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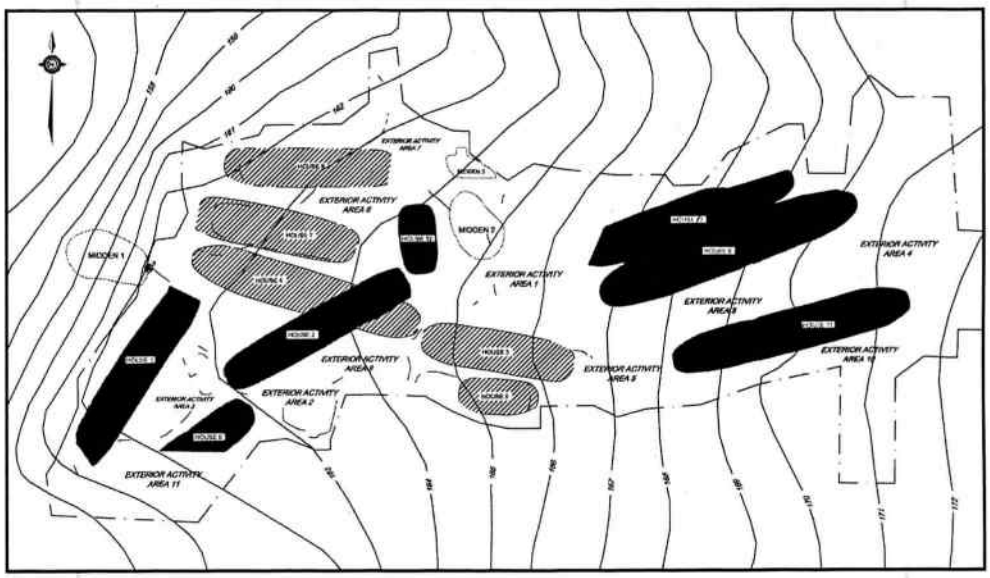

OAS news

Arch Notes

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... editor's note

Arch Notes is pleased to present a special issue devoted to the Grandview site, an early Late Iroquoian period site (ca. A.D. 1400–1450) situated in north Oshawa on Harmony Creek.

Thanks go out to Ron Williamson, Shaun Austin, and Stephen Cox Thomas for this great analytical addition to Ontario's archeological print record.

President's notes

It's just turned autumn as I write this and my thoughts turn to the OAS Annual Symposium. This year is our 30th, a cause for celebration in itself. It will be held in conjunction with the Ontario Provincial Police and the OPP Museum in Orillia. The theme including the very topical subject of "forensics" should prove to be an enlightening one. I look forward to seeing many of our colleagues in law enforcement in attendance as well as members who would like to know more about the crossover between archaeology and police work. Other topics include: the politics of cemeteries, development and archaeology, and the intersection between native policing and archaeology. If you haven't yet sent in your pre-registration, please feel free to come anyway and register at the door. I look forward to seeing you on October 24- 26. Check out our website for more information: www.ontarioarchaeology.on.ca.

As you will recall, the OAS sent a letter to the Minister of Culture at the end of June protesting the appalling destruction of the artifact collections at the University of Toronto, Scarborough, and outlining certain demands and protocols for ensuring a similar thing from happening again. To date, no reply or acknowledgement has been received from the Minister.

On a happier note, I wish to thank the Minister for the recent news that our annual provincial heritage organization operating grant has been awarded for 2003. The cheque is in the mail.

A few members have contacted me or the office in response to my previous column about the drop in membership. The Board decided at its quarterly meeting on September 13, 2003 that it would make membership issues a top priority. We will be initiating a membership demographic survey and telephone campaign to try to assess why members are not renewing and to get a handle on the current membership profile.

Speaking of members, the OAS will be awarding a new 50 Year membership pin to Helen Devereaux this year at the Symposium banquet. One or two other members are hovering on the brink of their 50 year anniversary. I want to thank Helen for her steadfast support over the last 50 years and wish her many, many more.

This is the time of year when you might like to consider stepping up to the plate and submitting your name for election to the Board of Directors of the OAS. At the present time no new names have been submitted for election. If there is no election, then the existing board will be returned by acclamation. Nominations close at the Annual Business Meeting, Sunday, October 26. If you would like to nominate someone or would like to submit your own name, please contact the Nominations Committee Chair c/o the OAS Office – oas@globalserve.net

Lastly, I want to express here the deepest and most sincere sympathy of the Board and members of the OAS to both Director, Dena Doroszenko, on the recent loss of her mother, and to Executive Director, Jo Holden, whose husband passed away suddenly on the same day. Our thoughts are with you.

As always,
Christine

From the OAS office

I would like to take this opportunity to thank the OAS Membership regarding the beautiful arrangement sent to my family on the recent passing of my husband.

Several members have sent their personal condolences, which have been warmly received. My daughter and I are currently taking everything a day at time, so your wishes and warm thoughts are greatly appreciated.

After an extended leave of absence from the office, I am just getting back up to speed, but I sincerely hope I can put my hand fairly quickly on whatever you are looking for.

Jo Holden, Executive Director

MARY McKEE'S GRAVE MARKED

On Sunday September 7, 2003, a stone marker was placed on the grave of Mary McKee. Mary, of the Anderdon band of Wyandots south of Windsor, granddaughter of Chief Quoqua of Michigan, was one of the last Ontario Wyandots to speak the language and recall ancient songs and traditions.

Her contributions to the work of C. Marius Barbeau, in singing and retelling songs and stories, and in introducing him to her relatives among the Wyandotte Tribe of Oklahoma, are to be found in his major works "Huron and Wyandot Mythology" 1915, "Huron-Wyandot Traditional Narratives in Translations and Native Texts" 1960. More recently, Mary was the subject of a chapter in John Steckley's book "Beyond Their Years, Five Native Women's Stories" (1999), and an article by Sallie Cotter Andrews in "The Turtle Speaks", newsletter of the Wyandotte Tribe of Oklahoma (March 2003).

From her death in 1922 at the age of 84, Mary's grave in the Walker family cemetery, near Wyandotte, Oklahoma, had been unmarked. Those attending the ceremony of laying the stone included Don Burnside, Richard Smith, Jim Bland (2nd Chief) and Sallie Cotter Andrews (Tribal Historian) of the Wyandotte Tribe of Oklahoma, and Chief Janith English of the Wyandot Nation of Kansas.

(Thanks to Sallie Cotter Andrews and Charles Garrad)

The Archaeology of the Grandview Site

~ a fifteenth century iroquoian community on the north shore of lake ontario

by Ronald F. Williamson[1], Shaun J. Austin[1] and Stephen Cox Thomas[2]

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Introduction

In the summer and fall of 1993, Archaeological Services Inc. conducted the almost complete salvage excavation of the Grandview site (AlGr-59), an early Late Iroquoian village situated on Part Lot 3, Concession 3, City of Oshawa, Regional Municipality of Durham (Figure 1).

The final report on the site from which this article is drawn is entitled *Building Harmony: The Archaeology of the Grandview Site* and is on file at Archaeological Services Inc. and the Ministry of Culture. It should be noted, however, that there are several re-interpretations of the settlement patterns herein. Also, a more detailed analysis of the environmental context of the site can be found in Robert MacDonald's 2002 PhD dissertation (McGill University) entitled Late Woodland Settlement Trends in South-Central Ontario: A Study of Ecological Relationships and Culture Change.

The site was situated southwest of the community of Taunton, in close proximity to the interface of the South Slope and the Iroquois Plain physiographic regions. Of particular interest is the presence of the prominent glacial Lake Iroquois shoreline (ca 12,000 B.P.), along the southern edge of the site area, which constitutes a vantage point from which to view the lake and surrounding territory for some distance. This portion of the South Slope is characterized by the presence of long, thin drumlins pointing directly up the slope. The loam soils of the area have been formed on a highly calcareous till and are somewhat more sandy due to the Iroquois strand line on the extreme southern edge of the study area (Chapman and Putnam 1973:287-289). The western boundary of the site was defined by the sharp break-in-slope which leads down to Harmony Creek. The northern boundary was demarcated by a shallow swale. The grade of the site sloped gently downward from east to west.

MacDonald (2002:282-286) has pointed to the Second Marsh at the mouth of Harmony Creek (about 7.5 km downstream) as a particularly important resource area for the site inhabitants. He also suggested, however, that the site was situated sufficiently north of the Harmony estuary so as to provide for easy access to the rich resources associated with Lake Scugog. The route to this region would have been along one branch of the Scugog Carrying Place, a less

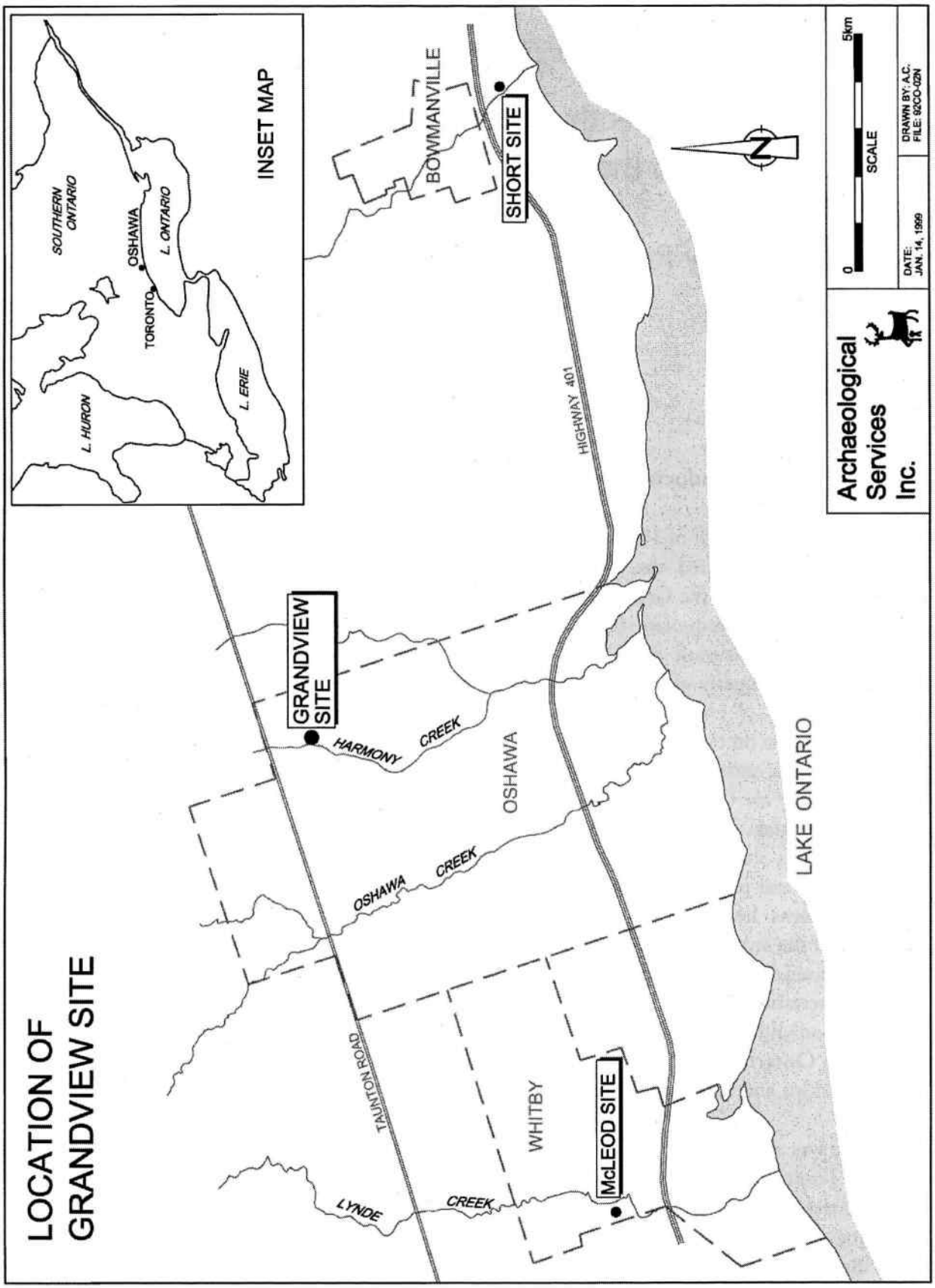

Figure 1: Location of Grandview Site (AlGr-59)

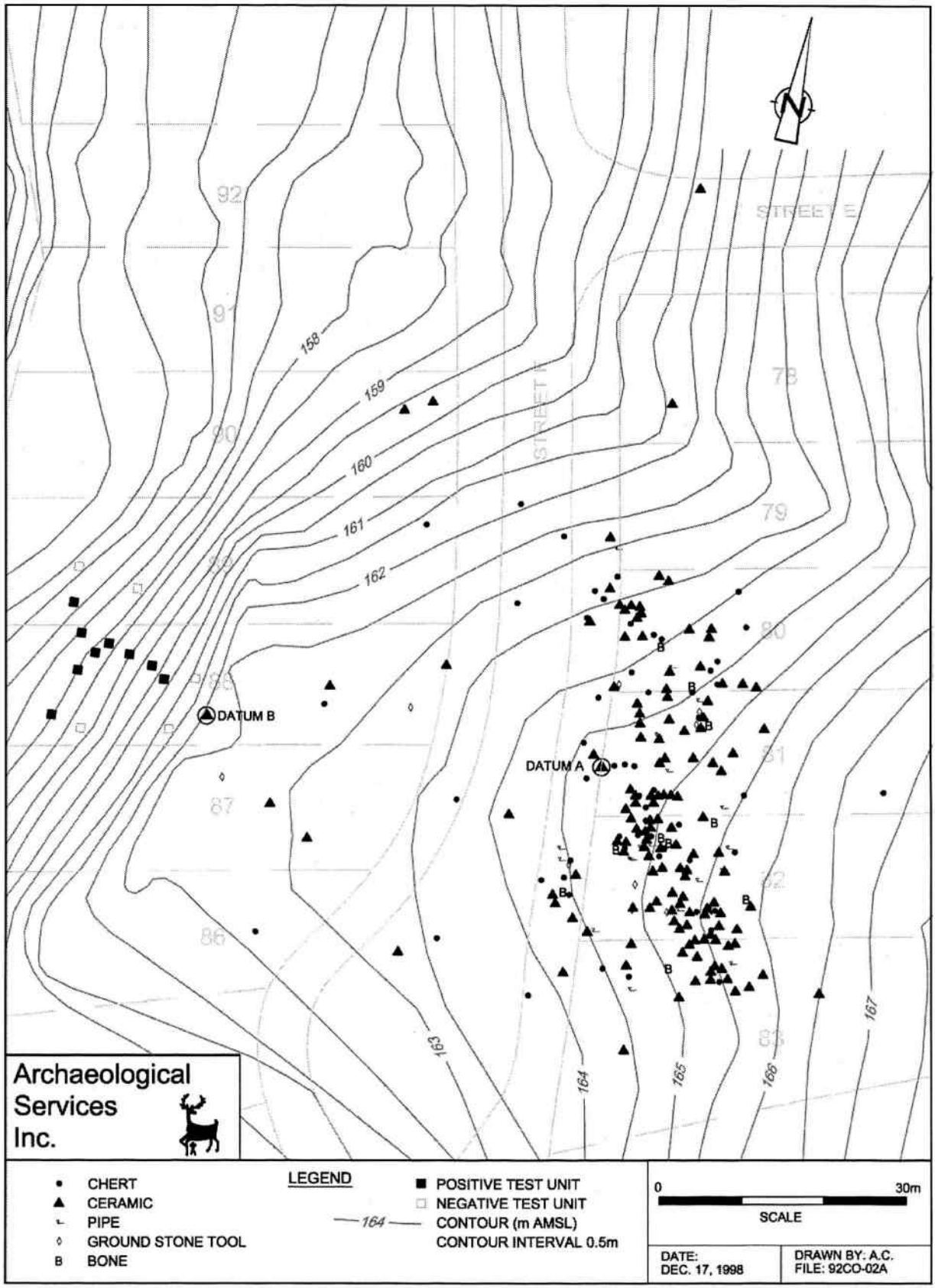

Figure 2 SURFACE ARTIFACT DISTRIBUTION AT GRANDVIEW SITE (AlGr-59)

well-known but major north-south trail axis, linking the north shore of Lake Ontario with the upper Great Lakes (Frost 1973).

Settlement Patterns

A Stage 3 controlled surface collection (Figure 2), conducted in 50 cm intervals, was undertaken in order to delineate the extent of the site (Archaeological Services Inc. 1992). A series of hand-excavated test units was also placed on the slope west of the cultivated field revealing an undisturbed slope midden.

In the spring of 1993, the plough zone, comprising approximately 30 centimetres of topsoil, was removed by Gradall from within and beyond the surface scatter exposing a total village area of 0.78 hectares. This area was found to contain three middens, 12 longhouses and more than 500 subsurface cultural features, 131 of which were located within 12 open-air activity areas. Eight of the cultural features were semi-subterranean sweat lodges (MacDonald 1988, 1992; MacDonald and Williamson 2001). Several loci within these outdoor activity areas contained short linear alignments of posts indicative of fences or windbreaks (Figure 3).

On the basis of house placement and orientation, the Grandview site village layout might be divided into two or possibly three major building periods. The western or downslope section of the site represents the first of these periods. This is most clearly demonstrated by the overlapping of Houses 2 and 4, a close inspection of which indicates that House 2 was built before House 4. Phase 1 of the site occupation may therefore have included Houses 1, 2, 6 and perhaps, but not necessarily, House12. On the basis of similar house orientations and structural features, it would appear that Houses 3, 5, 7 and 8 along with House 4 were subsequently constructed, but perhaps not simultaneously. Houses 9, 10 and 11 were situated in the spatially isolated eastern or up-slope section of the site, the presence of which had not been indicated by the extent of the scatter of artifacts on the surface of the site. Given their parallel alignment, and the fact that Houses 9 and 10 either shared or reused a side wall, these structures were probably all erected at about the same time. The temporal relationship of Houses 9, 10 and 11 with respect to the other building phases is not clear, although certain aspects of the settlement pattern data and the ceramic vessel analysis suggest that these structures were occupied during and/or shortly after the tenancy of the Phase 2 structures.

There was likely no long hiatus between major building phases, and it is entirely possible that certain houses from each building phase were occupied at the same time. An analysis of the ceramics indicates that the span of village occupancy fell largely within the early Late Iroquoian period (ca AD 1400-1450), but may have begun in the late fourteenth century. Other mid- to late fifteenth century sites have revealed similarly complex settlement histories (Finlayson 1985; Damkjar 1990; Williamson and Robertson 1998; Robertson and Williamson 2003).

The following description of settlement patterns, drawn largely from the site report (Austin1999), provides revised general observations for the house structures and associated settlement features, paying particular attention to the relationships between houses and any unique features. Numerous gaps were apparent in the walls of the houses and it was not always possible to determine which ones may have been due to poor soil conditions and which ones represented entrances. Also, while some houses may have been open-ended, it is also possible that sections of end walls, especially in heavy or rocky soils, were constructed by the site inhabitants in a fashion that precludes

archaeological detection. Measurable attributes for each house are summarized in Table 1.

House 1

This structure, located parallel to the edge of the Harmony Creek ravine, possessed eastern and western side-walls, and centralized hearths, although neither end-wall was fully enclosed (Figure 4). The southeastern portion of the eastern side-wall split off into as many as seven walls, each of which had a slight inward curve, each perhaps representing an episode of structural expansion or contraction, although none of the alignments continued around to meet the slight taper of the opposite side-wall. The northeastern side-wall also had a slight inward curve, but the opposite end-wall turned sharply outward and continued downslope for approximately five metres. This alignment may represent a fence or windbreak associated with a pathway leading downslope to Midden 1 and Harmony Creek.

The west wall crosses the end of a semi-subterranean sweat lodge (Feature 252). The wall, therefore, post-dates the sweat lodge. This temporal relationship, together with the apparently unusual position of the sweat lodge relative to the house wall and the numerous southern end walls, suggest that House 1 was originally a somewhat narrower structure that was replaced by one or more longer, wider houses. The sweat lodge, therefore, appears to have been positioned in relation to the first, narrower house

Table 1. *Grandview Site House Variability*

House	Length (m)	Width (m)	Orientation (°E of N)	Area (m^2)	Wall Post Density (per m)	Wall Posts (≤10cm)	Wall Posts (>10cm)	Interior Posts (≤10cm)	Interior Posts (>10cm)
H1	33.8	7.6	34	236.1	west=5 east=5	363	9	1107	91
H2A	8.4	6.6	62	47.2	9	max=158	1	max=59	max=19
H2B	37.2	7.1	62	251.1	9	min=367	min=10	min=213	min=27
H3	27.6	7.3	99	187.8	north=8 south=8	414	18	712	62
H4	42.7	7.6	106	298.5	north=8 south=9	522	8	514	51
H5	14.3	6.4	92	83.5	north=9 south=10	218	5	213	48
H6	19+	6.8	52	129+	5	139	16	163	1
H7	29.5	7.8	102	211.7	9	427	4	731	46
H8	30.4	6.8	90	198.1	5	254	3	288	45
H9	48.8	8.6	69	377.9	north=9 south=5	max=352	max=3	173	53
H10	27+	7.2	69	193+	north=5 south=9	max=310	max=6	447	55
H11A	34.2	7.5	75	230.7	9	max=460	max=4	max=364	max=94
H11A	43.7	7.5	75	301.3	9	min=554	5	min=141	min=19
H12	12.5	6.6	174	76.0	5	85	1	48	8

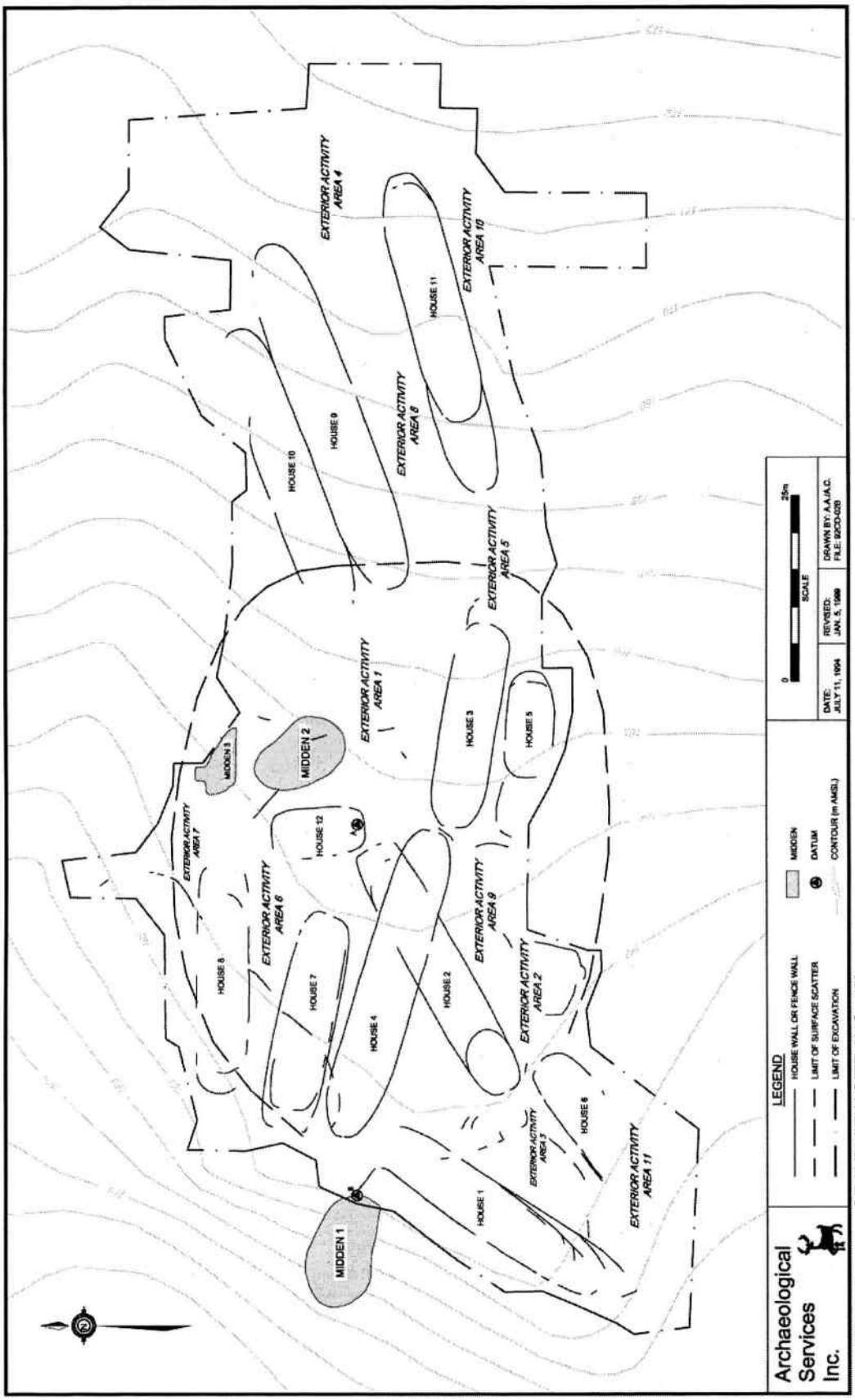

Figure 3 GRANDVIEW SITE (AlGr-59)

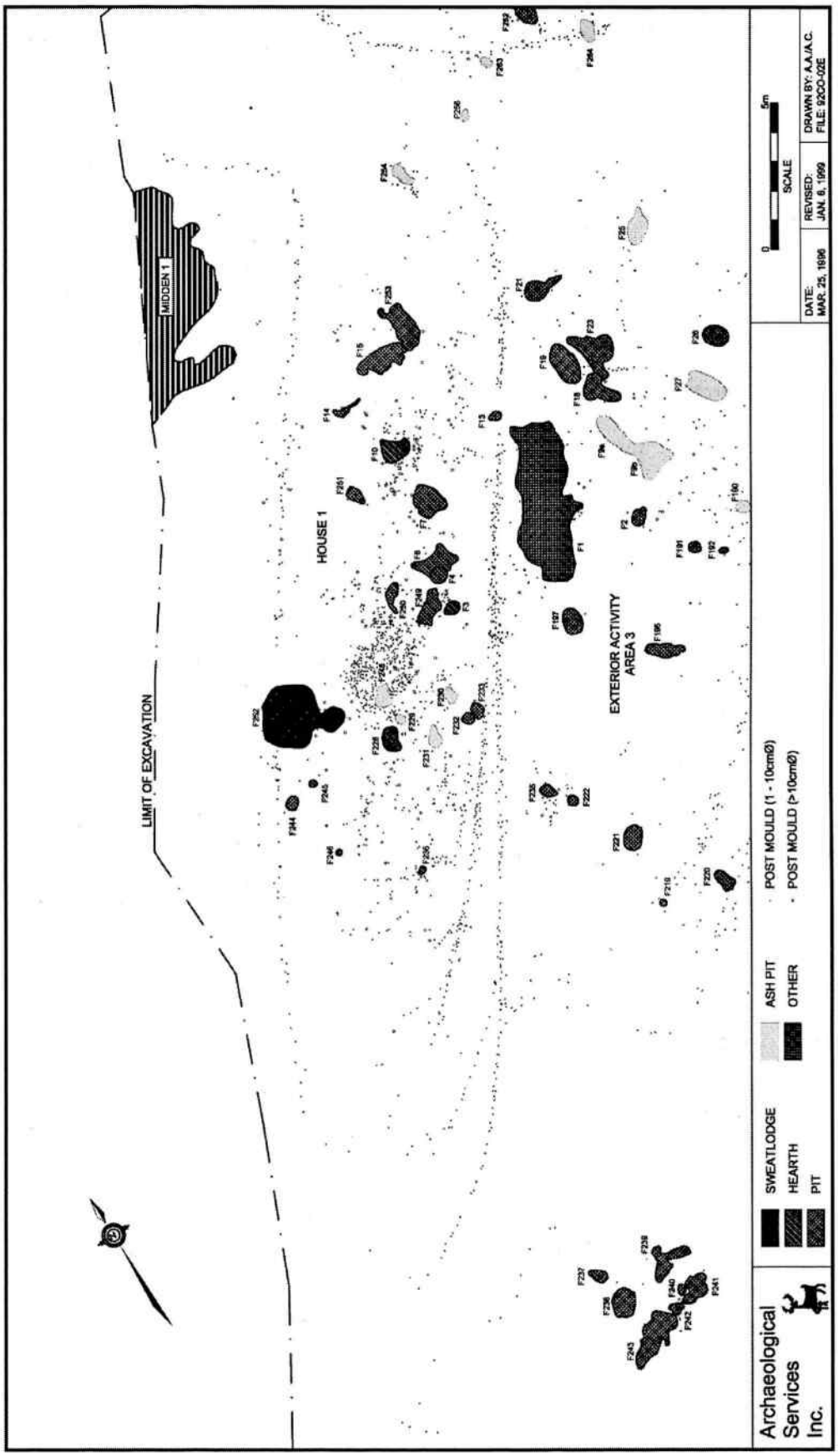

Figure 4 HOUSE 1

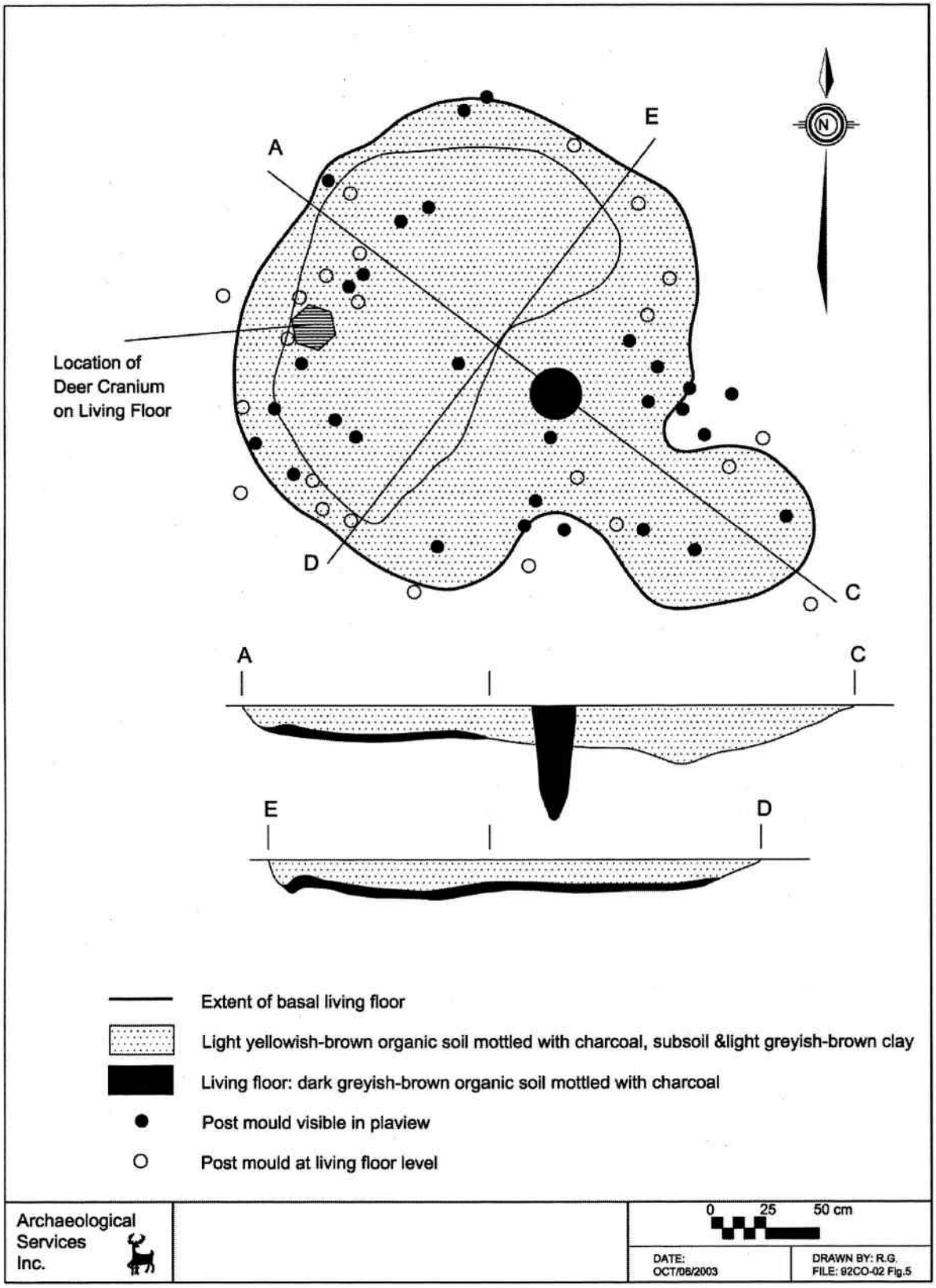

Figure 5: Feature 252 Plan and Profile

with its lobe projecting through the west wall. Of particular interest was the discovery of a cranium of a large mature white tailed deer buck resting on the living floor at the rear of the sweat lodge facing southwest. It appears to have been associated with two deer scapulae all of which were surrounded by posts and a number of stones (Figure 5). Stephen Cox Thomas (1999b:133-134), who undertook a detailed analysis of the bone, found that most of the delicate facial structures of the cranium had been broken, as well as the jugular and lesser processes on the ventral surface, leaving just the more solid bones of the calvarium.

While a major portion of a right deer scapula lay on top of the skull, its long axis oriented across the long axis of the skull with the spinous process down, the neck and glenoid of a left deer scapula lay to the right of the skull on top of a stone. Given a difference in the size of the glenoid cavities of the two specimens, it is uncertain that they were from the same deer.

The estimated season of death of the deer represented by the skull is late winter, given the configuration of the antler pedicles. They did not have the concave interior and sharp edges characteristic of the period immediately following shedding of the antlers but were instead round-edged and filled with new bone (Henke 1971:11). Given that the placement of the skull might have been integrally related to the long-term function of the lodge, however, the season of death of the deer and/or the time of the initial deposition of the skull is likely irrelevant. The skull may have been used to signal clan identity.

Examples of similar deposits on Middle Iroquoian sites include a deer skull in a possible sweat lodge at the Bennett site in Halton (Wright and Anderson 1969:22), a great horned owl wing at the Myers Road site in Cambridge (Ramsden et al 1998:73) and a juvenile black bear cranium, also placed at the rear of a sweat lodge at the Wiacek site, in Barrie (Robertson et al. 1995:49-50). Other artifacts recovered from the living floor of Feature 252 include faunal elements, a bone bodkin, ceramic vessel and pipe sherds, and ground stone fragments.

Other feature activity within House 1 was located within a five-metre wide central section of the house(s) and most interior posts were recorded in the vicinity of a large centralized post mould cluster. In this and similar clusters of posts in other houses, many of the posts seem to have been placed in multiple clustered annular patterns, consistent with their interpretation as temporarily erected above-ground sweat lodges (Tyyska 1972; Finlayson 1985:105-106; MacDonald 1988).

House 2

House 2 (Figure 6) began as an almost oval structure, the western end-wall of which was gently rounded. Although the eastern end of this first structure was weakly defined, it would appear to have been located approximately one metre east of Features 29 and 36.

This initial structure underwent a massive expansion to the east (House 2B). The presence of two end-walls at the eastern end of the structure indicates that the expansion was accomplished in two stages. The first stage brought the house out to a length of approximately 35 metres, at which point a rounded end-wall was constructed. The second building stage lengthened the structure by a few metres and a more rectangular end-wall was erected. The inner wall may then have served to define a storage area.

House 2 was overlapped by House 4. This is indicated both by the fact that wall posts from House 4 were visible crossing Feature 37 of House 2, and by the fact that a section of Feature 38 in House 4 overlapped Feature 37.

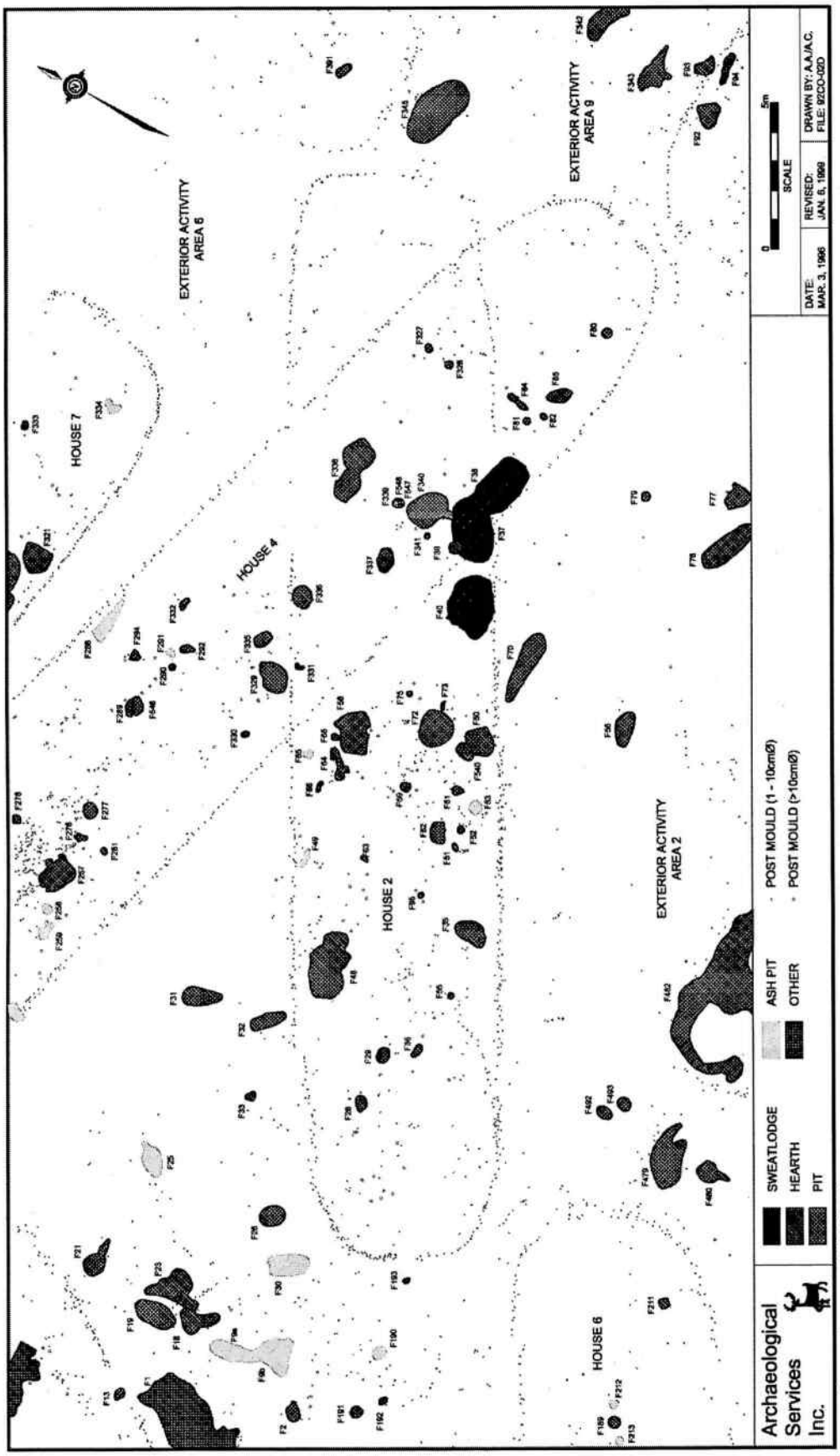

Figure 6 HOUSE 2

There were no central hearths or related post mould clusters in either building phase of House 2 with most feature activity located in the central third of the house, extending out to the side-walls. This may indicate occupation primarily during the warmer months of the year.

Features 37 and 40, two semi-subterranean sweat lodges, had been constructed almost end-to-end along the southern wall of the house, several metres east of the mid-point of this wall. Both features were roughly rectangular in plan and although lacking the typical lobate entrances and key hole-shaped plans of such structures, both are characterized by post moulds visible only at the level of the living floors. Feature 37 contained a lens of carbonised organic fibres atop dark grey ash mottled with subsoil. The fibres appeared to represent separate strands of a grass-like material that had been single knotted in a number of locations. The strands all seemed to be running in the same direction, but it is conceivable that the knots along them represented the interstices of warp and weft threads within a very loose weave. A similar woven item was recently found within a sweat lodge at the Middle Iroquoian Alexandra site in Scarborough.

Feature 38, identified as a semi-subterranean sweat lodge, extends from House 4 into the overlapping area, and clearly was constructed in House 4.

House 3

The western end of House 3 was located only approximately 1.3 metres from the eastern end of House 4 (Figure 7). A single row of post moulds, approximately four metres in length, indicated the presence of a fence in the space between the slightly offset entrances of the two houses. This suggests that Houses 3 and 4 were occupied, if not constructed, at the same time. A windbreak projected approximately 4.2 metres from the northeastern end-wall of the house. South of this windbreak were a number of scattered post moulds and a single refuse pit. The southeastern corner of the eastern end-wall, including the entrance, were only visible within a large refuse pit (Feature 140).

Construction of the northern side-wall and a portion of the eastern end-wall involved the use of a wall trench, the only evidence for the use of this architectural technique at the site. Wall trenching has been documented at a number of Middle Iroquoian communities in south-central Ontario (Kapches 1980). It involved digging a slit trench prior to placing wall poles into the ground at the bottom of the trench, which was then backfilled with soil, charcoal, ash and artifactual debris. The shallow nature of most wall trenches means that, like the fire-reddened soils of hearths, they may be disturbed or lost altogether as a result of deep ploughing.

Feature 97, situated along the southern perimeter of the central corridor, contained notable quantities of carbonised plant material including maize, cucurbit, greens/grains and particularly bramble, suggesting the feature's use for processing plant foods.

House 4

House 4 overlapped and thus postdated House 2 (Figure 8). Crossing the northwestern corner of the building was a line of post moulds indicating the presence of an exterior fence that was unlikely to have been contemporaneous with the occupation of the house. The fence also crossed Houses 7 and 8, situated immediately north of House 4 (see also Figure 10).

There were no indications that the house had ever been expanded or contracted. Both ends of the house were largely devoid of features, perhaps indicating their use as storage areas. It is difficult to attribute features to House 2 or 4 in the eastern half of the house. There was only one west-central cluster of features and post moulds.

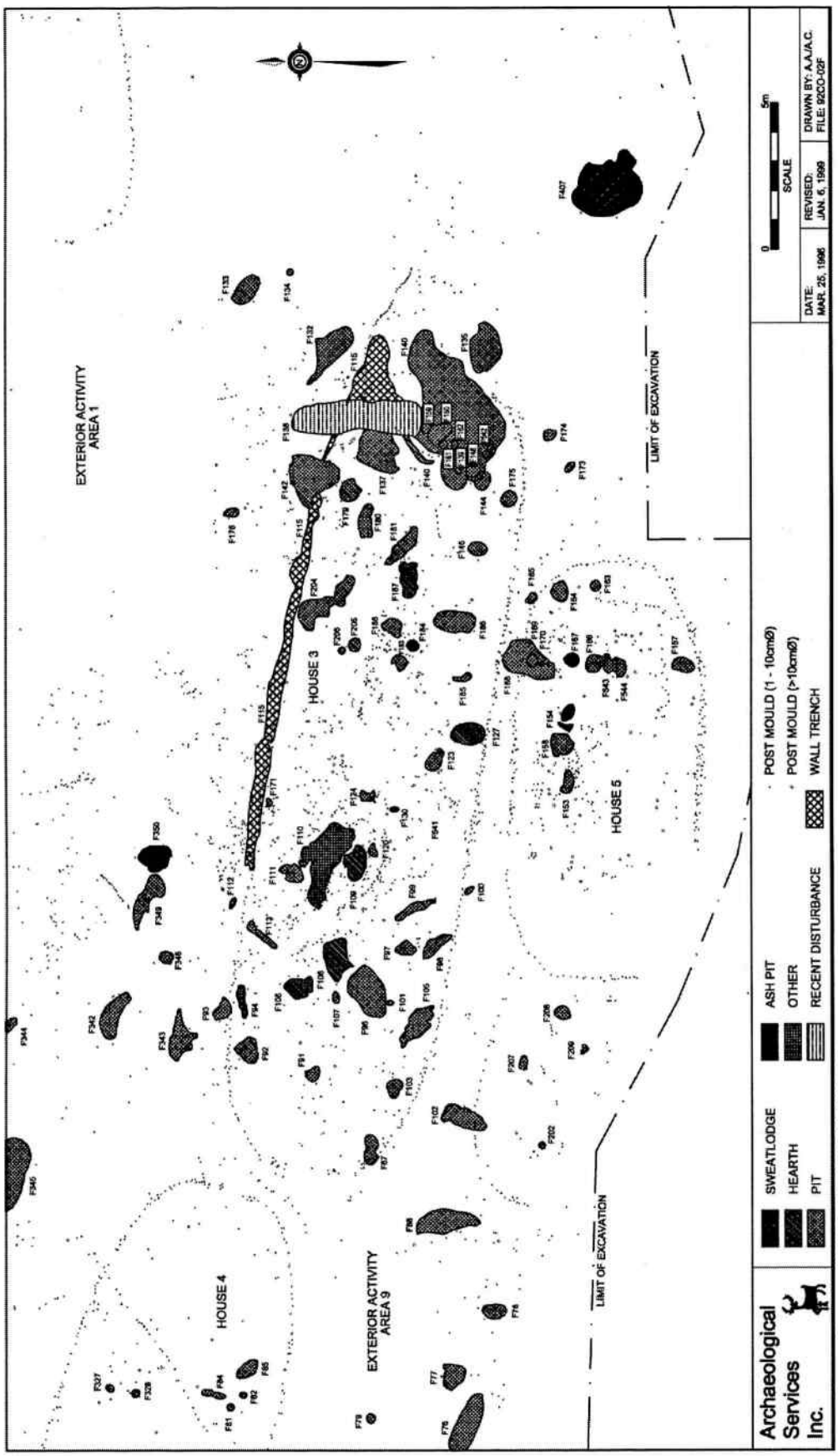

Figure 7 HOUSE 3 AND HOUSE 5

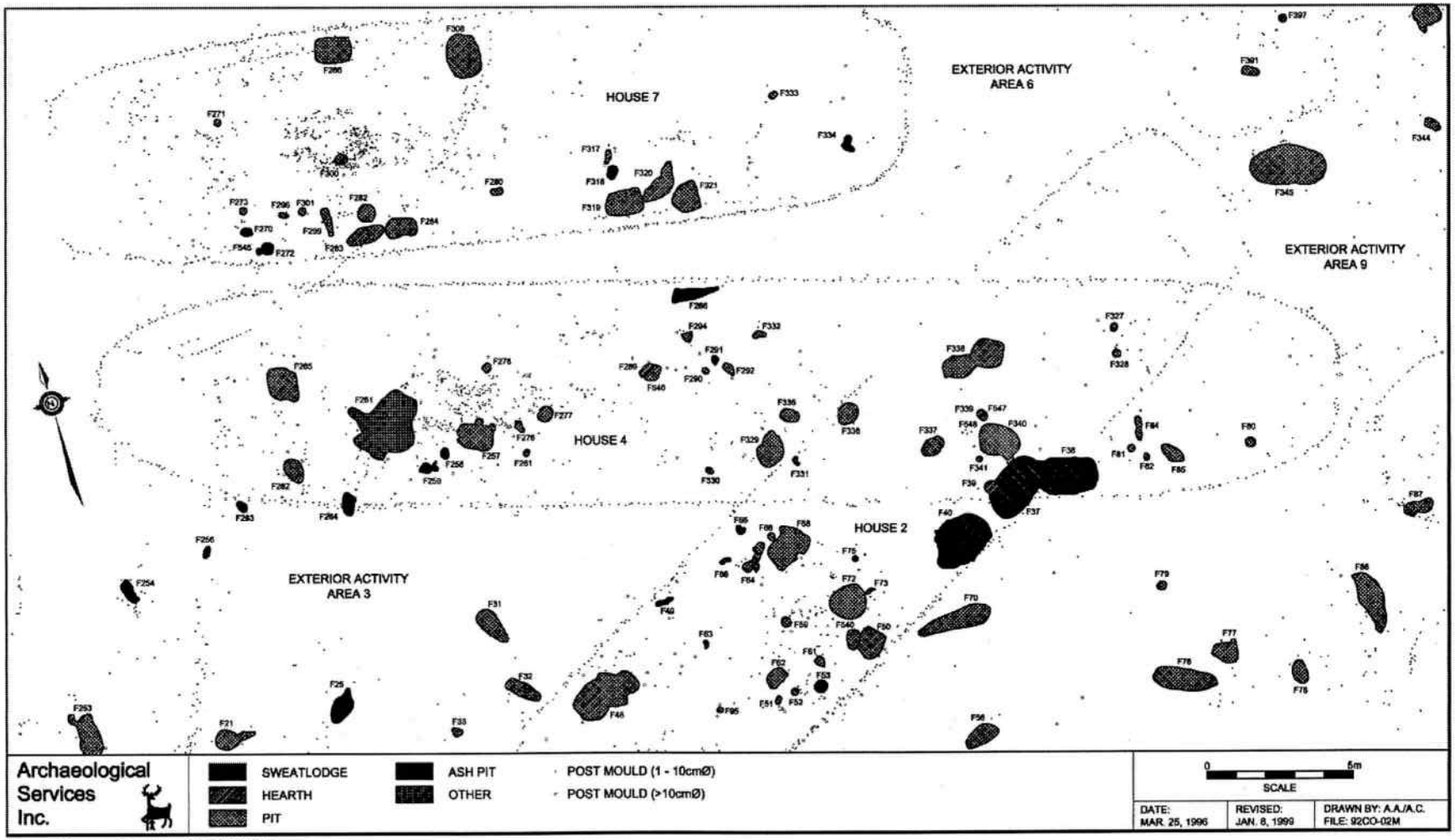

Figure 8 HOUSE 4

Feature 38 was a key-hole shaped feature situated on the interior side of the southern wall of House 4 approximately nine metres from the eastern end of the house. The long axis of Feature 38 was oriented parallel to the house wall. The well-defined ramp entrance was on the west, obliterating a portion of Feature 37 in House 2, indicating that House 4 was constructed after House 2.

House 5

House 5 was situated almost parallel to the southern wall of House 3 (see Figure 7). The northwestern, northeastern and southeastern end-walls of this house were all gently rounded. A post mould gap of approximately 4.8 metres at the southwest corner suggests that the structure may have been comparatively open-ended and perhaps only utilized on a seasonal basis. There are no indications that House 5 had ever been either expanded or contracted.

A length of curved fencing, possibly attached to the west end of the house, partially enclosed four refuse pits (Features 202, 207-209). Other features within the house appear to pre-date the walls of the house and, along with the attached compound, may be associated with Exterior Activity Area 9. This may be further evidence that the structure was utilized only on a seasonal basis.

The western end of House 5 was devoid of features and may have been devoted to storage while an internal wall 1.5 metres from the eastern end of the house, may also have formed a storage cubicle. It is also possible that the posts supported an end bunk.

House 6

The evidence for House 6 consisted of a robust section of rounded eastern end-wall and a portion of the northern and southern side-walls (Figure 9). The northern side-wall could only be traced for approximately 18 metres, while the southern side-wall seemed to disappear after only nine metres. It is possible that House 6 had been substantial in nature given the robustness of its eastern end and the fact that the clay and gravel on this part of the site may have hindered its delineation. On the other hand, there was relatively little feature activity within the house, suggesting that it may not have been used regularly as a residence.

Feature 224 was a semi-subterranean sweat lodge with its long axis oriented northwest-southeast. The ramp was oriented to the southwest. If the eastern wall of House 6 had continued to the southwest, the lodge would have been located alongside the interior wall.

A weakly defined, 7.5 metre-long exterior fence was situated parallel to the northern side wall of House 6 at a distance of approximately two metres.

House 7

House 7 was located between Houses 4 and 8 (Figure 10). There was a poorly defined interior framework of poles just inside the outer walls. This interior walling was most evident near the western end-wall and along the northern and southern side-walls. Because posts from the inner wall were not observed within or below Feature 286, it is inferred that the inner walling was erected prior to the outer walling. It is not known, however, whether the two walls were used simultaneously for some structural reason or whether they were sequentially used. While the eastern end of the inner (early) version of House 7 was more poorly defined than its west end, both ends of the outer (later) manifestation of the house had rounded corners and flat end walls.

A gently curving fence crossed this and adjacent House 4. It was evident to the east of Feature 308, extending across the structure and passing through Feature 283. This seems to have been a continuation of the exterior fence (or associat-

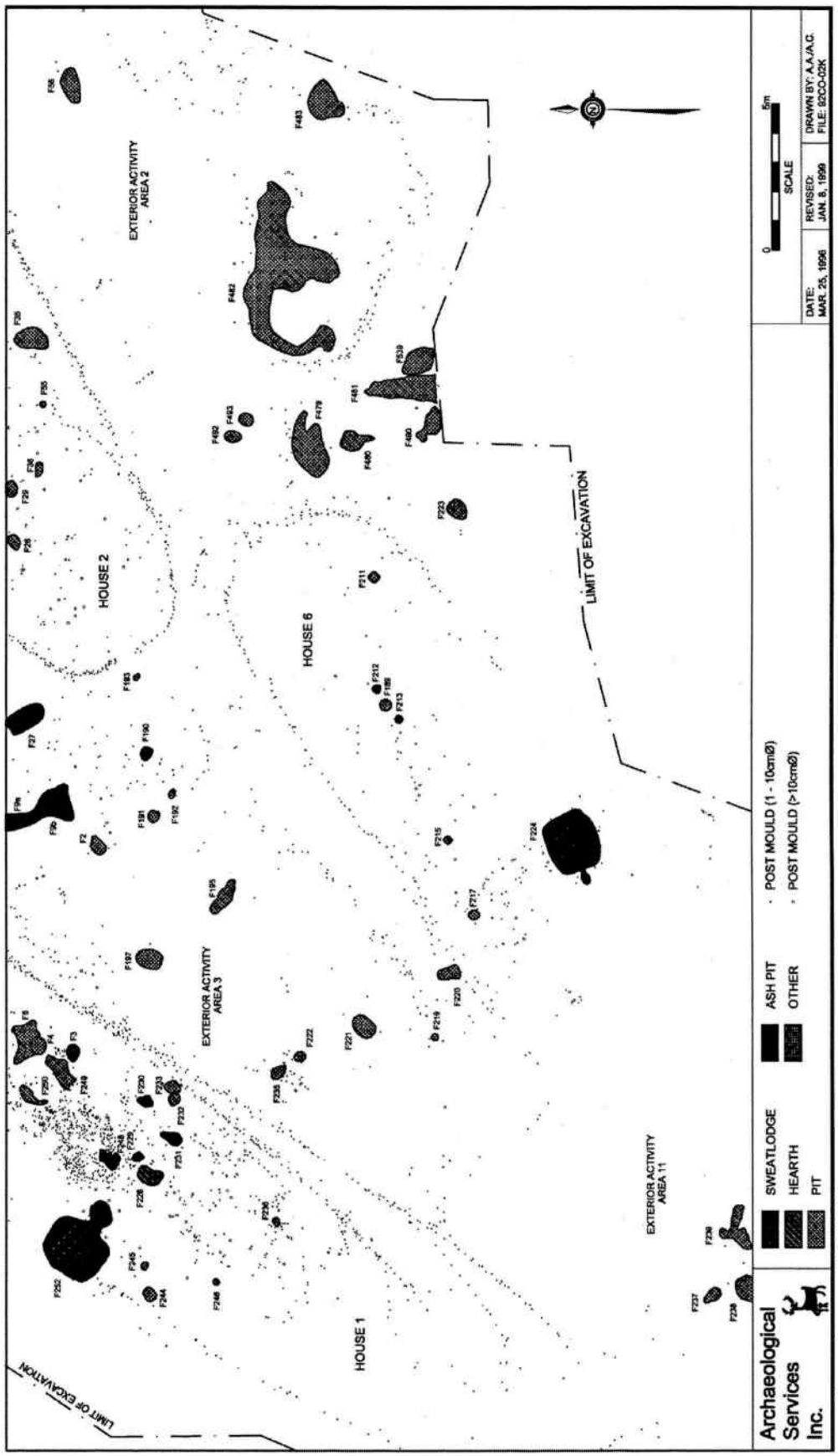

Figure 9 HOUSE 6

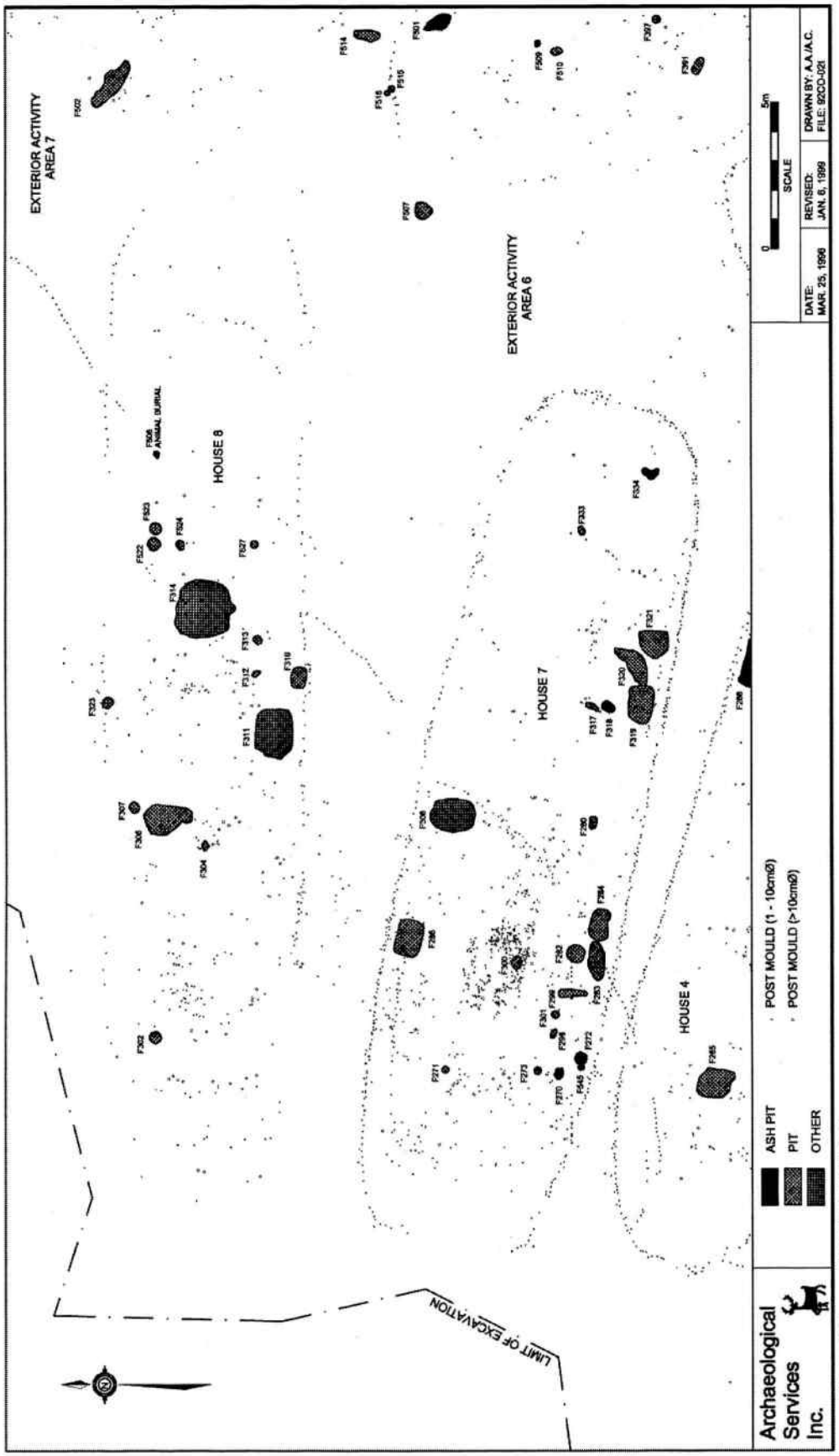

Figure 10 HOUSE 7 AND 8

ed short fences) that began west of Midden 3, passing through Houses 8 and 7, and terminating at the western end of House 4 (Figure 10). It would appear that posts from the inner wall of House 7 as well as posts from the exterior fence were recorded along the south edge of Feature 283 suggesting that both walls postdated the feature. In that much of the feature activity associated with House 7 was clustered in what would have been the south bunkline of the house, it is possible that some of these features are contemporary with the fence. On the other hand, it is also possible that the house lacked bunklines altogether and that most of the features were associated with the house.

House 8

Due to difficult soil conditions, the walls of House 8 were very poorly defined (Figure 10). Given the presence of two eastern end and multiple western end walls, it is possible that the house had been reconstructed on more than one occasion.

Sections of the exterior fence complex, discussed above, appear to cross the northern wall of the house but not the southern wall, suggesting it may not have actually crossed the house and may even have been coterminous with the occupation of the house. If this were true, Houses 4, 7 and 8, presumably occupied during the second major building phase of the site, would not necessarily have been constructed and used simultaneously. Indeed, House 8 may have been constructed before Houses 4 and 7 and used concomitantly with the fence, which itself may have been constructed during the first occupation of the site.

Most post moulds were found either in the centre of the house near Feature 314, a possible earth oven, or toward the western end of the house. The lack of central hearths may be due to the differential preservation of this ephemeral feature type, or it may indicate a warm season occupation.

Also, the almost complete skeleton of a single red fox was found in Feature 506, which was situated in the central corridor of the eastern portion of the house. These remains were subjected to a detailed analysis by Stephen Cox Thomas (1999b:142-145). They were totally disarticulated with the exception of the left tibia and fibula. While most of the skeleton was present, the nearly total absence of paw elements suggested that they had been removed prior to processing of the carcass. Indeed, although few cut marks were noted on the skeletal elements, cuts on the medial and lateral sides of the styloid process of the right ulna, and on the distal edge of the medial maleolus of the left tibia, probably relate to separation of the paws from the lower limbs. Moreover, skinning cuts on the maxilla and the disarticulation cuts in the wrist and ankle areas seem to be consistent with pelt removal. A cut in the cervical region, indicating meat removal or possibly reduction of the carcass into smaller units, together with the disarticulated condition of the bones, suggest that the carcass was processed thoroughly. The occurrence of the major portion of a carcass in a tight cluster in a pit feature is unusual for the Grandview site, and indicates that the remains of the fox were not disposed of in a routine manner.

While both articulated and disarticulated dog burials have been found on Iroquoian sites, few fox interments have been documented. An entire carcass of a gray fox was also found in a long house feature at the fifteenth century Iroquoian Over site, situated in Richmond Hill (Thomas 1994). The almost complete calcination of the recovered elements and the absence of unburned bone strongly suggested that burning of the remains had occurred more thoroughly than would have been the case with simple disposal of organic refuse in a hearth. The feature contained no other refuse and the disarticulation of the carcass prior to its intentional burning/cremation indicates that the carcass

was in the subsistence stream before the remains were cremated.

House 9
House 9 had gently rounded ends and a possibly shared northern wall with House 10, suggesting the contemporaneity of these two structures (Figure 11). While the density of wall posts along the southern wall was only five posts per metre, the common northern wall had a density of nine posts per metre indicating reinforcement. Co-existence of roof-lines of the two structures assumes a construction technique for both houses where additional poles were lashed to the tops of the wall posts to form roof rafters for the two houses (for a discussion of longhouse reconstruction see Kapches 1993, Wright 1995, Snow 1997, Williamson 2003). It is also possible, however, that the two houses were occupied sequentially with the second house reusing a section of wall from the first.

Empty house-end cubicles were clearly evident at both ends of House 9. All feature activity was limited to the central section of the house, extending outward to both side-walls. Some of these features, in particular Features 392-394, may have been associated with the adjacent Exterior Activity Area 8. The northern side-wall area contained, in addition to a number of refuse pits, one semi-subterranean sweat lodge (Feature 378).

House 10
While the side walls of House 10 were well-defined, neither end-wall was clear (Figure 11). Although this may have been due to poor soil conditions, partial ends were apparent in the southwestern and extreme southeastern corners. The eastern end of the northern wall also exhibited a clear inward turn before its abrupt termination well short of the southeastern end.

The features, with the exception of Feature 398, seem to have been placed so as to avoid the bunkline area within 1.2 metres of the side-walls.

House 11
House 11 underwent major reconstruction in the course of its use-life (Figure 12), likely involving substantial lengthening of the house. In addition to the overlapping walls of the two house versions, there was a seven-metre long section of the northwestern side-wall where the wall posts had been considerably reinforced.

Although feature use associated with the two phases are difficult to differentiate, it is apparent that both versions of House 11 maintained largely empty house end areas, as well as bunklines approximately one metre in width. Features 449 and perhaps 472 predate the house.

Diffuse clusters of posts just outside the eastern end of the house may have constituted windbreaks or drying racks.

House 12
House 12 was a small oval structure (Figure 13). Given its relatively open construction and the comparative absence of internal features, it most probably was a sheltered activity area or a temporary warm weather dwelling.

Exterior (House) Activity Areas
Exterior activity was amply reflected both by the numbers of post moulds and fences, and by the fact that 131 of the 541 features (25.9%) recorded during the 1993 excavations were outside of longhouse structures. Although it stands to reason that not all open areas were used to the same degree, it was possible to discern at least 12 exterior venues throughout the site by referring not only to the numbers of features and post moulds in a given area, but also to the positioning of contemporaneous longhouses and the resultant partitioning of available exterior spaces. Most of these areas are demarcated on the house plans and many were associated with fencing. In addition to the fences associat-

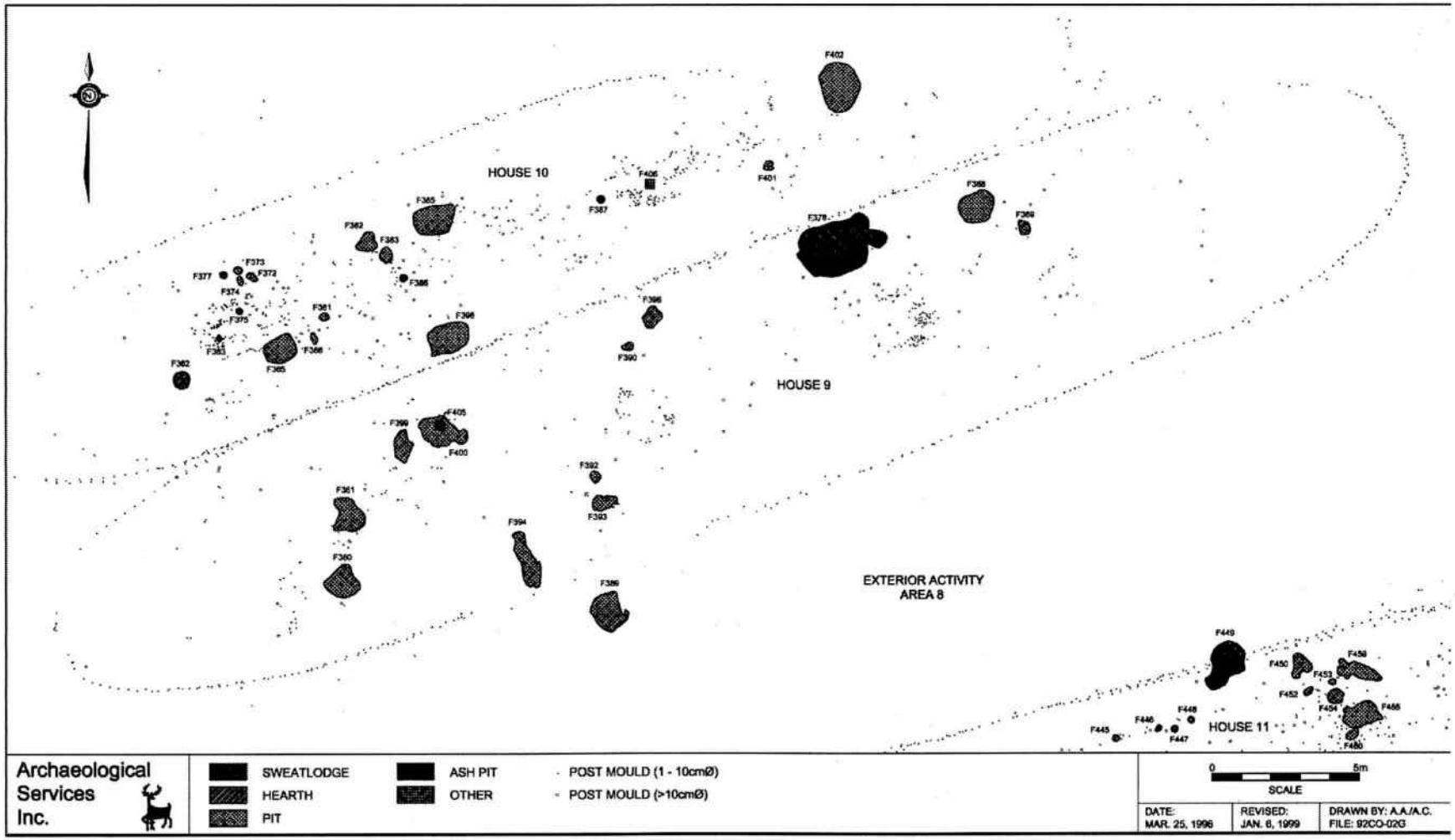

Figure 11 HOUSE 9

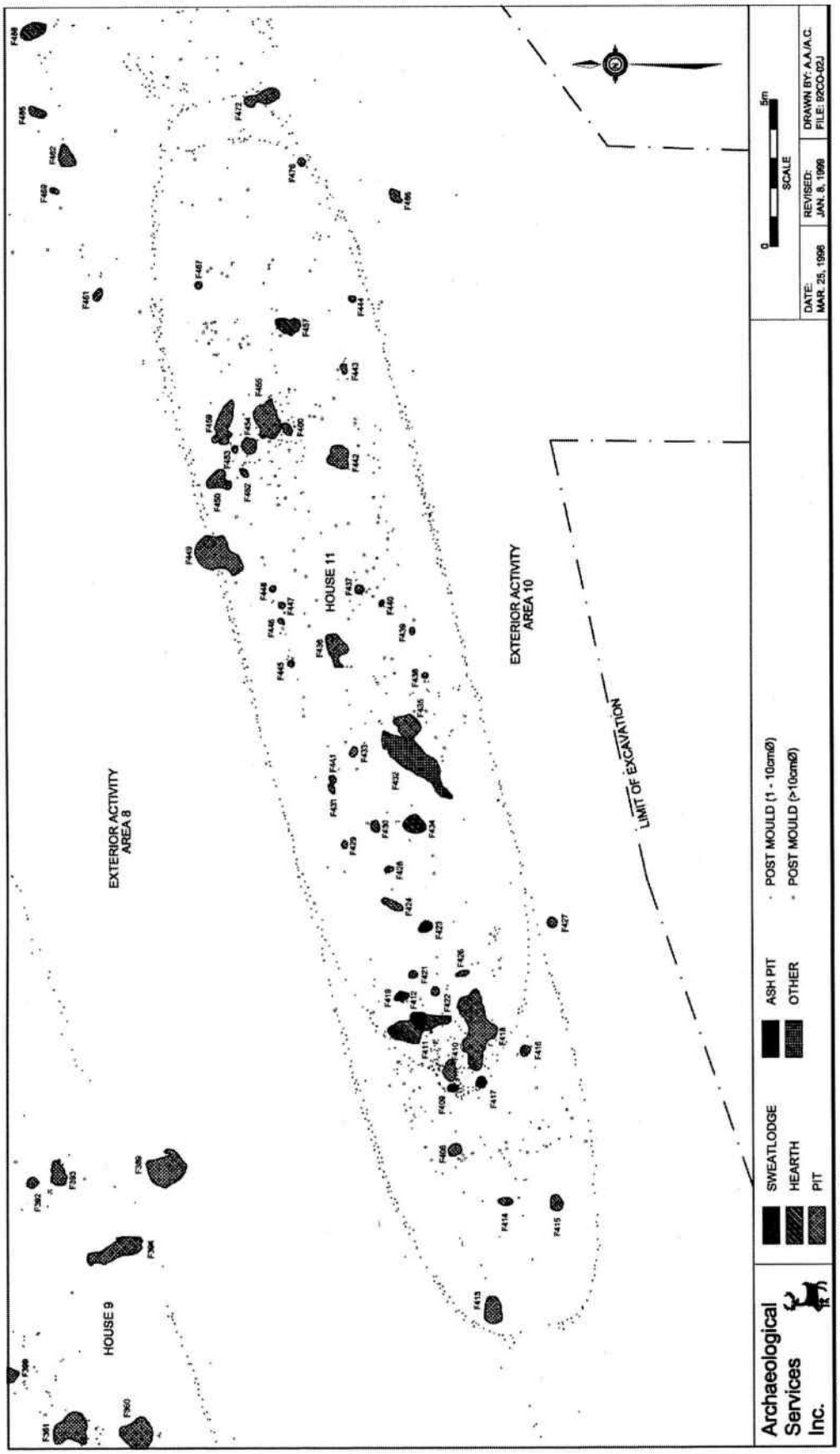

Figure 12 HOUSE 11

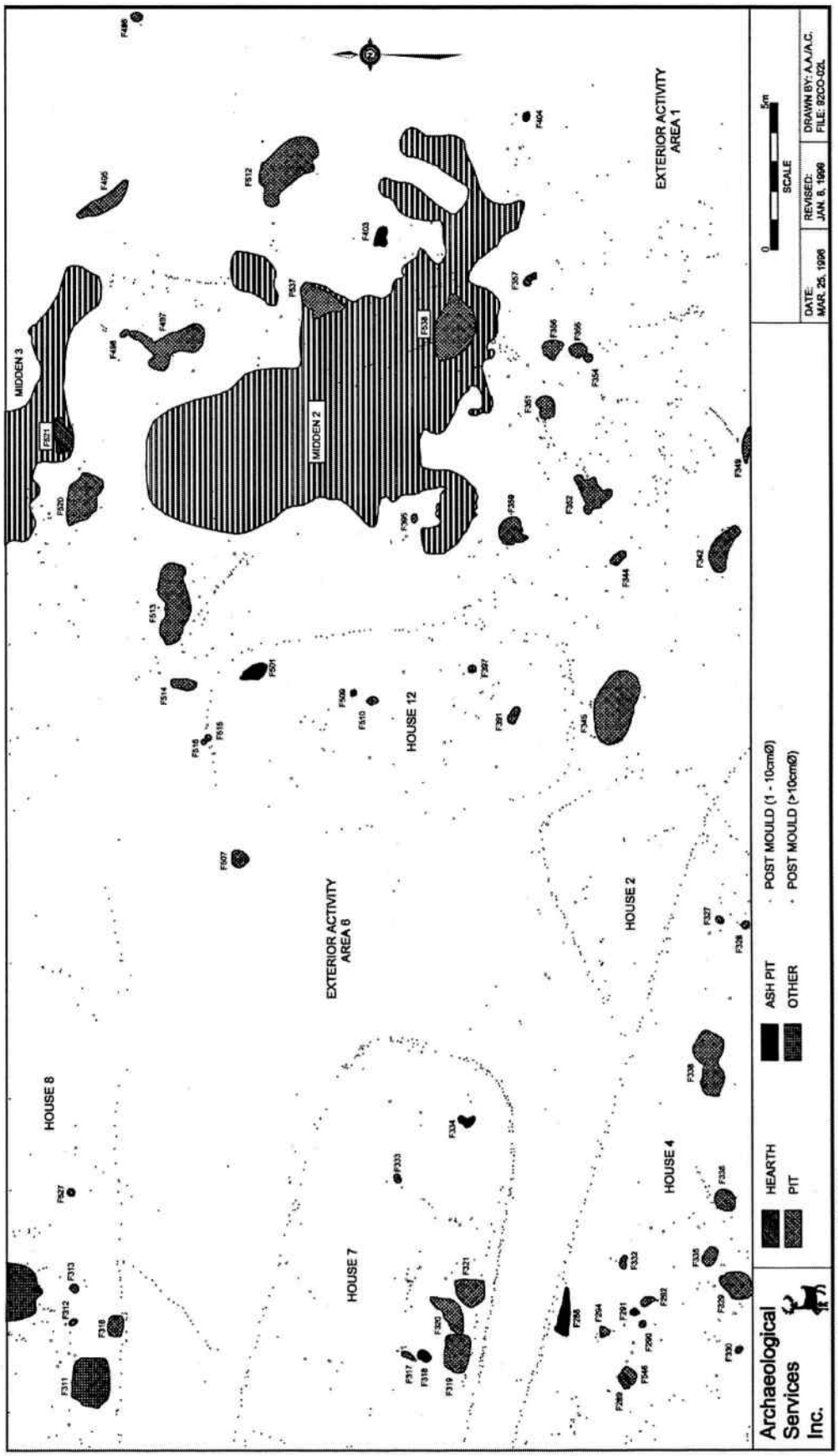

Figure 13 HOUSE 12

ed with the houses, fence sections were found in three major locations—eight in the vicinity of Midden 2, three in the open space between House 1 and Houses 6 and 2, and two major sections in the open space east of House 6 and south of House 2 (Figure 3; see also Figures 4 and 5-13).

A number of the exterior house features contained remarkable artifacts. Two pieces of native copper, for example, were recovered from features situated to the east of Houses 9 and 11, in Exterior Area 4. A four-sided, bipointed awl or gorge (Plate 11:a) was encountered in Feature 508, and a rolled bead (Plate 11:b) in Feature 489. The awl/gorge measures 66 mm in length, four millimetres in width and three millimetres in thickness. The bead measures 12.5 mm in length, and 7.9 mm in diameter.

Occasionally, exterior features on Iroquoian sites also contain extraordinary quantities of carbonised plant material (e.g., Monckton 1998). A soil sample from Feature 86 in the area immediately west of House 5 yielded significant quantities of bramble, elderberry and spikenard, the latter of which was frequently used as a medicinal plant, suggesting that the locale may have served as plant processing area.

Middens

Middens 2 and 3 were situated to the east of House 8 and House 12, to the north of House 3 and to the west of Houses 9 and 10. Some of the smaller refuse pits adjacent to Middens 2 and 3 may actually have been basal midden deposits, with the intervening areas lost to deep ploughing. Both middens had been used for a considerable length of time given depths of greater than 50 cm below surface.

Midden 1 was found along the slope to the west of Houses 1, 4 and 7. The excavation of test pits at regular intervals along this slope resulted in the identification of numerous artifacts within an area extending approximately 40 metres from north to south and 20 metres from east to west. Midden soils along the slope were appreciably darker and more organic than those on the flats above. The depth of the topsoil on the slope ranged from 30-50 centimetres. Midden 1 was not salvage excavated, but rather was carefully delineated so that the proposed housing development could avoid its disturbance. It remains today as protected green-space.

Artifact Analysis

Nearly 11,000 artifacts were recovered from the site (Table 2).

Ceramics

Ceramic Vessel Analysis

The ceramic vessel analysis was undertaken by Shaun Austin and Bruce Welsh (1999). A total of 2,787 pottery sherds forming portions of vessel rims, necks, shoulders and bodies, individually or in various combinations, constitutes the ceramic vessel assemblage. There are 398 rims and rim fragments, of which 299 are analysable, forming 244 vessels. Sixty-eight of these are juvenile vessels, one of which is a near complete pot.

Virtually all of the remaining 2,389 sherds consist of body sherds in varying condition. Some are partially exfoliated. Of those in which decoration can be identified, approximately 80 (3.4%) exhibit surface treatment in the form of ribbed paddling. All of the remaining body sherds are plain.

The rims of the 176 adult vessels were considered analysable when they exhibited both interior and exterior surfaces, the lip, and sufficient exterior collar-neck area to ascertain formal characteristics and decorative motifs and techniques. Of the 15 vessels with castellations, 14 are developed and one is of indeterminate form.

Table 2. *Grandview Artifact Assemblage*

Artifact Class	*Frequency*	*Percentage*
Ceramics	**3,056**	
Analyzable Rims (Following Vessel Reconstruction)	176	5.8
Unanalyzable Rim Fragments	99	3.2
Neck/Shoulder and Body Sherds	2,389	78.2
Juvenile Vessels	68	2.2
Pipes	319	10.4
Discoidal Clay Beads	5	0.2
Lithics	**968**	
Formal Flaked Stone Tools	11	1.1
Crude Bifaces	9	0.9
Utilized/Retouched Flakes	188	19.4
Unmodified Flakes and Shatter	661	68.3
Cores	44	4.5
Ground Stone Artifacts	55	5.7
Metal	**2**	
Native Copper Bead, Awl	2	100
Worked Bone	113	
Utilitarian Items	**59**	52.2
Non-Utilitarian Items	33	29.2
Miscellaneous Items and Manufacturing Debris	21	18.6
Faunal Remains	**6,699**	
Total	**10,838**	

Castellation shapes vary as follows: seven are pointed, six are angular, one is notched, and one is rounded. Five discoidal clay beads, ranging in diameter from 8-10 mm, were also recovered.

A summary of the descriptive statistics of individual attributes and metrics is presented in Table 3.

Four vessel types, which are common during the Middle Iroquoian period (ca. A.D. 1330-1400) comprise 23.3% of the Grandview assemblage. These include Middleport Criss-Cross, Middleport Oblique, Ontario Oblique and Ontario Horizontal. Many researchers agree that Middle Iroquoian ceramic assemblages (ca. A.D. 1330-1400) are dominated by two of these vessel types—Ontario Horizontal and Middleport Oblique (Dodd et al, 1990:337). Sites of the early Late Iroquoian period (ca. A.D. 1400-1450), on the other hand, are characterized by high frequencies (i.e., more than 25%) of neck decorated pottery (Dodd et al 1990:337; see also Robertson and Williamson 2003:32-37). At Grandview, Pound Necked and Black Necked vessel types constitute 60.7% of the assemblage. Relatively low frequencies of Lawson Incised, Lawson Opposed, Huron Incised, Sidey Notched and Pound Blank varieties and a substantial presence of both Ontario Horizontal and Middleport Oblique vessels suggest that the site was occu-

Table 3. *Descriptive Statistics and Metric Attributes Summary (continued on opposite page)*

	n	%
Rim Form (n=176)		
collared	153	87.0
incipient collar	17	9.6
no collar	6	3.4
Lip Form (n=176)		
flat	171	97.2
rounded	4	2.3
concave	1	0.5
Angle of Lip to Interior (n=168)		
obtuse	102	60.7
right	52	31.0
acute	14	8.3
undetermined	8	
Rim Orientation (n=176)		
outflaring	130	73.9
vertical	44	25.0
insloping	2	1.1
Interior Profile (n=164)		
concave	79	48.2
straight	38	23.2
convex	37	22.6
convex/concave	9	5.4
concave/convex	1	0.6
undetermined	12	
Exterior Profile (n=176)		
straight	89	50.6
concave	44	25.0
convex	42	23.9
convex/concave	1	0.5
Collar Base Shape (n=168)		
angular	95	56.6
rounded	73	43.4
undetermined	8	
Collar Height (n=170)		
mean	17.4mm	
range	5-52mm	
standard deviation	7.8	

	n	%
Lip Width (n=169)		
mean	6.9mm	
range	3-13mm	
standard deviation	1.6	
Basal Collar Width (n=157)		
mean	10.9mm	
range	6-21mm	
standard deviation	2.4	
Collar Motifs (n=174)		
obliques	91	52.3
horizontals	29	16.7
opposed	17	9.8
obliques crossed by horizontals	14	8.0
obliques above horizontals	12	6.9
opposed beside plain	4	2.3
horizontals crossed by obliques	2	1.1
linear punctates	2	1.1
opposed above obliques	1	0.6
hatched	1	0.6
opposed above linear punctates	1	0.6
undetermined	2	
Collar Technique (n=174)		
linear stamped (ls)	84	48.3
incised	52	29.9
ls crossed by linear stamped	12	6.9
ls above incised	10	5.7
ls crossed by incised	3	1.7
ls above linear stamped	2	1.1
ls beside plain	2	1.1
linear punctates	2	1.1
incised above linear punctates	1	0.6
incised above linear stamped	1	0.6
incised crossed by ls	1	0.6
incised crossed by incised	1	0.6
incised beside plain	1	0.6
ls above incised beside plain	1	0.6
dentate	1	0.6
undetermined	2	

	n	%
Neck Motifs (n=174)		
horizontals	79	46.4
obliques	24	14.1
horizontals above obliques	10	5.9
linear punctates (lp)	9	5.3
opposed	7	4.1
plain	7	4.1
horizontals above lp	6	3.5
obliques above opposed	6	3.5
obliques above horizontals	5	2.9
linear punctates above obliques	4	2.4
horizontals above opposed	3	1.8
obliques above obliques	2	1.2
lp above opposed	2	1.2
lp above horizontals	2	1.2
hatched	1	0.6
horizontals above lp/obliques	1	0.6
opposed above horizontals	1	0.6
obliques/horizontals/opposed	1	0.6
undetermined	6	
Neck Technique (n=169)		
incised	87	51.5
linear stamped (ls)	23	13.6
linear stamped above incised	10	5.9
incised above linear stamped	10	5.9
linear punctates (lp)	9	5.3
plain	7	4.1
incised above linear punctates	6	3.6
linear punctates above incised	6	3.6
linear stamped above ls	4	2.3
incised above ls above incised	3	1.8
incised above incised	2	1.2
linear punctates above ls	1	0.6
ls above incised above ls	1	0.6
undetermined	7	
Interior Motif (n=168)		
obliques	66	39.3
plain	62	36.9
linear punctates	40	23.8
undetermined	8	

	n	%
Interior Technique (n=167)		
linear stamped	64	38.3
plain	62	37.1
linear punctates	40	24.0
dentate	1	0.6
undetermined	9	
Lip Motif (n=176)		
plain	160	90.9
obliques	9	5.1
horizontals	6	3.4
linear punctates	1	0.6
Lip Technique (n=176)		
plain	160	90.9
linear stamped	9	5.1
incised	6	3.4
linear punctates	1	0.6

Table 4. *Pottery Vessel Types*

Pottery Type	*Freq*	*%*
Pound Necked (Plate 1)	67	38.0
Black Necked (Plate 2)	40	22.7
Ontario Horizontal (Plate 3:a-c)	18	10.2
Middleport Oblique (Plate 4:a-c)	10	5.7
Middleport Oblique Variant (Plate 4:d-g) - obliques crossed by a horizontal on collar with horizontals or horizontals above obliques on neck	11	6.2
Lawson Incised (Plate 3:f, g)	9	5.1
Lawson Opposed (Plate 3:e)	5	2.8
Pound Blank (Plate 3:d)	4	2.3
Huron Incised	2	1.1
Sidey Notched	1	0.6
Middleport Criss-Cross	1	0.6
Ontario Oblique	1	0.6
miscellaneous (Plate 5)	7	4.0
Total	**176**	**99.9**

pied, for the most part, in the early rather than the mid- 15th century.

It is usually assumed that the occupants of villages would most often have deposited their refuse in exterior features or middens close to the ends of their houses. It is possible then, given the discovery of Ontario Horizontal and Middleport Oblique vessels largely within the houses and the exterior features of the proposed first phase of occupation (Tables 5 and 6), that the initial use of the site involving Houses 1, 2, 6 and perhaps 12 along with Exterior Activity Areas 2, 3 and 11 occurred during the late Middle Iroquoian period (A.D. 1380-1400). Moreover, the presence of Ontario Horizontal and Middleport Oblique vessels in House 8 and Midden 3 suggests it may have been the first of the subsequent houses to have been occupied at the site.

No radiocarbon dates have yet been processed for the site and despite the temptation to rely on

Table 5. *Pottery Types by Major Provenience Units*

	Interior House									*Midden*		
Pottery Types	**H1**	**H2**	**H3**	**H4**	**H6**	**H7**	**H8**	**H10**	**H11**	**M1**	**M2**	**M3**
Ontario Horizontal		2									6	5
Middleport Oblique											2	
Middleport Oblique Variant	1						1				8	
Middleport Criss-Cross												1
Pound Necked	1	1	4	1	1	1	1		3		32	1
Black Necked		1	7	2	1	2		1		2	9	4
Lawson Incised			1								2	
Lawson Opposed			1								1	
Pound Blank				1							2	
Huron Incised												2
Sidey Notched				1								
miscellaneous/aberrant		1	1								3	2
Totals	**2**	**5**	**14**	**5**	**2**	**3**	**2**	**1**	**3**	**2**	**65**	**23**

Table 6. *Pottery Types in Exterior Activity Areas (Non-Midden Contexts)*

Pottery Types	**EAA1**	**EAA2**	**EAA3**	**EAA4**	**EAA9**	**EAA11**	**Surface**
Ontario Horizontal			1	1		2	1
Middleport Oblique		2		6			
Ontario Oblique			1				
Pound Necked	3	6	1	1		1	2
Black Necked		5		3	1	2	
Lawson Incised		2		4			
Lawson Opposed		1		2			
Pound Blank				1			
Totals	**3**	**16**	**3**	**18**	**1**	**5**	**3**

these general ceramic trends to identify the occupation period(s) for the site, it should be noted that 14th and 15th century communities across southern Ontario appear to have been on different developmental trajectories with respect to settlement patterns, economic systems and material culture (Robertson and Williamson 2003). One of the implications of such an observation is that seriations of sites based on general ceramic trends may be inaccurate.

By comparison, the much larger ceramic vessel assemblage (n=673) recovered from the MacLeod site, located approximately 5.5 kilometres west of the Grandview site yielded six sherds decorated with pigment (Reed 1993:15). Three are covered with a red colour (ochre?) on the interior, and two are decorated with bands of a dark brown pigment on the exterior. The exterior of the sixth sherd is decorated with a brownish pigment forming three concentric circles bisected by two parallel lines.

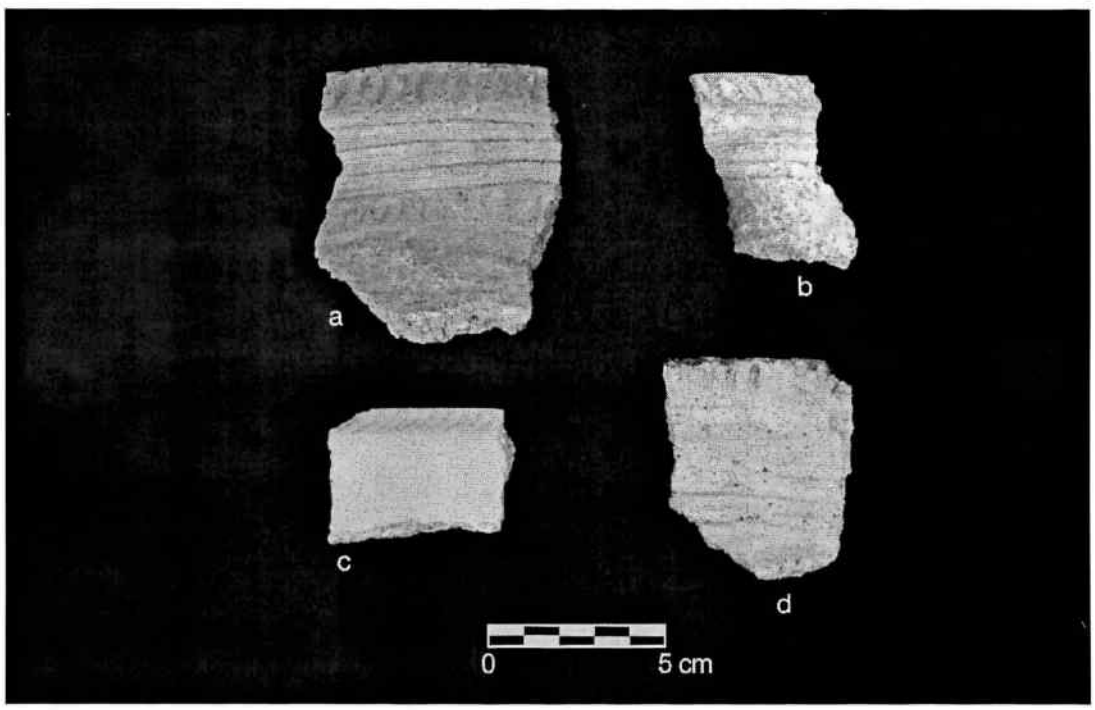

Plate 1. Selected Pound Necked Vessel Rims: (a) Vessel 96/Exterior Area 2 (b) Vessel 94/Midden 2 (c) Vessel 87/Exterior Area 1 (d) Vessel 92/House 3. Both Vessels 96 and 94 bear traces of a red slip or paint.

Ceramics with Applied Pigment

A noteworthy aspect of the ceramic assemblage is that two Pound Necked vessels have slipped exteriors. A slip glaze or wash is a thin coating comprised of a mixture of clay and pigment applied to the surface of a pot both as a decorative treatment and/or to decrease the porosity of the vessel. One of these vessels (Plate 1:a) was recovered from Feature 490 in Exterior Activity Area 2, while the other (Plate 1:b) was recovered from Feature 538 in the Midden 2 area.

While "painted" ceramics have rarely been observed on contemporaneous Iroquoian sites elsewhere in southern Ontario, the late thirteenth century Antrex site (Robertson and Williamson 2002; Wojtowicz and Welsh 2003) yielded 27 sherds with applied pigments or slips on both exterior and interior surfaces in red, black or dark brown, yellowish red or earth tone colours. The black or dark brown pigment is painted onto the exterior surface of a vessel body with an intentional motif of narrow

Plate 2. Selected Black Necked Vessel Rims: (a) Vessel 222/House 2 (b) Vessel 211/Exterior Area 1 (c) Vessel 219/Midden 2 (d) Vessel 218/Exterior Area 1.

Plate 3. Selected Vessel Rims: Ontario Horizontal-(a) Vessel 10/Midden 2 (b) Vessel 113/Mldden 3 (c) Vessel 114/Midden 3; Pound Black-(d) Vessel 29/Midden 2; Lawson Opposed-(e) Vessel 119/Exterior Area 4; Lawson Incised-(f) Vessel 238/Exterior Area 4 (g) Vessel 239/Exterior Area 2.

obliques lines traversing down onto the shoulder from the neck. Others include a painted motif of a single horizontal band and a painted motif of three broad banded lines. Three identified vessels exhibit applied exterior washes or slips to the collar or upper neck. A castellated Middleport Oblique vessel displays a possible exterior wash, a miscellaneous type castellation exhibits a yellow red wash on the exterior, and a Pound Necked vessel exhibits an incipient collar with obliques on the collar and horizontal over interrupted obliques on the neck over a single painted horizontal band.

Juvenile Pottery

Juvenile pottery accounts for 71 rim sherds, representing 68 vessels, one of which is complete (Plates 6 and 7). Twenty-two juvenile vessels have collars, while 18 have incipient collars. Collar heights range from 6 to 22mm, and vessel lip widths range from 3 to12mm. Thirty vessels have an outflaring rim orientation, and 37 have a vertical rim orientation. Ten of the 68 vessel rims are entirely plain, while 56 exhibit exterior decoration. Twelve juvenile vessels exhibit partial incipient castellations.

The decorative motifs and techniques on 13 vessels remotely resemble certain formal ceramic types: five are similar to the Pound Necked design motifs in that they display linear stamped obliques above incised horizontals on their necks; three display opposed incisions on their collars, similar to a Lawson Opposed motif; two have incised obliques on their collars, reminiscent of Huron Incised; two other vessels have collars dominated by incised obliques above incised horizontals, in the manner of Middleport Oblique; and one has incised horizontals on a weakly defined collar, similar to an Ontario Horizontal motif.

Ceramic Pipes

The ceramic pipe assemblage, comprised of 317 fragments and two complete pipes, including one complete miniature, was analysed by Eva MacDonald (1999). The fragments include 172 bowls, 107 stems, 13 elbow sections, three undetermined fragments, and 22 bowl-stem fragments that have been reconstructed into six nearly complete specimens. Wherever possible, all pipe fragments were mended prior to analysis, reducing the minimum number of specimens to a total of 281. Eleven specimens were classified as juvenile smoking pipes. It is interesting to note that 17 fragments, approximately 5% of the assemblage, also have a red slip applied to their surface. Only 78 fragments, approximately 24.6% of the assemblage, are burnished.

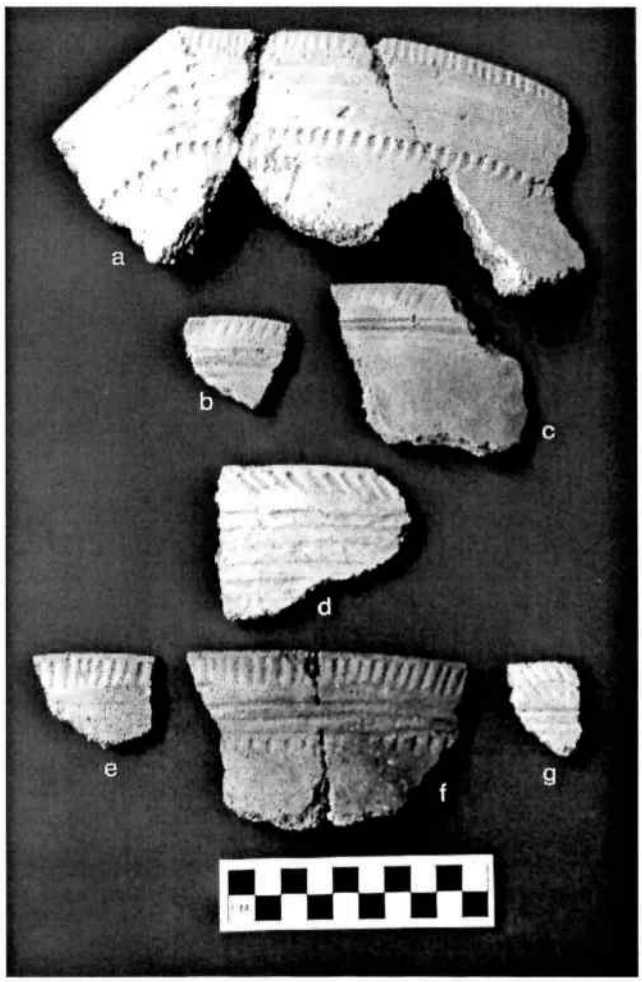

Plate 4. Selected Vessel Rims: Middleport Oblique-; (b) Vessel 20/ Exterior Area 4 (c) Vessel 24/Exterior Area 4; Middleport Oblique Variants- (a) Vessel 27/House 8 (d) Vessel 22/Midden 2 (e) Vessel 15/Midden 2 (f) Vessel 25/Midden 2 (g) Vessel 14/House 1.

Plate 5. Selected Miscellaneous Type Vessel Rims: (a) Vessel 5/Midden 3 (b) Vessel 229/House 3 (c) Vessel 4/Midden 2 (d) Vessel 6/Midden 2 (e) Vessel 3/Midden 3.

Plate 7. Complete Miniature/Juvenile Ceramic Vessel (No. 185) recovered from a support post in House 5.

A total of 57 bowl fragments, representing 29 pipe bowls, could be classified. Conical forms (Plates 8 and 9) were the most numerous (n=34), representing 59.6% of the analyzable bowl fragments, followed by trumpet (28%), barrel (3.5%), cylindrical (3.5%), vasiform (1.8%), one coronet-like fragment with a squared corner (1.8%), and one other miscellaneous type. No effigies were recovered.

With respect to bowl motif, plain fragments (n=68) constitute approximately 34.7% of the sample. The majority of the decorated bowls (n=123) exhibit simple obliques and/or horizontals, sometimes in combination with punctates. As a principal design motif, circular or vertical linear punctates are rare in the assemblage (n=5) (e.g., Plate 9:f).

The majority of the stems are plain, although one unusual fragment (Plate 9:h) has been ground to create a stepped surface and a red slip has been applied.

The term juvenile was applied to pipe fragments with non-functional features, such as a stem without a borehole, as well as fragments that had been roughly finished, decorated in an irregular manner, or tempered with large pieces of grit. Nine bowl and two stem fragments possess one or more of these attributes. They were interpreted by MacDonald as examples of children's products in the context of learning to work with clay.

Although the complete miniature pipe (Plate 9:g) was non-functional, it is well-proportioned with recognizable features. Its stem is tapered, with an oval cross-section, and measures 23.8 mm long. The bowl is 12.3 mm in diameter, 17.2 mm high, and is a plain, conical form. These measurements fit well with the mean metric parameters defined by Kapches (1992) in her study of Iroquoian miniature pipes, although she focussed her study on small-scale,

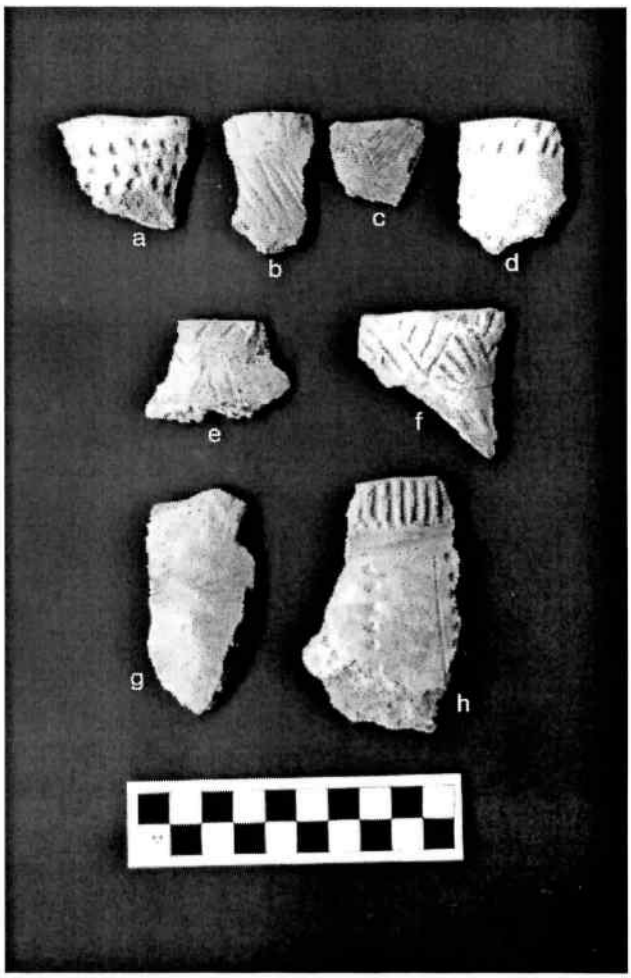

Plate 6. Selected Miniature/Juvenile Vessel Rims: (a) Vessel 177/Midden 2 (b) Vessel 182/House 12 (c) Vessel 168/Midden 2 (d) Vessel 186/Midden 3 (e) Vessel 178/House 4 (f) Vessel 187/Midden 2 (g) Vessel 183/House 4 (g) Vessel 184/Exterior Area 2.

functional versions of adult pipes. Kapches argued (1992:78) that these miniatures could be interpreted as personal charms and tokens exchanged during ritual events given the importance of smoking pipes in Iroquoian social interaction (Tooker 1964:50). It is possible that the Grandview miniature also functioned as a charm or token.

Flaked Stone

The flaked stone assemblage, consisting of 913 artifacts was analysed by Shaun J. Austin and Monicke Thibeault (Austin and Thibeault 1999). The assemblage includes five projectile point fragments, five side scrapers, nine crude

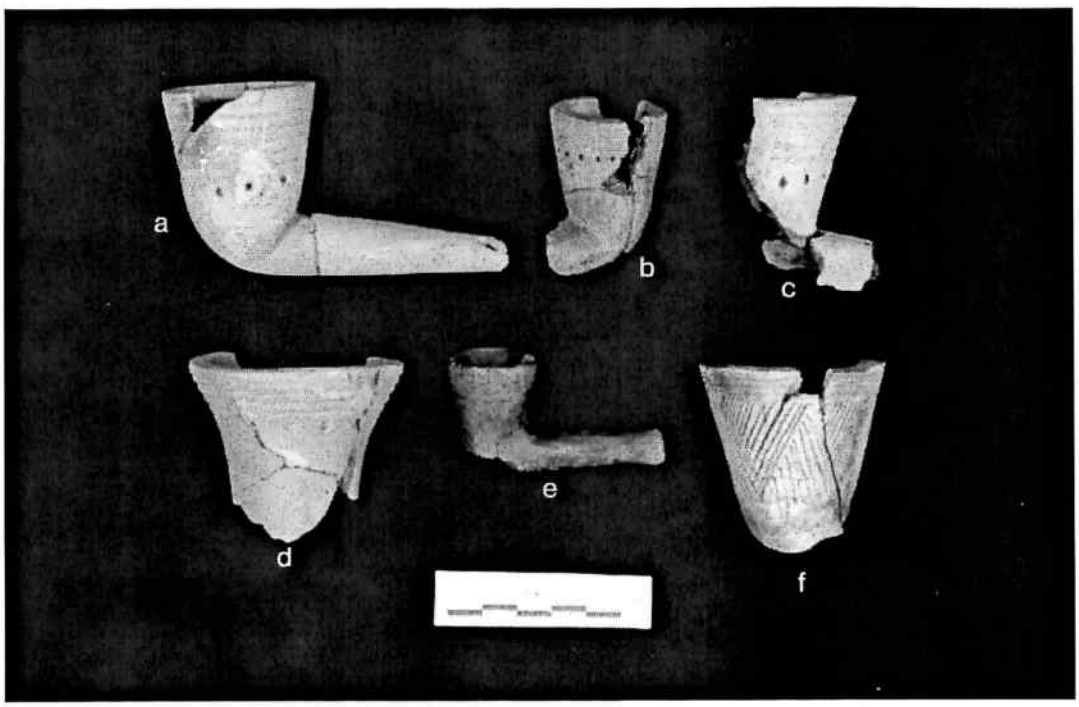

Plate 8. Selected Pipes: conical bowl forms (a-c, e, f), trumpet bowl form (d).

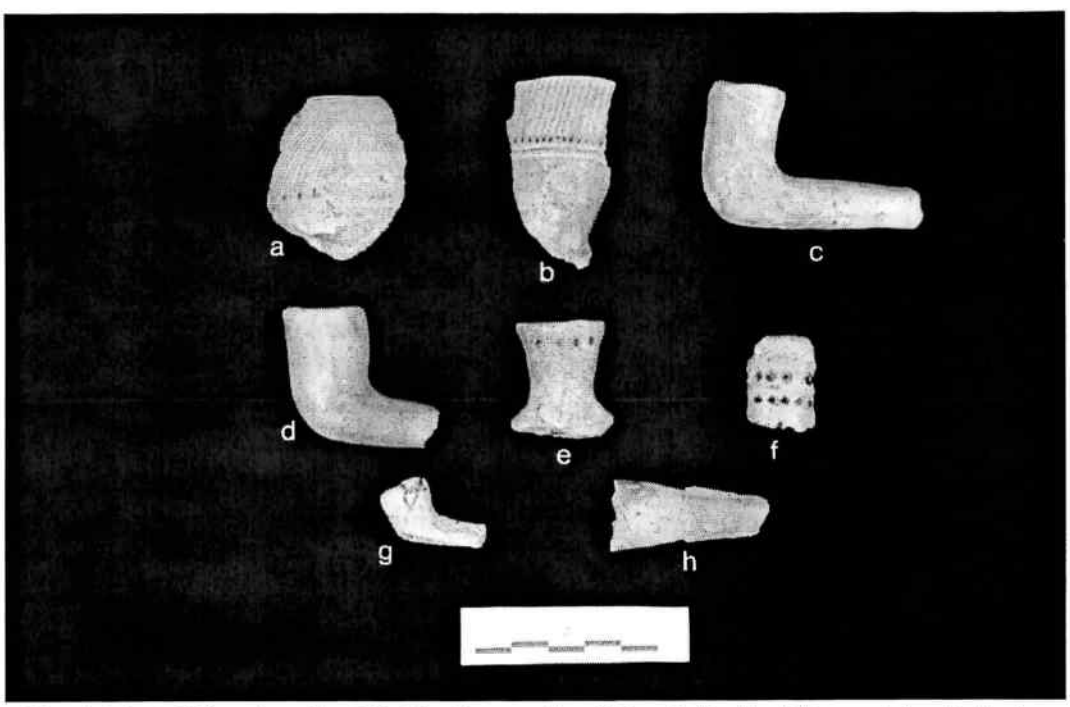

Plate 9. Selected Pipes: barrel bowl (a), triagular or oval bowl (b), cylindrical bowl (c), complete cylindrical red slipped pipe (d), conical bowl with flat stem section (e), conical bowl (f), complete miniature pipe (g), ground and slipped mouthpiece (h).

biface fragments, one graver, 44 cores, 188 utilized and retouched flakes, and 661 unmodified flakes and shatter. Not surprisingly, the vast majority of these artifacts (43.2%) had been deposited as refuse within midden contexts. Exterior Activity Areas 1 and 2 also yielded substantial quantities of lithic debris as did House 3.

The identified raw materials include 502 (55%) artifacts of Onondaga chert and 306 (33.5%) of Trent Valley chert. The remainder comprise Bois Blanc (n=14/1.5%), Balsam Lake (n=13/1.4%), Kettle Point (n=8/0.9%), Haldimand (n=7/0.8%), Selkirk (n=2/0.2%), Hudson's Bay Lowland (n=1/0.1%), Fossil Hill (n=1/0.1%), Lockport (n=1/0.1%) cherts, as well as Flint Ridge chalcedony (n=5/0.5%) and quartzite (n=1/0.1%). Almost all (80%) of the formal tools were made on Onondaga chert, and 65% and 27% of the expedient tools on Onondaga and Trent cherts, respectively. Fifty-one artifacts (5.6%) were manufactured of unidentified silicious stones.

Thermal alteration is apparent on only five Onondaga chert artifacts. This is a relatively low percentage compared to most other Middle to Late Iroquoian village sites.

Projectile Points

Five projectile points fragments were recovered including three Nanticoke Notched points made on Onondaga chert, a Middleport Side-Notched point of Bois Blanc chert and a thinned base fragment, which appears to be derived from a thermally altered, side-notched projectile point of Onondaga chert (Plate 10).

Other Formal Tools

Five steep-edged side scrapers were recovered, three manufactured of Onondaga chert, one of Trent Valley chert and one of Balsam Lake chert (e.g., Plate 10:a-d). Nine crude biface fragments made from Onondaga chert were also recovered as was a small graving tool of Onondaga chert (Plate 10:g).

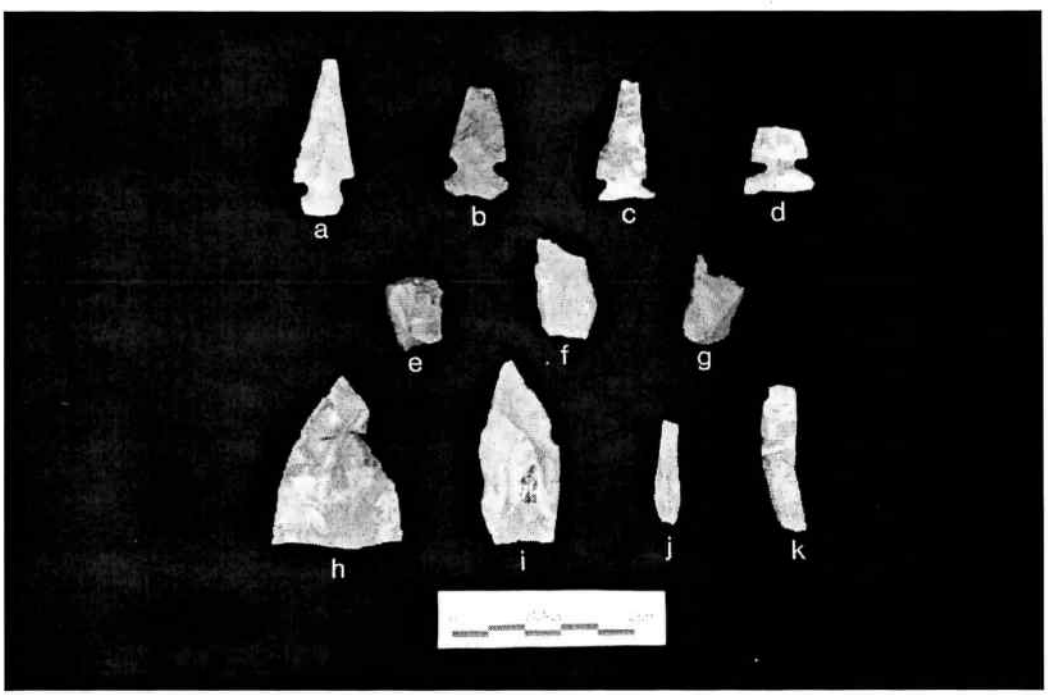

Plate 10. Selected Chipped Stone: Nanticoke Notched type points (a-c), Middleport Side-Notched type (d), scrapers (e-f), graver (g), bifaces (h-i), retouched blade flakes (j-k).

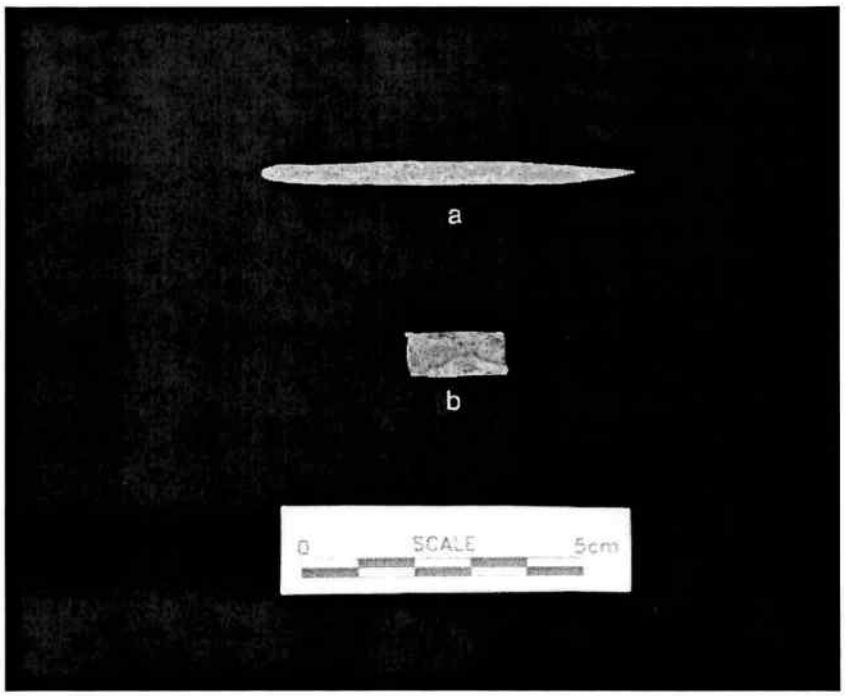

Plate 11. Bipointed copper awl or gorge (a), and rolled copper bead (b).

Cores

Forty-four cores were recovered, thirty-eight of which are of either Trent Valley or Onondaga chert, four of which are of unidentified cherts, and one of which is of Hudson's Bay Lowland chert.

Debitage

A total of 661 unmodified flakes and shatter fragments was recovered, mostly representing secondary knapping activities and bipolar reduction. One hundred and eighty-eight pieces of deliberate unifacial retouch were identified among the flakes and shatter.

Summary

The flaked lithic assemblage reflects a general conservation of raw materials, which appear to have been acquired mainly from sources to the east and west of the site. The conservation of lithic tools is most obviously reflected in the relatively low frequencies of discarded or lost formal tools, and the relatively high frequency (28%) of retouched flakes and shatter.

Ground Stone

A total of 55 ground stone artifacts was recovered, including three near complete celts, an additional 19 analyzable celt fragments, 23 generalized/unanalyzable fragments, four hammerstones, four anvilstones, and two hammer/ anvilstones. These tools were analysed by David Robertson (1999).

The celt assemblage consists of three near complete specimens (Plate 12), 13 bit portions, three poll (butt) ends and three midsections. On the basis of size and form, one of these items is classified as an axe, seven are considered adzes, three are gouges or chisels, and the remainder were too small to assign to any particular tool type. All specimens are made from amphibolite. The sample also includes an additional 23 fragments of the same material, the majority of which appear to represent the remains of longitudinal fragmentation of similar tools.

Just over 50% of the bit portions exhibit heavy attrition in the form of crushing and/or flaking, while battering at the proximal end of numerous specimens also suggests that these tools, after fragmentation, were used secondarily as wedges, possibly for splitting wood. Three poll end fragments were recovered, all of which exhibit battering at the distal end.

The assemblage also includes four round to ovate waterworn granite cobbles used as hammerstones, portions of four fire-cracked anvilstones, all of which exhibit at least one area of concentrated pitting that forms a shallow concavity, and four ovate waterworn cobbles that bear traces of use as both hammer- and anvilstones.

Plate 12. Selected Ground Stone Adzes.

Bone Artifacts

The artifact assemblage contained 113 specimens of industrially modified faunal elements, which were subjected to detailed analysis by Stephen Cox Thomas (1999a). The collection includes formal and expedient implements, decorative items, and manufacturing debris, recovered from a wide variety of midden, feature, post mould and surface contexts.

While a large proportion of specimens were not identified to species level, due to their fragmentation during the manufacturing process, white-tailed deer figures prominently among the species used for raw materials, particularly for awls. Other species employed in the manufacturing of tools include moose, beaver, domestic dog, fox, bear, turkey, sandhill crane, long or short eared owl, and painted turtle.

Awls and Pointed Hand Tools

The formal awl category includes five complete specimens with styloid tips (Plate 13:a) as well as two complete and two near complete specimens with oval cross-section tips (e.g., Plate 13:b). Expedient awls include six complete or near complete specimens with styloid tips, three specimens with oval cross-section tips, and four examples with irregular-shaped tips. The collection also includes two awls with flat or spatulate tips, two bipointed tools, a perforated netting needle, two unperforated tools which may have also functioned as needles and four beaver incisor chisels.

Bodkins

Six decorative bodkins or "hair pins" were recovered, two of which are complete (Plate 13: f, g). These items are all robust, well-made, and polished, with blunt, unaltered tips, suggesting their use for personal ornamentation.

The proximal ends of these items were altered by incised annular grooves to form a row of pea-sized balls, the uppermost of which is usually flat-topped. A small example with a styloid point, bearing a shallow annular constriction near the proximal end, may represent a "miniature" version of this artifact type (Plate 13:h).

William Fox (personal communication 2003) has suggested that the proximal ends of these items were perhaps formed to resemble rattlesnake rattles, consistent with the spiritual significance of the rattlesnake in North American aboriginal ideology (Fox 2003).

Projectile Points

Eight items were classified as projectile points or probable projectile points. Five of these are conical (Plate 13:c,d), while a sixth (Plate 13:e) is a flat specimen with an isosceles form that appears to have been side-notched. The others are flat lanceolate-shaped points.

Beads and Tubular Artifacts

Beads and tubular artifacts comprise the most numerous class within the non-utilitarian category. Five entire tubular beads and two tubular bead fragments were manufactured from the major long bones of birds while an unusually long, thin bead or tube and three tubes or very large beads were cut from the shaft sections of mammalian long bones. The recovery of bead manufacturing failures is considered to be evidence of on-site manufacture of tubular beads.

Four discoidal shell beads were also recovered from four separate features. There was no evidence for their on-site manufacture.

Miscellaneous Tools and Worked Items

Among the other fragments of worked bone items and manufacturing debris were four socketed handles, one of which was recovered from Feature 38 in House 4. Made from the distal end section of the right tibia of a dog, it is characterized by copper staining on both the interior and exterior of its ground and highly polished cut end. With an internal diameter of 4.1 mm, this item may have held a copper tool similar to the one found in Feature 508 in Exterior Activity Area 4.

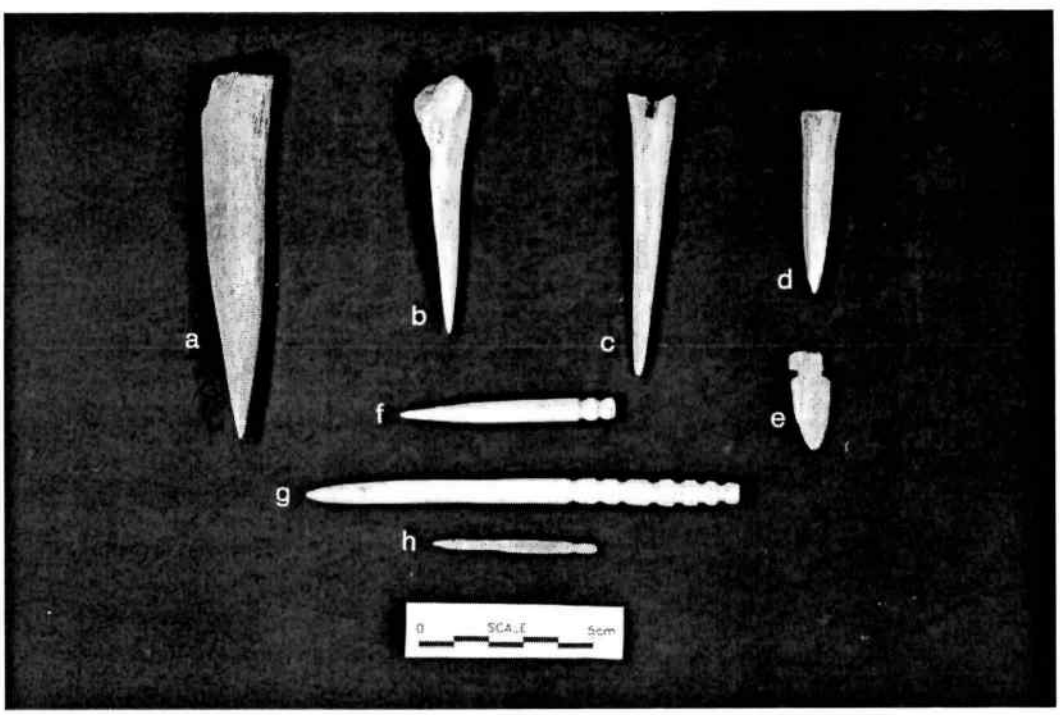

Plate 13. Selected Worked Bone Items: awl (a-b), conical projectile points (c-d), flat side-notched point (e), bodkins (f-g), miniature bodkin/pin (h).

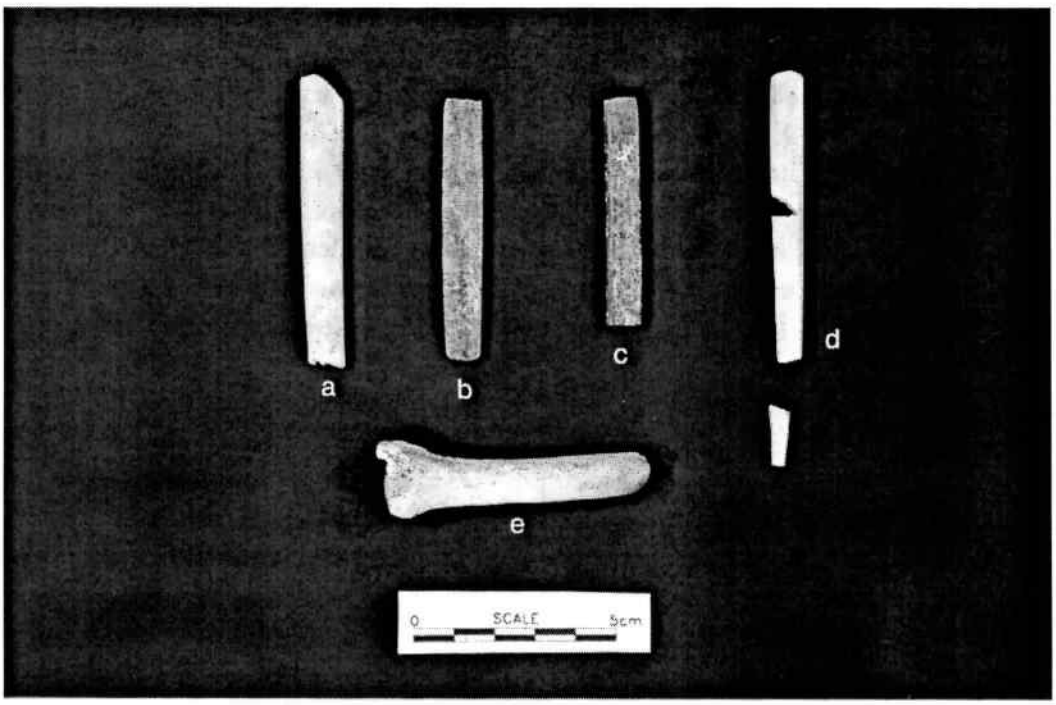

Plate 14. Selected Worked Bone Item: Flat "strips" (a-d), copper-stained socketed handle (e).

A moose rib scraper as well as the tine end section of an antler were also found. The scraper was whittled and polished on its proximal end, while the antler tine may have served as a flaker or punch in that its blunted distal end is notched and scarred.

Seven perforated deer phalanges were also recovered, which may have functioned as components in cup and pin or other games, strung beads, or bangles or toggles attached to clothing (McCullough 1978:86 ff.).

Two pieces of worked and polished turtle shell were also recovered from Midden 2, both of which had been ground and drilled, probably to make a rattle.

Plant Remains

An analysis of the plant remains was undertaken by Stephen Monckton (1999). While over 1,100 litres of soil were processed using the bucket method of flotation, the light fractions from 97 litres were examined. Approximately 350 charred seeds were recovered from features within 11 longhouses and three exterior features. The recovered cultivated plant taxa (11% of the sample) included maize, bean, cucurbit, sunflower, and tobacco. A wide variety of fleshy fruits and greens, however, comprised the majority of plant taxa. The fruits included elderberry (*Sambucus* sp.), black nightshade (*Solanum nigrum/americanum*), strawberry (*Fragaria* sp.), bramble (*Rubus* sp.), cherry (*Prunus* sp.), and hawthorn (*Crataegus* sp.). Greens/grains and other taxa included chenopod (*Chenopodium* sp.), spikenard (*Aralia* sp.), birch (*Betula* sp.), sumac (*Rhus typhina*), cat-tail (*Typha latifolia*), possible pond weed (*Potomogeton* sp.), small grass (*Gramineae*), and several unidentified species.

Corn was found in most of the houses but bean and cucurbit were represented by only one and two fragments, respectively, and sunflower (*Helianthus annuus*) was represented by 14 achene fragments. Tobacco (*Nicotiana rustica*) was also represented by only two seeds.

While most of the fruits and greens are commonly found on Iroquoian villages, spikenard was frequently used as medicine in the Great Lakes region (Wrong 1939: 195). The cat-tail seeds occur in several features and could represent the presence of rush mats. The possible pondweed seeds, recovered from Feature 231 in House 1, were probably introduced with drinking water.

In terms of their distribution, Monckton found that there were differences in the composition of plant remains between interior and exterior house features. The interior features were generally richer in cultigens, while exterior house features contained far more fleshy fruits and other taxa, perhaps indicative of summer deposition. As a subgroup, however, interior house features were more diverse in content than all other features perhaps reflecting the wide range of activities carried out within houses.

The wood charcoal fragments revealed a familiar range of tree genera including maple (*Acer* sp.), beech (*Fagus* sp.), ash (*Fraxinus* sp.), elm (*Ulmus* sp.), ironwood (*Ostrya virginiana*), and white pine (*Pinus strobus*). Beech and maple were dominant in almost all samples analyzed, while ash and elm were common.

Faunal Remains

A total of 6,699 faunal elements was recovered from the site. A sub-sample of this material, derived from four features—Feature 252 (House 1), Feature 38 (House 4), Feature 378 (House 9), and Feature 538 (Midden 2/Exterior Area 1)—was subjected to detailed analysis by Stephen Cox Thomas (1999b). The analysis of the sample was intended to provide some preliminary insights into the subsistence strategies of the occupants of the site, although it was acknowledged that it did not necessarily represent the subsistence system of the entire village. This sub-sample comprised a total of 574 elements of which 225 were identified to a useful taxonomic level.

A separate analysis of an additional sample of approximately 200 fish vertebrae recovered from Middens 2 and 3 was completed in order to further examine the role and scheduling of fishing in the overall subsistence regime.

Feature 38
The overall faunal sample recovered from Feature 38, a semi-subterranean sweat lodge located in House 4, consisted of 47 items, ten of which were identifiable, eight as white-tailed deer and one each as woodchuck and mallard duck. The bones of woodchuck and the mallard (a surface feeding duck) suggest that the feature fill was deposited during warm weather.

Feature 252
The Feature 252 assemblage consisted of 24 identified elements (excluding fish vertebrae). Other than the deer skull and the associated two scapulae found on the living floor, the only other bone found on the living floor was a brown bullhead quadrate.

The remaining 20 specimens were derived from the feature fill. In addition to nine deer limb elements, several bones of medium and medium-small fur-bearing animals were present, including snowshoe hare, beaver, domestic dog, and raccoon, all of which, with the exception of a beaver incisor, represent preliminary butchering waste.

Fish remains included elements of bullhead, perch, and sucker along with two salmonid vertebrae.

Feature 378
Feature 378, a semi-subterranean structure located in House 9, yielded, in addition to nine worked bone artifacts,16 subsistence bone specimens including domestic dog, white-tailed

deer, brown bullhead, lepomid sunfish (probably pumpkinseed or bluegill), yellow perch, and lake whitefish.

Feature 538

Feature 538, a refuse pit associated with Midden 2 in Exterior Activity Area 1, yielded a total of 436 elements, of which 177 were identified to a useful taxonomic level. The stratigraphy of the pit suggested that its fill may have been taken from several sources and deposited concurrently.

The faunal assemblage from the pit is unique in that it is comparatively large, and is the only one in which fish outnumbers mammal remains and in which salmonid cranial bones were found. This may simply be a reflection of the relatively large population of identified fish bones found in the feature.

The most frequently occurring species were brown bullhead, white sucker (some longnose sucker might have been present) and yellow perch. Also present were elements of rock bass and lepomid sunfish (pumpkinseed—identified here to a probable level), bluegill, green sunfish and longear sunfish. Yellow perch and white sucker are present in the assemblage in numbers sufficient to suggest either a very brief interval of harvest level processing, during the spring spawning period, or perhaps the daily production of a small fish trap. Thomas concluded that these fish were taken throughout the season using the latter technology on the basis of osteometric and relative size data.

Feature 538 also yielded substantial numbers of fish vertebrae mirroring the considerable amount of fish cranial bone found there. Salmonid species account for 19 of 41 fish vertebrae and include Atlantic salmon, lake whitefish, lake trout, and possibly brook trout. Among the non-salmonid specimens are five American eel vertebrae.

Several specimens of ruffed grouse, passenger pigeon, snapping turtle and painted turtle were also found. The presence of turtles and of passenger pigeon indicates warm weather procurement activities.

The mammal assemblage includes white-tailed deer, gray fox, grey squirrel, American red squirrel, woodchuck, eastern chipmunk, deer mouse, muskrat , domestic dog, black bear, raccoon and American marten. The body portion representation profile of the deer represents an intermediate stage in butchering.

Another remarkable aspect of the mammal assemblage was the recovery of 19 elements, distributed throughout strata 3, 4 and 5 of the pit, representing two adult individuals of the rather uncommon grey fox. The body portion profile suggests that the paws may have been separated prior to the processing event. There were cut marks on the base of the rostrum (nose) and mandible consistent with skinning and pelt removal and cut marks on a vertebra and rib consistent with butchering.

Fish Vertebrae Analysis

Since conventional analysis of fish bone usually focuses on bone from the head area rather than vertebrae and inasmuch as salmonid species tend to be under-represented in conventional analyses, the analysis of the fish vertebrae from the above features was augmented with 175 analysable vertebrae from 21 metre squares in two middens.

The midden sample yielded 78 salmonid vertebra, which, in descending order of frequency, include Atlantic salmon, lake whitefish, and lake trout. The size of the Atlantic salmon total is particularly impressive; 49 identified vertebrae account for 28% of all fish vertebrae and 62% of the salmonid vertebrae. No brook trout were identified, although the midden sample is much larger than the combined feature sample.

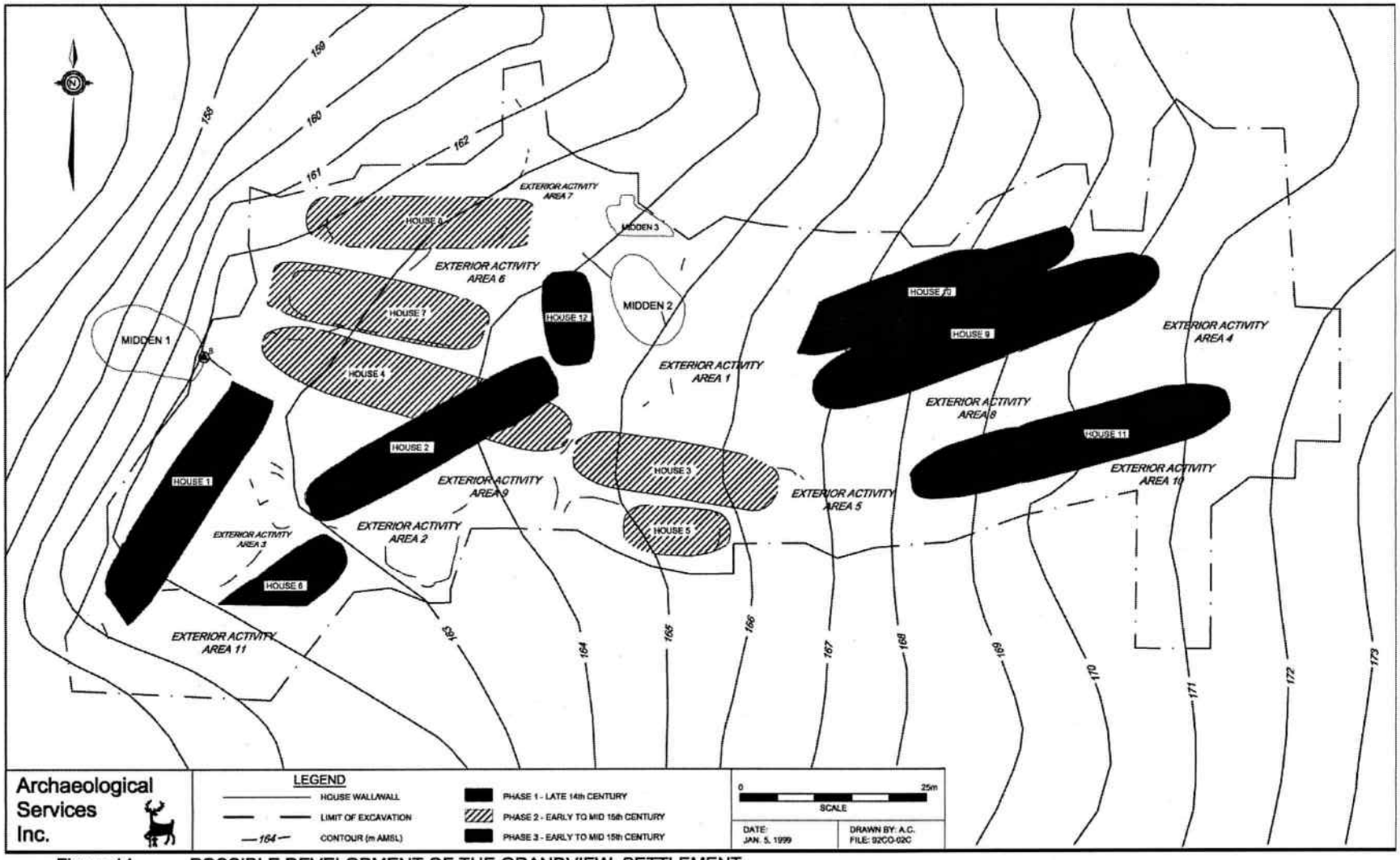

Figure 14 POSSIBLE DEVELOPMENT OF THE GRANDVIEW SETTLEMENT

American eel is present, although it accounts for only 5% of the midden sample.

Summary

While recognizing that the sample may not represent a comprehensive view of the hunting and fishing practices of the community, an emphasis seems to have been placed on hunting deer rather than on the collection of smaller mammals such as snowshoe hare, cottontail, squirrel and chipmunk, which would have thrived in proximity to a human settlement.

Especially well represented among fish are brown bullhead, sucker (mostly white sucker), lepomid sunfish, and yellow perch. These species could be obtained locally, particularly in low-gradient, downstream portions of Harmony Creek and in the bays and inlets along the Lake Ontario shore. Given the quantities of salmonid vertebrae, there also appears to have been a major fall salmonid fishery for Atlantic salmon in the local watercourses, and for lake whitefish and lake trout along the shoals of Lake Ontario.

Summary and Conclusions

The excavation and analysis of this site has shed important new light on the Iroquoian settlement of the north shore of Lake Ontario. Based on the results of the ceramic analysis, Grandview is estimated to have been occupied primarily during the early Late Iroquoian period (ca. A.D. 1400-1450).

The settlement pattern data from the site indicate that the village was not palisaded and that its overall layout was the result of at least two and possibly three major phases of construction (Figure 14). The initial occupation of the settlement, which may have begun in the latter part of the fourteenth century, appears to have entailed the construction of Houses 1, 2, 6, and perhaps House 12. Several aspects of these four structures, in terms of their forms and structural histories, suggest that these houses represent the founding population of the community. Houses 6 and 12, together with the earliest phase of House 2, all represent small, apparently slightly-built cabins that were occupied by comparatively small households or special work groups on a short-term basis. House 1 and the expanded House 2, on the other hand, are both sizeable structures that are, in terms of their size and interior layout, more consistent with the permanent residences of cohesive and formalized kinship groups. Furthermore, both of these structures appear to have undergone extensive rebuilding and modification on numerous occasions, suggesting that they were both occupied for relatively long periods of time.

The second phase of the development of the village, which occurred in the first half of the fifteenth century, was marked by the erection of Houses 3, 4, 5, 7, and 8. Although these new developments necessitated the abandonment of at least House 2, and also likely resulted in a reorganization of exterior activity patterns within this portion of the settlement, the other structures related to the first phase of the settlement may have continued in use. All of the Phase 2 structures share a common northwest-southeast alignment, and with the exception of House 5, all represent the remains of more regular longhouses that were occupied on a year-round basis.

The third phase of occupation, was marked by an eastward extension of the settlement with the construction of three longhouses (Houses 9, 10, and 11) on the spatially isolated eastern or upslope section of the site. These developments are also postulated to have taken place during the A.D. 1400-1450 period. Given that all three of these structures shared a common southwest-northeast orientation, this expansion of the site likely occurred over a comparatively brief period of time. It is likely that these structures were

occupied during and/or shortly after the tenancy of the Phase 2 structures.

With respect to traditional ceramic vessel typology, Pound Necked and Black Necked types together account for approximately 60% of the sample. Ontario Horizontal and Middleport Oblique (in its two forms) each account for just over 20% of the sample. These ceramic data would suggest that Grandview was primarily occupied during the early to mid-fifteenth century. The smoking pipes recovered from the site similarly suggest a late Middle to early Late Iroquoian affiliation.

The flaked stone assemblage is modest in quantity and reflects a general conservation of raw materials, which in addition to Onondaga and Trent valley cherts, appear to have been acquired from a number of till sources. The conservation of lithic tools is most obviously reflected in the relatively low frequencies of discarded or lost formal tools, and the relatively high frequency (28%) of retouched flakes and shatter. A moderate number of ground stone tools and fragments were also recovered.

The worked bone industry is comparatively diverse and sophisticated. In addition to a range of awls made from large mammal long bones, numerous conical and flat lanceolate projectile points were recovered. Decorative items in the form of bodkins are also well-represented in the assemblage. One socketed handle was part of a composite copper tool. Indeed, a copper awl or gorge, as well as a rolled copper bead was also recovered from the site.

Analysis of a sample of the plant remains revealed the full complement of domesticated crops—maize, bean, cucurbit, sunflower and tobacco—together with a diverse range of gathered wild plants, such as bramble and several types of greens and grains that likely flourished along the margins of the settlement and its field clearings.

The analysis of the identified faunal material recovered from four features suggests that deer-hunting was a major subsistence pursuit while the hunting of small mammals, such as snowshoe hare, cottontail, squirrel and chipmunk, is not well represented. In terms of fishing, brown bullhead, sucker, lepomid sunfish, and yellow perch were likely obtained locally, particularly in low-gradient, downstream portions of watercourses, and in the estuaries, bays, and inlets along the Lake Ontario shore. Another important aspect of the fishery was the major fall harvesting of Atlantic salmon in the local watercourses, and lake whitefish and lake trout along the shoals of Lake Ontario.

In order to place the Grandview site within a regional sequence of site development, a review of the provincially maintained archaeological site database and the published and unpublished archaeological literature, was undertaken. In the Early Iroquoian period (A.D. 900-1280), substantial Iroquoian populations were living approximately 18.5 km to the west of the Grandview site in a cluster of settlements situated within the lower Duffins Creek watershed. These villages and special purpose sites include the Bolitho, Boys, Ginger, Miller, Winnifred and Carleton sites (AlGs-102, 10, 104, 1, 103, 11). An Iroquoian presence was maintained in the Duffins Creek-West Duffins Creek drainage basin throughout the entire Middle Iroquoian period (A.D. 1280-1400). Iroquoian groups had also spread into the lower Rouge River-Little Rouge Creek watershed, approximately five km west of West Duffins Creek (ca. 24 km west of the Grandview site), by early Middle Iroquoian times (A.D. 1330). The Robb, Woodland Park, and Faraday sites (AlGt-4, 8, 18), which were among the first Middle Iroquoian sites in the area, were succeeded by the Millroy, New, Hamlin, Russell and Milne sites (AlGt-1, 36, 60, 162; AkGt-41).

Dodd et al. (1990) have characterized the Middle Iroquoian period (A.D. 1280-1400) as

a time of rapid population growth, increasingly formalized socio-political organization, and the emergence of new settlement-subsistence systems. On the other hand, with recent evidence, it appears that 14th and 15th century communities across southern Ontario were on individual developmental paths with respect to settlement patterns, economic systems and material culture (Robertson and Williamson 2003). It was at this time that Iroquoian groups began to "colonize" such regions as the Oak Ridges Moraine (Austin 1994) and southern Simcoe County (Sutton 1996; MacDonald 2002).

On the basis of the Grandview evidence, Iroquoians had reached the Harmony Creek region by the late 14th century. In all likelihood, the site represents an eastward expansion of Iroquoians from the Duffins Creek or Rouge River regions. Yet, it should also be noted that the amount of archaeological survey conducted in the Town of Pickering and the City of Scarborough has far exceeded that in the Regions of Durham, Northumberland and beyond. Thus, it cannot necessarily be concluded that there were no Middle Iroquoian populations closer than those in the Duffins Creek area. Indeed, it is intriguing that the Early Iroquoian Short site (AlGq-1), near the confluence of Bowmanville Creek and Soper Creek, lies just 14.75 km to the east of the Grandview site. And it would be surprising if at least some of the Grandview villagers were not somehow related to the residents of the Short site.

Forty square feet of the Short site were excavated in 1961 by Donaldson (1962). Although no settlement patterns were revealed, with the exception of a possible hearth, the recovered cultural material included: bird, fish and mammal bone; notched netsinkers, hammerstones, adzes, projectile points, choppers, drills, and knives; a bone awl and antler drift; two partial ceramic pipes and 26 Middle Woodland and Iroquoian ceramic vessels; and a dozen corn kernels "in close association with the Iroquoian pottery" (Donaldson 1962:2). Judging from the identified ceramics, the Short site was occupied during both the Middle Woodland (A.D. 100-900) and Late Woodland (Early Iroquoian, A.D. 900-1280) periods. The 12 Middle Woodland vessels from the site include coil-constructed, uncollared vessels with rocker dentate decoration. The 14 Early Iroquoian vessels display incised rims with short collars and pointed castellations.

With regard to where the Grandview site occupants may have relocated after the abandonment of their village in the mid-15th century, the most likely candidate presently known is the MacLeod site (AlGr-1) (Donaldson 1971; Latta 1972.; Ramsden 1977; Reed 1993), a Late Iroquoian village situated 5.5 km west of the Grandview site, on the former banks of Goodman Creek. In 1967, artifacts were discovered on the southeast, northwest and northeast corners of the intersection of Rossland and Thornton Roads, suggesting that the site encompassed an area of approximately 1.6 ha. All four corners of the Rossland and Thornton Road intersection had been extensively developed by 1989. Test excavations conducted in 1968, 1970, 1971 and 1972 uncovered two longhouses, three middens, and numerous external features and post moulds, all at the southeast corner of the intersection.

While there is some evidence for affinities between Grandview and MacLeod, most notably in the recovery of painted ceramics and the presence of wall trenching as an architectural feature, the nature of the relationship between the two communities remains unknown. Nevertheless, the preponderance of currently available evidence would suggest that sometime shortly before A.D. 1400, a group of Iroquoians, perhaps from the Duffins Creek or Rouge River watersheds in the west came to settle on lands just above the Iroquois strand line

on the banks of Harmony Creek with easy access to both the lakeshore and associated marsh and Lake Scugog further inland. The occupation of the site was dynamic and complex with several phases of occupation, culminating in a mid-fifteenth century abandonment of the site. The villagers possibly relocated to the MacLeod site, near what is now the intersection of Rossland and Thornton Roads. Clearly, refinement of this scenario awaits further investigation of regional site

Acknowledgements

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The site assemblage is permanently housed at the Oshawa Community Museum and Archives, which currently features the site in an interactive display and educational kit for teachers. The museum is located at 1450 Simcoe Street South in Oshawa.

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