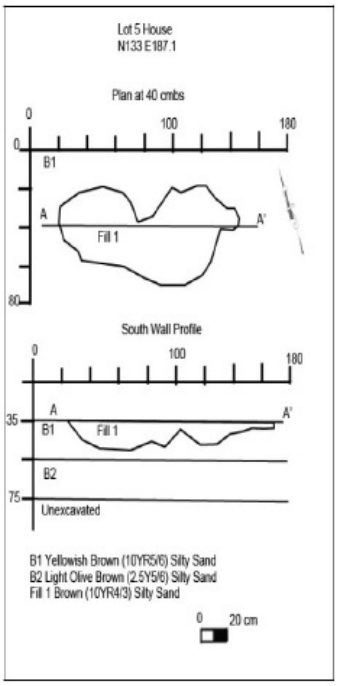
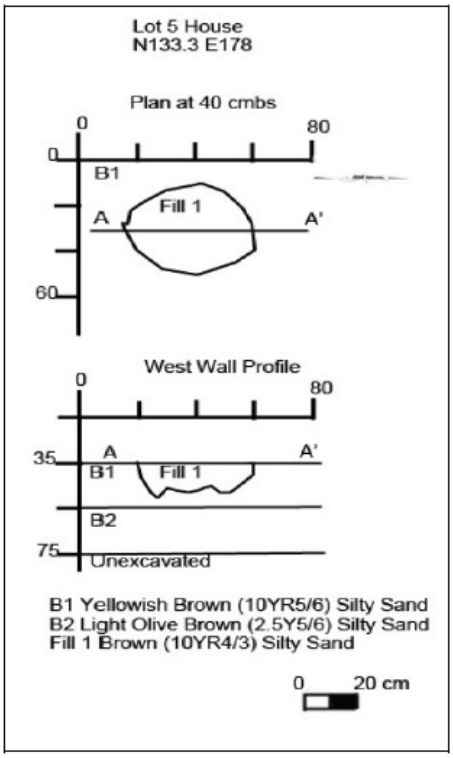


Figure 38. Natural anomalies from Lot 4







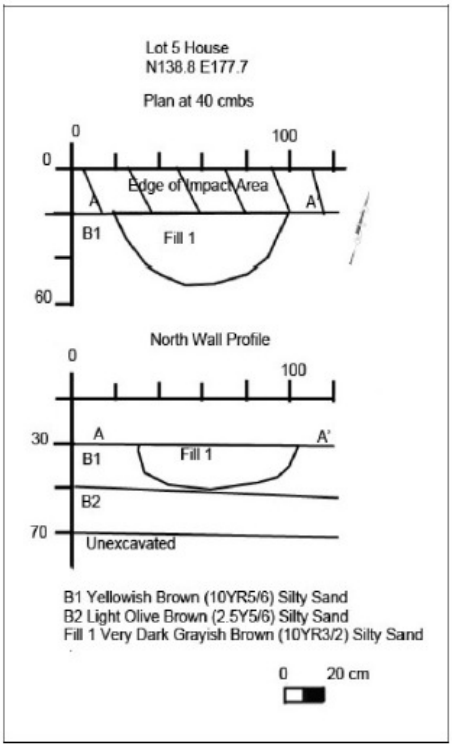


Figure 39. Natural anomalies from Lot 5

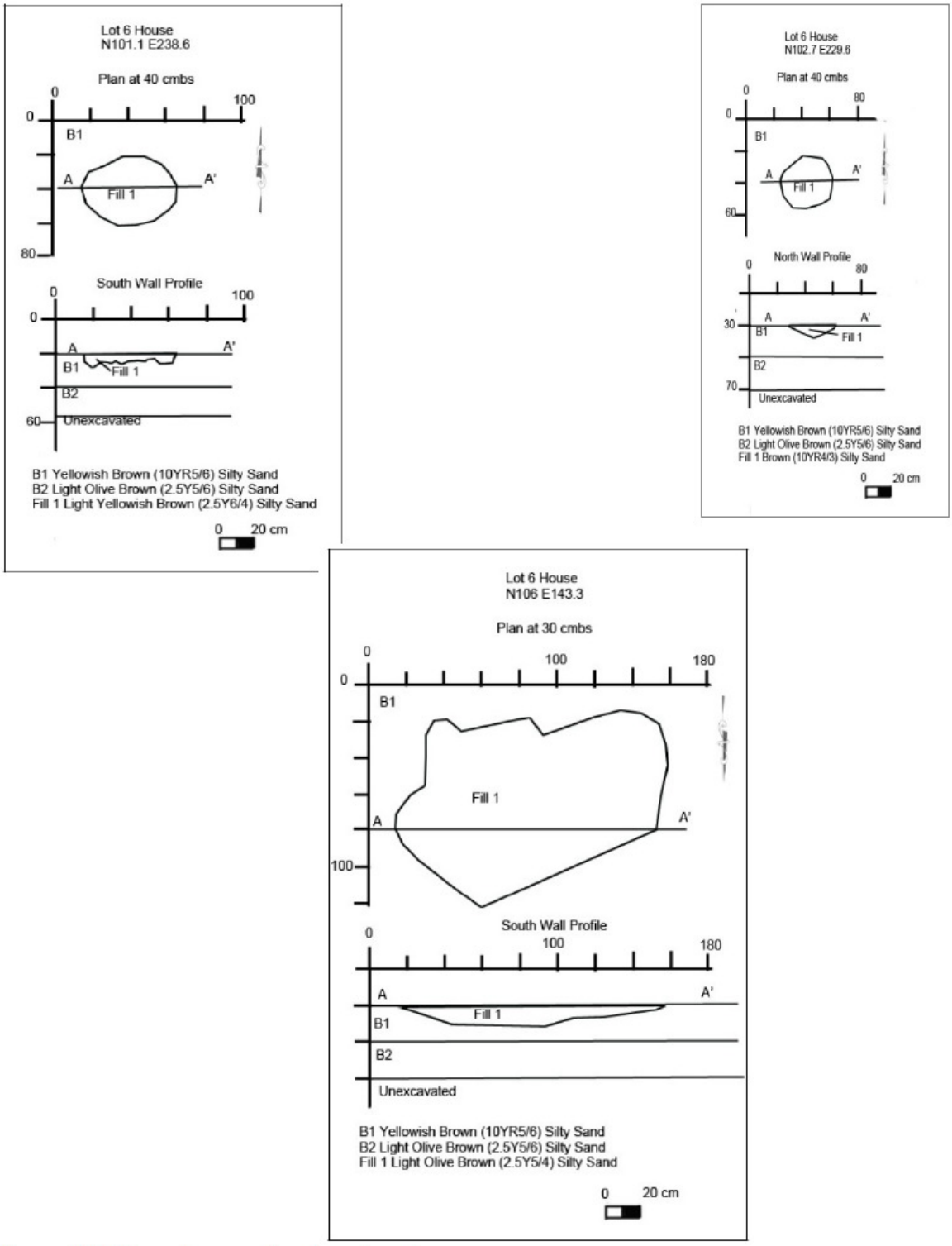


Figure 40. Natural anomalies from Lot 6

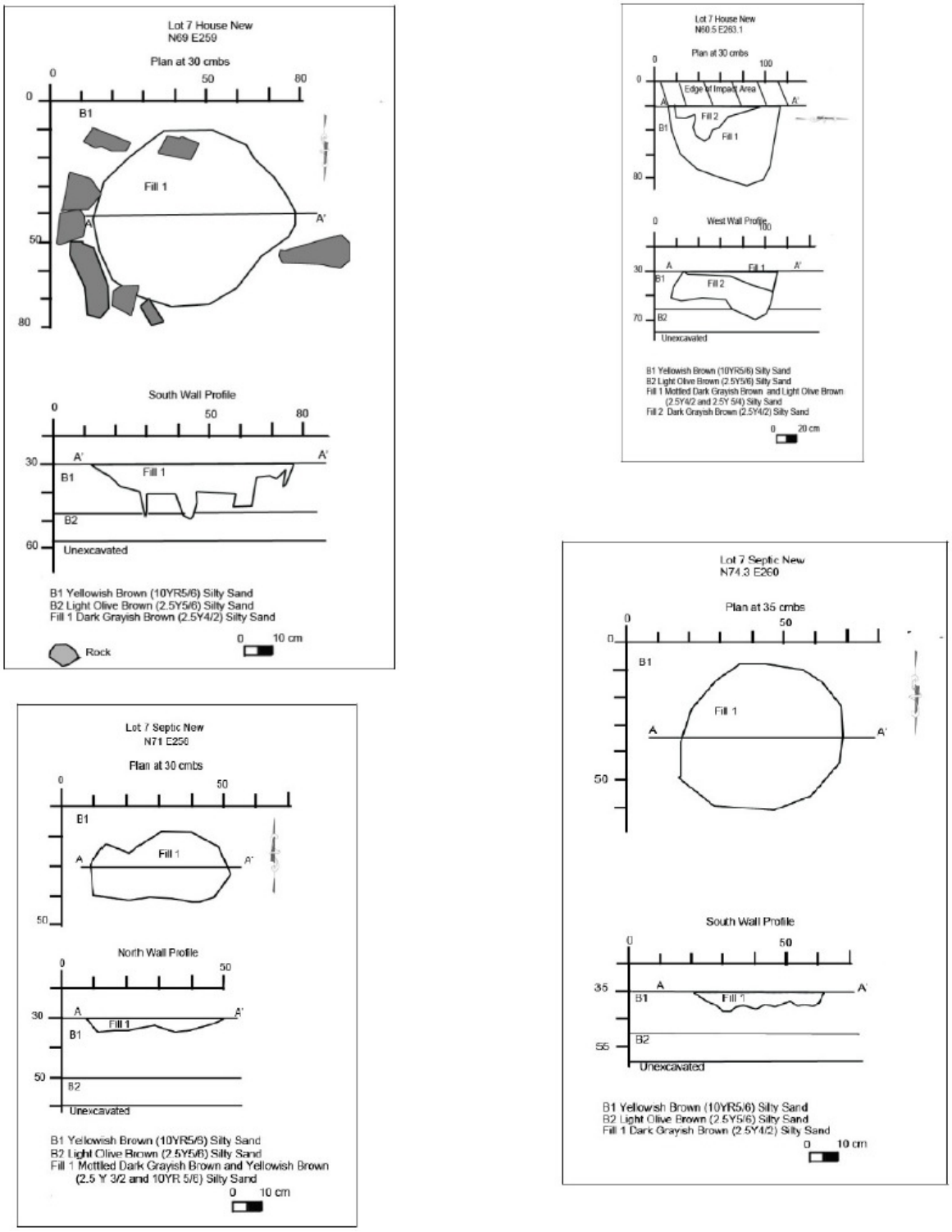
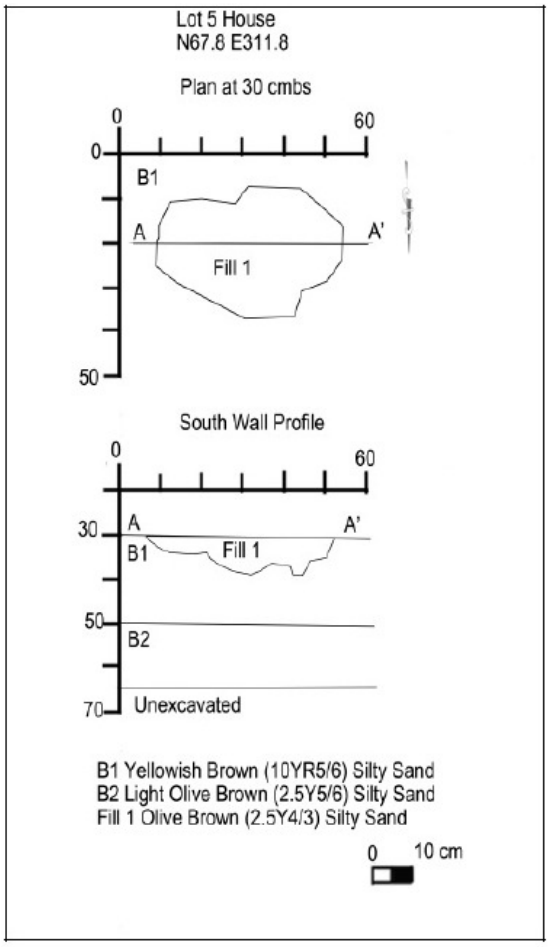


Figure 41. Natural anomalies from Lot 7



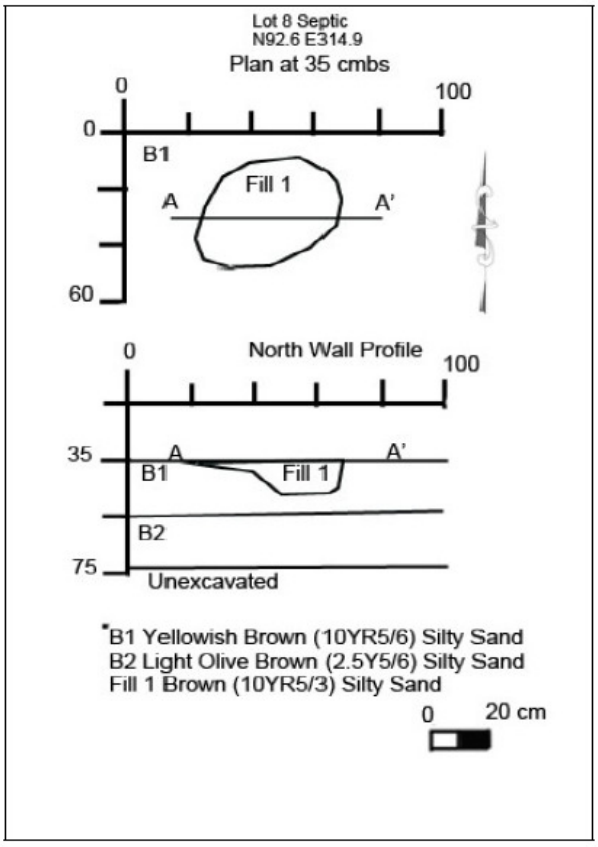


Figure 42. Natural anomalies from Lot 8 other anomalies.

prehistoric cultural anomalies. This may indicate that the areas that saw more intense Native occupation tended to produce favorable conditions for either cohabitation by natural vectors such as brush and rodents or that they became favored locations of settlement by these natural vectors after the people had abandoned the area. The natural vectors (rodent burrowing and brush and tree colonization) may have been attracted to the areas that were formerly occupied by people due to competitive vegetation clearance and refuse disposal that provided nutrient rich open land for them. Some of the cultural anomalies encountered appeared to have been impacted by rodent burrowing or by post-occupation establishment of plants. Most of the anomalies that were natural were by rodent and tree holes. Two of the anomalies appeared as depressions with looser dark soil that may have been artifacts of the machine stripping. Thirteen of the 22 natural anomalies were found to contain no cultural material. The remaining anomalies were found to contain little cultural material. Archaeologists speculated that the material that was present arrived in the anomaly as a result of household cleaning practices and a potential tendency to deposit household refuse into any convenient depression near the house. Some of the depositions into rodent burrows may have even been a deliberate attempt to block the burrows or drive the rodents away from the home site and fields.

Anomaly Analysis by Lot

Lot 1

Archaeologists identified 32 anomalies (not including post molds), consisting of 23 shallow basins, three medium-sized medium depth pits, one large size deep pit, four natural anomalies, and one historic anomaly in the Lot 1 impact area L1H, L1HN, L1S, L1SN, L1 Feature 2) (Table 169). Most

Table 169. Anomalies from Lot 1

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L1	4	7	14	2		3		1			1	32

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

of the prehistoric features were in two areas, between N309 to N317 and E169 to E177 and between N297 to N302 and E184 to E188. One additional anomaly, a large size shallow basin (N296.6 E180) was to the south of the other concentrations, and one small size shallow basin (N294.75 E193.2) and one possible large size deep pit (Feature 2), both located to the east of the house forms. Archaeologists interpreted the two concentrations of anomalies as the locations of Native house forms.

Outlying prehistoric or possible prehistoric anomalies consisted of one large size shallow basin (N296.6 E180) and one large size deep possible pit (Feature 2). The shallow basin contained debitage but was in an area distant from the other anomaly concentrations. It may be natural and not cultural. Feature 2 was previously tested during the University of Massachusetts Intensive Survey and Site Examination. The shape of the anomaly in profile appeared more similar to a tree hole but it did contain cultural material. It may be a prehistoric tree hole that Native people filled with prehistoric cultural refuse in the Late Woodland period or it may be a Native storage pit that was partially naturally filled in the lower portion and partially filled with cultural refuse in the upper layers. It's location separate from the other features is consistent with the location of storage pits at Native homesites. Excavation identified one small size shallow basin anomaly (N294.75 E193.2) in the Lot 1 Septic impact area. Archaeologists interpreted this anomaly as a probable natural anomaly and it contained no cultural material. It was to the immediate south of three concentrations of artifacts and associated with two Small Stemmed and two Squibnocket Triangle points as well as two bifaces, a uniface, a pestle, and two projectile point tips and midsections. Analysis determined that a small group of people created the concentrations over a short period during the Late Archaic Period.

Excavation identified five additional anomalies near the center of the impact area. Excavation proved that most of these were the result of the growth of a large tree in this area of the site. One anomaly (N310.7 E179.7) was a medium size shallow basin with debitage and excavation determined it to possibly be of prehistoric origin. It is to the immediate east of House Form 1.

Lot 2 House

Excavation identified 27 anomalies (not including post molds), consisting of six shallow basins, 17 medium-sized medium depth pits, two large size medium depth pits, one large size deep pit, two natural anomalies, and two midden or hearth scatters, in the Lot 2 house and septic impact areas (Table 170). Archaeologists found most (85% n=52) in the eastern third of the Lot 2 House impact area

Table 170. Anomalies from Lot 2

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L2H		1	1	2		18	1	1		2		26
L2S							1					1

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

between N267 to NN273 and East 212 to E219. They interpreted that most of these anomalies originally existed beneath house forms whose post molds were subsequently erased due to deeper plowing in this lot. Evidence of post molds associated with house forms was only found in the southeast corner of this lot where the slope of the land preserved archaeological evidence at a deeper level than to the north. Excavation encountered only one anomaly (N292.2 E214.5) in the Lot 2 Septic impact area. Archaeologists interpreted this as a large-size medium depth pit that may have originally been a deeper storage pit truncated by historic plowing. A concentration of lithic debitage was immediately around this anomaly and probably originally came from the anomaly itself, having been scattered by the plow. Analysis interpreted this anomaly as a storage pit located away from the main habitation area to the southeast.

Medium size medium depth pits made up most of the non-post mold anomalies identified in this impact area. They occurred alone in only one instance (N272.4 E210.3) and were most often in joined pairs or in close-proximity to other similar pits. Four of the pits contained no cultural material and the remaining 13 pits contained a mixture of debitage, pottery, fire-cracked rock, charcoal and rarely, calcined bone. It appears that Native people used them for the disposal of hearth and domestic refuse . The concentration of these anomalies in the eastern third of the impact area is indicative of repeated reoccupation of the same location, possibly over the course of as little as a decade and probably by people who were aware of the location of previous occupation. The more isolated pits in the western third of the house impact area, approximately 12 meters away from the eastern concentration (a spacing similar to that found in Lot 1), may represent a separate occupation or series of occupations possibly by a different family group. The occurrence of one isolate pit (N274.4 E210.3) may represent another occupation as well. Similar pottery, possibly representing fragments of the same vessel, were found in both the eastern and western feature concentrations.

Archaeologists identified one large size deep pit (N270.5 E217.5) on the eastern edge of the concentration of the medium-size medium depth pits that may have been associated with the house forms identified in the southeast corner of the impact area. Testing identified two areas of midden or hearth refuse dumping (N269.5 E215.4 and N267.8 E214.8). Both consisted of strong brown colored soil, charcoal, pottery and calcined bone. Plowzone removal revealed the largest of these, N269.5 E215.4 surrounded by anomalies but did not overlap any anomalies in it center. This indicates either that people created it either before the surrounding anomalies or at the same time as them and that it was left relatively unimpacted by later occupations This may indicate that it represents a midden or even ceremonial feast deposit, essentially an area created and identified by the occupants of the site as something that they would not later impact. Many of the fragments of calcined bone and a fabric impressed and rocker stamp decorated vessel were found associated above, within, and around this anomaly.

Lot 4 House

Excavation identified 32 anomalies, consisting of 7 shallow basins, six medium-sized medium depth pits, one large size deep pit, two concentrations of fire-cracked rock, 14 natural anomalies, and one historic anomaly,in the Lot 4 house impact area (Table 171). Only one of the shallow

Table 171. Anomalies from Lot 4H

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L4H	4	7	6	5		7		1		2		32

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

basins (N142.65 E131.4) while three other basins were along the wall of the same house form. The basin within the house measured 56 x 50 cm and contained debitage, fire-cracked rock and calcined bone and appears to have a deeply set post mold in the bottom of it. The shallow basins along the edge of the house ranged in size from 35 to 80 cm long and contained nothing in one case, only debitage in the second case, and debitage, pottery, fire-cracked rock, and calcined bone in the third. People may have created them or they may have been the natural result of either the erection of the house post molds, erosion caused by rain running off the house, rodent activity or other natural or ancillary cultural agencies versus a purposeful creation. Archaeologists found three shallow basins located outside of House Form 1. One (N158.25 E127.5) was just west of the wall of the house and it may be the result of the same agencies that created the ones along the house wall. The remaining two basins were in the south third of the impact area and ranged from 40 to 80 cm in length with debitage and fire-cracked rock in one and debitage, pottery, fire-cracked rock, and charcoal in the other. The medium-size medium depth pits ranged in size from 42 x 35 cm to 95 x 35 cm with the average being 61 cm long and 46 cm wide. The longest medium size medium depth pit (N150.3 E131.75) may in fact have a shallow basin at one end, making the pit itself only 60 cm long as opposed to 95 cm. Three of these pits were in the east half of the impact area withing House Form 1 and three were scattered across the western half. Artifacts associated with these pits included debitage, pottery, charcoal, fire-cracked rock and calcined bone with no difference noted between pits inside versus those outside of House Form 1. Two of the pits within the house form (N156.65 E129.6 and N148.35 E131.55) may be contemporaneous and be associated with House Form 1 while anomaly N150.3 E131.75 may be associated with House Form 2 which overlapped House Form 1. One large size deep pit anomaly (N155.65 E130.15) was within House Form 1. It was near one of the medium-size medium depth pits and near a concentration of fire cracked rock. This anomaly measured 85 cm in diameter and extended 40 cm below the top of the B1 subsoil. It contained debitage, pottery, fire-cracked rock, and charcoal.

One of the two fire-cracked rock concentrations was within House Form 1 and one was just outside of the western wall of the house. The larger of the anomalies, N147.2 E130.2, was in the southern half of the house and measured 105 x 80 cm. The second fire-cracked rock concentration measured 40 x 40 cm and while no reddening of the subsoil was present for either anomaly, archaeologists believe they represent in situ hearths. Generated SURFER distributions of fire-cracked rock recovered from the plowzone showed two other fire-cracked rock concentrations within the northern end of House Form 1 at N150 E128 and in the western portion of the impact area at N144 E124.

Excavation and profiling identified 14 anomalies as probably being of natural origin. Two of these were probably the result of rodent activity, two were the result of tree roots, and the remaining ten were

shallow basins with irregularly shaped bottoms that appeared to have rootlets extending below them. These natural anomalies were within and outside of House Form 1. Seven of the natural anomalies contained no cultural material, one contained only debitage, two contained only charcoal, one contained debitage and fire-cracked rock, one contained debitage, fire-cracked rock, charcoal and historic material, one contained charcoal and calcined bone, and one contained pottery, fire-cracked rock, and charcoal. One other shallow basin contained only historic material.

Lot 4 Septic

Excavation identified 28 anomalies, consisting of five shallow basins, 14 medium-sized medium depth pits, one large size deep pit, two large size medium depth pits, four natural anomalies, two fire-cracked rock concentrations, in the Lot 4 Septic impact area (Table 172).

Table 172. Anomalies from L4S

	Natural	**LSB**	**MSB**	**SSB**	**SMP**	**MMP**	**LMP**	**LDP**	**MDP**	**FCR**	**Hist**	**Total**
L4S	2	2	3	2		14	2	1		2		28

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

Shallow basins measured between 30 and 100 cm in diameter with an average being 61 cm, and were between 5 and 15 cm deep below the B1 subsoil horizon. Most of the shallow basins were outside of House Form 1. One shallow basin contained no cultural material, three contained debitage, three contained pottery, two contained fire-cracked rock, and archaeologists recovered charcoal from two of them.

Most of the medium size medium depth pits occurred in pairs or sets of two to five in proximity to each other. Two concentrations of medium size pits occurred within House Form 1 in two separate in the western half of the house and five pits were in the eastern half. Archaeologists believe that these two concentrations represent two separate households within the house form. A line of two post molds separated the eastern and western halves of the house. Two medium size pits were in proximity to each other in House Form 2 and lay adjacent to a large size deep pit (N144.5 E145.5) that contained abundant fire cracked rock. This large pit may represent a storage pit reused as a hearth. One other medium size pit was to the east of these pits but, as it contained a post mold within its fill. It predates this house form.

One large fire-cracked rock concentration was present between the multiple pit occurrences in House Form 1 while another was to the north and situated between them. A third fire cracked rock concentration was on top of anomaly N144.5 E145.5 and appears to represent a hearth on top of a filled pit associated with the two medium size medium depth pits in this house.

Lot 5 House and Septic

Excavation identified 31 anomalies, consisting of eight shallow basins, eight medium-sized medium depth pits, one large size deep pit, one large size medium depth pit, 10 natural anomalies, and four fire cracked rock concentrations, in the Lot 5 House impact area. Testing and plowzone stripping failed to encounter any anomalies and recovered few artifacts from the Lot 5 Septic impact area. Anomalies were in the less rocky portions , the south and west sections, of the impact area (Table 173).

Table 173. Anomalies from Lot 5H

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L5H	5	3	7	2		8	1	1		4		31

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

Most of the shallow basins were in the center (n=4) and in the western third of the impact area (n=3). One other basin was in the eastern extreme of the impact area. The pits in the center were just north of a large pit (N131 E182). They ranged in size from 48 to 100 cm and extended 10-15 cm below the B1 subsoil horizon. Seven of the eight shallow basins contained debitage, three contained pottery, four had fire-cracked rock, five had charcoal, while excavation recovered calcined bone from three of them. Plowzone stripping found medium-sized medium depth pits scattered across the impact area with three occurring in the eastern third, two in the southern third, two in the northern third and one in the center. The pits in the eastern and northern thirds and in the center were in proximity to shallow basins while the pits in the southern third were south of a large pit and a fire-cracked rock concentration. The pits in the northern third were also close to a fire-cracked rock concentration. These pits ranged in size from 55 to 85 m in diameter and 20 to 35 cm in depth. Excavation recovered debitage and charcoal from seven, pottery from four, fire-cracked rock from three, and calcined bone from two of them.

Excavation encountered one large deep pit (N135 E186.5) in the north center portion of the impact area in an area of heavy rock concentration and possibly within a house form. This anomaly measured 120 x 105 cm and extended 45 cm below the top of the B1 horizon. Artifacts recovered consisted of debitage, pottery, fire-cracked rock, charcoal, calcined bone, maize, unburned bone, and an argillite scraper. One large medium depth pit (N131 E181) was near the center of the impact area, probably originally located within one of the overlapping house forms. This anomaly measured 113 x 85 cm and extended 15 cm below the top of the B1 horizon. Artifacts recovered included debitage, charcoal, calcined bone, and an Early Woodland Rossville point.

Excavation encountered four concentrations of fire-cracked rock. The two largest concentrations, N132 E173.75 measuring 120 cm in diameter and N136.3 E180.4 measuring 70 cm in diameter, were , respectively, in the southwest corner and in the norther third of the impact area. The smaller concentrations, N134.4 E182.2 measuring 40 cm in diameter and N130.6 E185.7 measuring 50 cm in diameter, were in the northern center and in the east center of the impact area. Two of these concentrations yielded debitage, one yielded pottery, and all yielded fire-cracked rock and charcoal. Archaeologists believe that these concentrations to have originally been within house forms.

Natural anomalies were either rodent runs or tree/ bush holes. Stripping identified a large rodent run complex as anomaly N136 E178, a feature that had been previously tested by UMass during their Site Examination. Archaeologists sectioned this anomaly in four locations. Other natural anomalies were found scattered across the impact area.

Lot 6 House

Excavation identified 23 anomalies, consisting of nine shallow basins, two medium-sized medium depth pits, one large size medium depth pit, one medium size deep pit, five large size deep pits, and five natural anomalies in the Lot 6 House impact area (Table 174). Shallow basins

Table 174. Anomalies from Lot 6H

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L6H	1	5	5	4		2	1	5	1			24

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

were in the center portion of the impact area where archaeologists encountered seven of them. These anomalies ranged in size from 30 to 135 cm in diameter with the average being 62 cm. Depths ranged from five to 15 cm below the B1 subsoil horizon with the average being nine cm. One of the anomalies contained no cultural material, eight contained debitage and charcoal, six had pottery, one had fire-cracked rock, two had calcined bone, four had unburned bone, and one had shell. Two of the basins were paired (N104.3 E236.9 and N103.7 E237) and two (N108.8a E235.7 a and N108.8b E235.7 b) were intercut into a preexisting large size deep pit. The concentration of the basins in an area away from habitation may indicate that their original purpose was either noxious (such as processing or smoking hides) or ceremonial. The common concurrence of double pit/ basins or irregularly shaped basins as well as the common presence of charcoal and subsequently debitage and refuse, may indicate that they originally were for hide smoking/ smudge pits. Refuse recovered from the large pits, charcoal and burned corn, may have been refuse cleaned out of these potential hide smoking pits, resulting from the use of corns cobs, roots and possibly leaves for smoking hides.

Archaeologists encountered two medium size medium depth pits and one large size medium depth pit in the Lot 6 House impact area. The medium size medium depth pits were along the southern edge of the impact area and contained debitage, pottery, charcoal and calcined bone in anomaly N100.6 E237.2 and debitage, fire-cracked rock, and a projectile point tip in the other anomaly (N103.7 E225.1). Neither of these pits appear to have been within a house form.

The large size medium depth pit (N111.2 E228.2) was next to the house form in the northwest corner of the impact area. This pit was 175 x 145 cm and extended 30 cm into the B1 subsoil and was within House Form 2. Anomaly N111.2 E228.2 yielded debitage, thin shell-tempered Late Woodland pottery, charcoal and calcined bone. The occupants of the site ultimately filled it with household domestic rubbish.

The five large size deep pits and one medium size deep pit were in the southeast to central portion of the impact area. These pits ranged in diameter from 78 to 160 cm and in depth from 40 to 80 cm below the top of the B1 horizon. These pits all contained debitage, pottery, charcoal, calcined bone and in some cases carbonized maize, fire-cracked rock, and unburned bone. The location of these pits within the presumed community layout was carefully selected. They were on the eastern edge of the terrace in and area that did not have significant preexisting occupation evidence. The subsoil in this area was an extremely well-drained silty sand and the location was slightly higher than the surrounding land making it well-drained. The presence of a grouping of storage pits in a specific location supports the hypothesis that this site represents the location of a larger sedentary community versus a transitory camp.

Lot 6 Septic

Archaeologists encountered six anomalies, five medium-sized medium depth pits, and one fire-cracked

rock concentration, in the Lot 6 Septic impact area (Table 175). The anomalies were

Table 175. Anomalies from Lot 6S

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L6S		1				4				1		6

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

along the edges of the impact area while a house form was in the center western portion of the impact area. One of the anomalies was within the house form while the remainder were to the east of it. The medium size pits ranged in size from 30 to 60 cm in diameter and contained debitage, pottery, charcoal, in two cases unburned bone, and in one anomaly a small triangle point. Anomaly N114.3 E248.2 was a tri-lobed anomaly that upon excavation was found to consist of two adjacent pits located within the house form. The remaining medium size pits were outside the house and no evidence of other house forms was present. This may mean that these pits were originally located outside of the extant house or that historic plowing obliterated traces of other houses. The fire-cracked rock concentration covered a large area east of the house form and may be associated with the house. The finding is supported by the fact that archaeologists found pieces of Native pottery similar to those found within the medium-size pits in the fire-cracked rock concentration.

Lot 7

Excavation encountered 43 anomalies, consisting of 15 shallow basins, 11 medium-sized medium depth pits, three large size medium depth pits, one large size deep pit, three fire cracked rock concentrations (one within a shallow basin and one within a medium size pit), 10 natural anomalies, and one historic anomaly, in the Lot 7 (house, house new, septic, septic new) impact area (Table 176). Archaeologists found shallow basins concentrated in the Lot 7 Septic New

Table 176. Anomalies from Lot 7

	Natural	LSB	MSB	SSB	SMP	MMP	LMP	LDP	MDP	FCR	Hist	Total
L7H	2	1	2	1		3		1				**10**
L7HN	2	2	1			5		1		2		**13**
L7SN	1	5	7	2		3	2					**20**
Total	**58**	**8**	**10**	**3**		**11**	**2**	**2**		**2**		**43**

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

and the western portion of the Lot 7 House impact areas. They ranged in size from 30 to 130 cm in diameter and five to 20 cm in depth. The three smallest shallow basins (30-35 cm in diameter) contained no cultural material. Nine of the others contained debitage, eight had fire-cracked rock, four had charcoal, three had pottery, two had calcined bone, one contained a quartz biface and one contained a Levanna point. The shallow basin appeared concentrated in and around the densest groupings of house forms

Medium sized pits were within house forms, although the locations within the houses appeared to varied with some appearing close to the centers of the houses (especially in the case of N68 E266.8) while others were closer to the edges. Anomaly N68 E266.8 consisted of a pit with a fire-cracked rock concentration in the upper portion of it. Included within this fire-cracked rock concentration was a

Late Archaic beveled cobble abrader that bore an incised with a running triangular motif and that someone burned. This deposit may represent a ceremonial deposit within the house. Medium size pits ranged in size from 40 to 68 cm in diameter and extended 15 to 35 cm below the top of the B1 subsoil. Two of the pits contained no cultural material, six contained debitage, three yielded pottery, a total of six had fire cracked rock (two contained only fire-cracked rock and in one case also charcoal), three had charcoal, two had calcined bone and one had unburned bone and shell.
Archaeologists identified three large size medium depth pits. These ranged in size from 85 to 130 cm in diameter and from 20 to 30 cm in depth below the top of the B1 horizon. The pits were in the same general areas as most of the shallow basins. All of the pits contained debitage, pottery, fire-cracked rock, charcoal, one yielded calcined bone, and one contained a small triangular point.

Excavation encountered one fire cracked rock concentration on the edge of a house form, possibly representing a hearth dump (N56.6 E277) while two other anomalies yielded abundant fire-cracked rock int heir upper fill. Both of these anomalies were within house forms.
Archaeologist found one historic post mold on the edge of the Lot 7 House impact area. The natural anomalies consisted of tree holes, rodent burrows and shallow basins with irregularly shaped bottoms and in most cases, no cultural material in their fill.

Lot 8

The lot 8 House, House New and Septic impact areas will all be discussed together. Because only one of the anomalies from the Lot 8 House impact areas was identified as to type, archaeologists did not excavate the remaining anomalies. As a result they will not be discussed. Archaeologists identified 18 anomalies, consisting of four shallow basins, seven medium-sized medium depth pits, one large size medium depth pit, one small medium depth pit, and four natural anomalies, in the Lot 8 House New and Septic impact areas (Table 177).

Table 177. Anomalies from Lot 8

	Natural	**LSB**	**MSB**	**SSB**	**SMP**	**MMP**	**LMP**	**LDP**	**MDP**	**FCR**	**Hist**	**Total**
L8HN	1	1	3	1	1	5						**12**
L8S	1			1		2	2					**6**
Total	**2**	**1**	**3**	**2**	**1**	**7**	**2**					**18**

LSB- Large Shallow Basin **MSB**- Medium Shallow Basin **SSB**- Small Shallow Basin **SMP**- Small Medium Pit **MMP**- Medium Medium Pit **LMP**- Large Medium Pit **LDP**- Large Deep Pit **MDP**- Medium Deep Pit b- Fire Cracked Rock Concentration **Hist**- Historic Feature

A large shallow basin (N67.8 E312.6), measuring 115 x 90 cm, was in the Lot 8 House western portion of the impact area. It was in close-proximity to two medium size pits. One medium size shallow basin (N63.9A E310A) was associated with two medium size pits in Lot 8 House New, basin N69.1 E308.6 was within two meters of a medium size pit, while another shallow basing was next to a large size medium depth pit and a medium size medium depth pit in the Lot 8 Septic impact area. The co-occurrence of the pits and the basin supports the idea that the basins are cultural and not natural.