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PHASE III DATA RECOVERY EXCAVATIONS OF THE PREHISTORIC COMPONENT OF 44AX177 AND 44AX176, STONEGATE DEVELOPMENT, PARCEL C, CITY OF ALEXANDRIA, VIRGINIA

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PUBLIC INTERPRETIVE SUMMARY

44AX177 is a prehistoric archeological site which occupies a wooded hilltop overlooking Braddock Road to the north and Interstate 395 to the east. The tract of land in which the site is located will become part of the larger Stonegate housing development; this is the reason that archeological investigations were necessary, as prior studies had shown the site was significant enough, in terms of the prehistory of both Alexandria and Northern Virginia, to be eligible for the National Register of Historic Places.

Significance criteria for archeological sites include the potential for research value, rarity of the type of site, public value, site integrity, and the presence of artifacts and other materials. The research value of the Stonegate site lies in its potential to provide information about one aspect of the prehistoric settlement system--that of the making of stone tools--particularly during the period 1800-1200 B.C. Rarity and public value were also important criteria because very few intact prehistoric sites are present within the City of Alexandria; land development during both historic times and recent times has radically changed the landscape, and many, many sites were destroyed in the process. Although the site was determine to have been plowed, thus mixing the artifacts together and affecting the vertical integrity, some horizontal integrity remained. This allowed for the recovery of significant research data. Through an agreement between the City of Alexandria's Alexandria Archaeology and Pulte Homes, the developer of Stonegate, recovery of the pertinent information was carried out by Thunderbird Archeological Associates, Inc. during several weeks of systematic excavation.

The results of these excavations defined four broad periods of prehistoric use of the site:

1) the earliest period of use, the Halifax phase, dated to approximately 3600-2500 B.C., the end of the Middle Archaic;
2) this was followed by the Holmes phase of the terminal Late Archaic dating from 1800-1200 B.C.;
3) the next period of use at the site is represented by a generalized Early Woodland occupation dating from circa 1200-750 B.C.; and finally,
4) the latest occupation was that of a Late Woodland period phase, dating from circa A.D. 900 to 1700.

Periods are long time blocks which have been defined for the Eastern United States, consisting of:

Paleoindian/Early Archaic - 9,500-6,500 B.C.
Middle Archaic - 6,500-3,000 B.C.
Late Archaic - 3,000-1,000 B.C.
Early Woodland - 1,000 - 500 B.C.
Middle Woodland - 500 B.C. - A.D. 900
Late Woodland - A.D. 900-European Contact

Phases are much shorter time blocks within each period.

The major use of the site was during the Holmes phase of the Late Archaic (this phase is named after the late 19th-early 20th century Smithsonian archeologist William Henry Holmes) and is defined by a spear point with an elongated, rather narrow blade and a straight to slightly contracting stem to which the spear shaft was attached. Types of

containers which have been recovered at this period include bowls made of a soft stone called steatite, also known as soapstone. Other aspects of the preserved tool kit include drills, scrapers, awls, knives, axes, etc. The full range of tools and equipment is only found at base camps, which were used as living sites for a relatively long period of time, e.g. four to six months; these were settlements at which a variety of everyday tasks were carried out as part of the routine of daily life. Significantly, the tool range at 44AX177 is limited, indicating that this was not a base camp, but rather it was more of a special activity site.

After 2,000 B.C. when the Holmes phase was beginning, the climate was ameliorating somewhat from the extremely hot and dry conditions of the Xerothermic, the warmest climatic episode in the paleoclimatological record since the last interglacial at 36,000 years ago. The Xerothermic was the culmination of a warming trend that began at the end of the last Ice Age, about 12-10,000 years ago. At the time Holmes phase groups were in the Greater Washington area, sea level had risen considerably since the end of the last glaciation, the Chesapeake Bay had been established, and the Potomac River valley had been drowned with tidal limits reaching where they do now, just above Georgetown.

The warmth, dryness, and sea level rise were all important for the early Indians to develop a focus on fishing in the Upper Potomac Coastal Plain, for in the stabilized marine and estuarine environments, anadromous fish (those seeking fresh water in which to spawn) radiated in great numbers. With Great Falls acting as a barrier to upriver migration, the Upper Potomac Coastal Plain during the spring was teeming with sturgeon, herring, perch, shad, and bass. From mid-March to early June, the river banks were occupied by prehistoric Indians harvesting this abundance of fish. The evidence for this activity is the literally thousands of Holmes style points housed in the Smithsonian collection. While most of the fishing sites of this era have been destroyed, a number have been studied. Most of these are base camps located directly along the shoreline or just upstream from the tidal reaches of tributary streams where the fish could be easily procured. One complex of these sites, located on the Maryland shore, has been studied. What archeologists do not know much about is what else the Holmes phase populations were doing when they were not taking advantage of the fish runs. This is where the importance of the work at 44AX177 comes in.

Decades ago, William Henry Holmes worked along Rock Creek in the District of Columbia; he was studying cobble quarries. These cobbles, deposited millions of years ago by an ancient river, were extensively used by prehistoric Indians, most intensively during the Holmes phase. These early fishermen collected the cobbles, shaped them into preforms, and then transported them back to the fishing stations where they were fashioned into spear points used to assist in procuring fish.

It was not until the work associated with the Stonegate project was carried out that contemporary archeologists were able to investigate one of these preliminary stone tool fashioning sites in detail. With the results of this work, we now have a more complete picture of what was going on nearly four thousand years in the past.

Dramatizing somewhat, the Indians, presumably mostly male, visited the stream beds which course through these cobble deposits and collected the stones. They had a strong preference for quartzite (a kind of metamorphosed sandstone), transported from the Blue Ridge to the west of the site by river action millions of years ago. The Indians deliberately selected elongated cobbles, which were close to the shape of the weapons they were going to make. At 44AX177, these cobbles went through the first shaping at a place alongside a nearby stream (today this stream flows along South Van Dorn St.), then were carried up a hill to a large flat where the spear points and other tools were completed. While there, the

Indians built camp fires, possibly for warmth, or for cooking their meals, or for safety. They did not do much else other than make these points, or at least as far as the archeologists can tell from the artifacts that were left behind.

How many people were there at the site? How many visits did they make to the site? These are not questions which can be answered on the basis of our present knowledge. What we are able to infer is that after making the points, the prehistoric groups went back to the tidal estuaries where they used the spear points on fish.

Although population numbers cannot be derived from the data, a number of spatially separate concentrations were observed suggesting, perhaps, that loci of individual or group (family?) activity areas were recovered. These most likely represent periodic visits to the site over the 600 or so years of the Holmes phase.

The archeological work involved at the site included the excavation of 108 one meter square units. Over 17,000 artifacts were recovered from the site, including 1,108 fire cracked rocks which may suggest a cold weather occupation. Interestingly, these were all of sandstone--a logical choice, for heated quartzite tends to explode, sending spalls of stone flying through the air--a rather dangerous occurrence!

A staggering 11,827 waste flakes (debitage) were recovered. Of course in making stone tools the amount of debitage per finished product is enormous. In addition to the debitage, one hundred quartzite bifaces were also recovered. The Holmes phase Indians went through a sequence of flint knapping stages, leading from the initially modified cobbles to the finished point. Both sides of the stone--hence the term biface--were shaped in making points. For various reasons, flaws in the rock or mistakes in knapping can lead to a bifacial shape which cannot be carried further to make a finished point. As a result, the mistake is discarded. After all, these people were close to their raw material and could afford the luxury of throwing away what they didn't find to be satisfactory. Also found were three quartzite scrapers, two quartzite drill fragments and one quartzite knife. This is a very low number of tools which speaks of the limited activities taking place at the site.

Holmes phase populations possessed an almost singular preference for quartzite. Not so for the early Halifax phase groups who, in contrast, strongly preferred quartz. Although for expedient purposes either groups would use some other raw material, given choice they selected for their preferred lithics. Of the 3,924 quartz artifacts found, 3,883 were debitage, 27 were bifaces, five were cores, one was a flaked pebble, four were scrapers, and one was a drill. We assume most if not all of these were left behind by Halifax phase groups. Supportive of this conclusion is that the three Halifax points (which are side notched in the stem area) were made of quartz. These points have been extensively resharpened and were no doubt taken off the spear shaft, discarded and replaced by new ones.

The climate during the Halifax phase (from 3600-2500 B.C.) became increasingly warmer as the Xerothermic reached its peak. Halifax groups, however, were not particularly river or estuary oriented. Indeed, they seemed to have been seasonal nomads moving across and exploiting the natural food resources as they ripened. Because of the relatively low number of sites around the fishing areas (compared to the Holmes phase), it is assumed the anadromous fish had not reached their maximum numbers. We also note a difference in how these people used the site. In addition to choosing a material other than quartzite, the Halifax groups brought their quartz cobbles and chunks up to the site and made their tools and points (discarding heavily used ones) on the spot rather than waiting until they returned to a base camp to finish the points as the Holmes populations did.

Other lithic materials recovered include hornfels, chert, jasper and rhyolite. Rhyolite is the only material which could not occur in the immediately local area in cobble form. For rhyolite to appear at the site, it would have to have been carried from the area around Harpers Ferry, West Virginia, and Frederick, Maryland. Given the small size of the rhyolite flakes, which suggests resharpening instead of the making of tools, the material was brought in by wandering hunters and gatherers as finished spear points and other tools.

The same may be said of the single Late Woodland triangular point which was found. Late Woodland groups had adopted agriculture by A.D. 900. However, they continued to hunt, now using the bow and arrow instead of spears. Historic accounts describe a practice in which many villages were almost completely abandoned after the corn was planted, with the residents returning before the harvest. Hunting treks out from their river base villages were also probably common. The single point may tell the tale of "a poor shot" or a wound to an animal which ran away only to die alone in the forest.

A second nearby site, 44AX176, was studied along with 44AX177. Only 26 artifacts were recovered from the one meter squares and excavations were halted because of the low artifact counts and lack of any significant information being recovered. This site seems to have been a peripheral activity area associated with the lithic reduction activities occurring at 44AX177.

ABSTRACT

Phase III data recovery excavations were conducted at the prehistoric component of 44AX177 and 44AX176 in the City of Alexandria, Virginia. This work was carried out by Thunderbird Archeological Associates, Inc. for the Virginia Division of Pulte Homes during August and September of 1995. The sites had been previously investigated by International Archaeological Consultants, Inc. at the Phase I and Phase II levels and had been determined to be eligible for nomination to the National Register of Historic Places, necessitating the Phase III work. The Phase III investigations revealed 44AX177 to be a secondary lithic reduction station which had four components: Middle Archaic Halifax (circa 3000 B.C.), Late Archaic Holmes (1200-1800 B.C.), post Holmes (post-1800 B.C) and Late Woodland (post-A.D. 900). Based on the preponderance of quartzite and Holmes preforms and unfinished projectile points, most of the artifacts at the site appear to date to this time period. Usage of the site during the post Holmes and Late Woodland periods appears to have been transient during a brief exploitative foray. The site function during the Halifax phase is unclear. Although a number of quartz artifacts were recovered, no Halifax preforms or unfinished points were found. The quantities of fire cracked rocks found at the site may suggest a cold weather occupation.

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INTRODUCTION

This report represents the results of Phase III data recovery excavations at 44AX176 and 44AX177 located in Alexandria, Virginia. The work was conducted in connection with the development of Stonegate, Parcel C. The larger portion of 44AX177 is prehistoric and consists of a lithic reduction station which primarily dates to the Holmes phase (circa 1800-1200 B.C.) of the Late Archaic time period. The historic period component consists of artifacts associated with a possible log structure dating to the early 19th century. A report on this site has also been written (Gardner et al 1996). Area C (44AX176) was defined as an inland cluster with a high tool to debitage ratio. Phase III data recovery work was only conducted within the prehistoric component at 44AX177 and at 44AX176. The results of the Phase II investigations at the historic component are contained within a separate report (Gardner et al 1995). The work was conducted by Thunderbird Archeological Associates, Inc. (TAA) of Woodstock and Winchester, Virginia for the Virginia Division of Pulte Homes, Fairfax, Virginia.

Fieldwork was carried out from August 1995 through September 1995. The site was discovered previously by Robert Adams, of International Archaeological Consultants (IAC), who conducted Phase I and partial Phase II investigations within the site area. During the Phase III investigation reported here, William M. Gardner, Ph.D., was Principal Investigator. Tammy L. Bryant was Field Supervisor. Damian Gessner, John Mullens, Antonia Davidson, Michael Petrakis, James Blevins, Jeffrey Davis and Christoph Bachhuber served as Field Crew. Joan M. Walker served as Contracts Manager and edited the report. Kimberly A. Snyder was Laboratory Supervisor and Gwen Hurst conducted limited archival research and did the glass analysis. C. Lanier Rodgers and Kimberly Weinberg served as Lab Crew.

The primary focus of the Phase III investigations was to gain information about horizontal integrity, to determine site function, to determine if intact features were present and to determine the temporal affiliation of the sites.

The archeological investigation was conducted in order to comply with the City of Alexandria Archeological Protection Ordinance No. 3413 which governs the protection of potentially significant historic properties. Fieldwork and report contents conformed to the guidelines set forth by the Virginia Department of Historic Resources (VDHR) for a Phase II investigation as outlined in their 1992 "Guidelines for Preparing Identification and Evaluation Reports for Submission Pursuant to Sections 106 and 110, National Historic Preservation Act, Environmental Impact Reports of State Agencies and the Virginia Appropriation Act, 1992 Session Amendments" as well as the "1990 City of Alexandria Archaeological Standards" and the "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation". The purpose of the investigation was to mitigate the effects of the proposed construction and to gain sufficient information about the sites in order that a determination of no effect could be made.

All artifacts and field data resulting from this project will be on repository at the Alexandria Archeology Office located in the Torpedo Factory in Alexandria, Virginia.

ENVIRONMENTAL SETTING

The project area is located at or near the interface of the Inner Potomac Coastal Plain and the Outer Piedmont. The sites are situated on a marine terrace; marine terrace gravels are present on the surface and in the soils. They are located in an upland wooded area within the limits of the City of Alexandria, on Braddock Road on the west side of Shirley Highway (Interstate 395) just before Braddock Road passes under the interstate (Figure 1).

FIGURE 1
Portion of USGS Alexandria, VA 7.5' Quadrangle
Showing 44AX176 and 44AX177

The sites sit between Holmes Run and Four Mile Run; both waterways are tributaries to the Potomac River. The immediately local drainage is an unnamed first order tributary of Lucky Run which drains ultimately into Four Mile Run which, in turn, empties into the Potomac River.

Topographically, the sites are on a flat with a low gradient which slopes eastward toward Braddock Road. The area is covered with planted pines about 30-40 years in age as well as white and red oak, pin oak and beech trees which are similar in age (Plates 1 and 2). There is one oak tree in the southern portion of the site which is on the order of 100-150 years old. Based on the elevation of the soils around the base of the tree compared to the surrounding soils, a minimum of 2.0 feet of soil deflation has occurred as a result of cultivation and earlier deforestation.

Vegetation in the area at the beginning of the historic period was a mixture of white oak, pine and hickory. Plantation agriculture reached the area in the early part of the 18th century. In connection with this, the forests were cleared and field cultivation occurred. This resulted in a massive erosional cycle and concomitant erosion and deflation of the uplands. Nearby Fort Ward was constructed in 1861. Figure 2 presents a Civil War era map which shows the cleared areas. As a fort guarding the nation's capitol, long distance vision would have been essential and any remaining forests would have been cleared.

Following the Civil War, landholdings were reduced and smaller scale farming prevailed. Residential development increased somewhat during the late 19th and early 20th centuries. During World War II and the years following, the area began to move into the orbit of suburban Washington, D.C. This has accelerated during the past 30 years. Based on the size of the trees, the project area was farmed as late as 50-80 years ago. A pine plantation was planted circa 30-40 years ago.

CULTURAL HISTORICAL BACKGROUND

The following presents an overview of the prehistoric cultural history of the area. The historic overview and historic period property ownership are presented in a separate report (Gardner et al 1995).

Johnson (1986) divides the prehistoric chronology and adaptive patterns for the general area into the following (modified here slightly from the original):

Paleoindians or First Virginians	Foraging	circa 9500-8000 B.C.
Hunter-Gatherer I	Foraging	circa 8000-6500 B.C.
Hunter-Gatherer II	Foraging	circa 6500-4000 B.C.
Hunter-Gatherer III	Foraging	circa 4000-3000 B.C.
Hunter-Gatherer IV	Collecting	circa 3000 B.C.-A.D. 800
Early Agriculturalist	Collecting-Gardening	circa A.D. 800-1500/1600

Gardner's (c.f. Barse and Gardner 1982, Gardner 1980, 1985, 1987, 1989; see also Walker 1981) perspective varies somewhat:

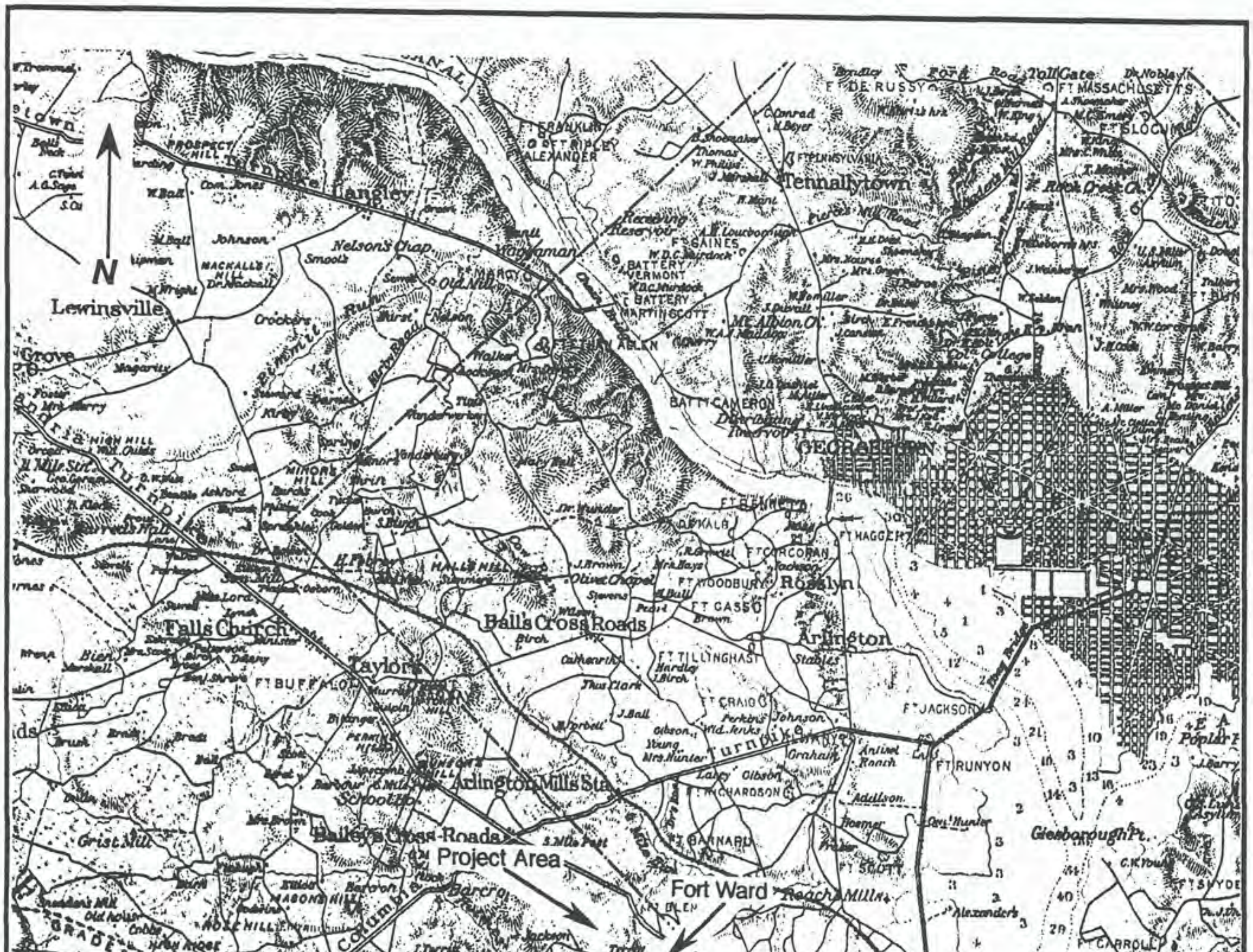


FIGURE 2
Portion of Surveys for Military Defenses Map of Northeastern Virginia and Vicinity of Washington (Davis et al 1983, Plate VII)

PREHISTORIC CHRONOLOGY
(Revised from Gardner 1980)

(Years B. P.)

Episode	Phase (projectile point)	Year B. P.
		Paleoindian
Late Glacial	Fluted (Clovis)	11,500
(-10,030)	Fluted (Mid-Paleo)	11,000
	Fluted (Dalton)	10,500
	Early Archaic	
Pre-boreal	Corner notched (Palmer)	10,000
(10,030-9,300)	Corner notched (Kirk)	9,500
Boreal	Side notched (Big Sandy-like)	9,200-9,000
(9,300-8,490)	Side notched (Kirk)	9,000
	Stemmed (Kirk)	9,000
(Transitional)	Bifurcate base (Lecroy)	8,500
		Middle Archaic
Atlantic	Stemmed (Stanly)	7,500
(8,490-5,060)	Contracting stemmed (Morrow Mountain I)	7,000
	Contracting stemmed (Morrow Mountain II)	6,500
	Lanceolate (Guilford)	6,000
	Corner/side notched (Halifax/Brewerton)	5,500
		Late Archaic
Sub-boreal	Stemmed (Savannah River)	5,000-4,500
(5,060-2,760)	Corner notched (Susquehanna)	5,000-4,500
	Stemmed (Holmes)	3,500-3,000
	Side notched (Hellgrammite)	3,500-3,000
	(At this point, the chronological emphasis shifts to ceramics)	
		Early Woodland
	Soapstone temper (Marcey Creek)	3,000
	Soapstone temper (Seldon Island)	3,000
Modern	Sand temper (Accokeek)	2,750
(2,760-Present)		
		Middle Woodland
	Crushed rock/grit temper (Popes Creek)	2,500
	Shell temper (Mockley)	2,100
		Late Woodland
	Shell temper (Townsend/Rappahannock)	1,100
	Grit temper (Potomac Creek)	700

The major prehistoric time periods of import are: the Paleoindian-Early Archaic (circa 9200-6700 B.C.; the Archaic, circa 6800-1800 B.C.; the Transitional/Early and Middle Woodland, circa 1800 B.C.-A.D. 900; and the Late Woodland, circa A.D. 900-1600.

The first of these represents the period of initial human occupation of the region. Sporadic Paleoindian finds are reported on the Potomac, particularly around Bennings, just above the junction of the Anacostia and the Potomac, and along the Accotink and the Occoquan, but, overall, spearpoints of this time are uncommon in the local area (Gardner

1985). Early Archaic components show a slight increase in numbers, but it is during the Middle Archaic (Morrow Mountain and later) that prehistoric human presence becomes relatively widespread (Gardner various; Johnson 1986; Weiss-Bromberg 1987). Whereas the earlier groups appear to be more oriented toward hunting and restricted to a limited range of landscapes, Middle Archaic populations move in and out and across the various habitats on a seasonal basis. Diagnostic artifacts from upland surveys along and near the Potomac show a significant jump during the terminal Middle Archaic (e.g. Halifax) and beginning Late Archaic (Savannah River).

The most intense utilization of the region begins circa 1800 B.C. with the advent of the Transitional Period and the Savannah River Broadspear derivatives, which include the Holmes and other related points. In models presented by Gardner, this is linked with the arrival of large numbers of anadromous fish. These sites tend to be concentrated along the shorelines near accessible fishing areas which are up the tributaries to points above where these tributaries begin to constrict. The adjacent interior and upland zones become rather extensively utilized as adjuncts to these fishing base camps. The pattern of using seasonal camps continues. The same essential settlement pattern continues throughout the Early and Middle Woodland. The post-A.D. 900 Late Woodland change is precipitated by the advent of agriculture and, between A.D. 1350 and 1600, scattered agricultural hamlets coalesce into larger sites such as that at Accokeek Creek (Stephenson et al 1963) and at Potomac Creek (Schmitt 1965).

The cultural diagnostics listed in the table above are simplified. For instance, Early Archaic side notched points are more common in the western part of the Middle Atlantic. There is also a formal overlap between terminal Middle Archaic side notched forms such as Brewerton and Halifax and the Early Archaic Side notched types. The possibility also exists of overlap between either of these, particularly Halifax/Brewerton, and the presumed Early Woodland Vernon Side Notched. Indeed, it is not even clear if the latter exists. Projectile point types certainly become more diverse in the Late Archaic. For instance, the large Savannah River Stemmed point can have an expanding stem, a straight stem, or a contracting stem. The same holds true for the derivative and later Holmes or small Savannah River Stemmed. By this latter period, circa post-1800-1200 B.C., the Fall Line of the Potomac appears to be a stylistic divide between the Piedmont oriented Susquehanna-Dry Brook-Fishtail-Vernon (?) sequence and the Savannah River Stemmed-Holmes-Calvert evolution.

Another mis-identification can occur between smaller versions of the contracting stem Morrow Mountain point and the Early Woodland Rossville/Piscataway. A similar error in identification can happen between the contracting stem large Savannah River (which seems to be post-1800 B.C.) and Morrow Mountain.

Ceramics present less of a complex scene. The earliest ceramic series in the Piedmont and Upper Potomac Coastal Plain are the steatite tempered Marcey Creek Plain followed by Seldon Island Cordmarked, which is also tempered with steatite particles. The third phase of the Early Woodland is marked by the sand tempered Accokeek ware. Point styles vary, but include the Holmes point and other stemmed variants descending from Savannah River Stemmed, as well as Orient Fishtail and Hellgrammite which develop out of the Susquehanna Broadspears. The previous stylistic boundary in projectile points at the Fall Zone seems to continue although all of the ceramics cross this boundary. Shell middens become evident by Early Woodland III in the Lower Potomac Coastal Plain where the water was of sufficient salinity to support oyster populations.

The period after 500 B.C. is marked by the appearance of Albemarle Net Marked in Potomac Piedmont and Ridge and Valley and the related Popes Creek Net Impressed in the

Coastal Plain. Shell tempered Mockley ware marks the Coastal Plain circa A.D. 200. The Potomac Piedmont may have been all but abandoned at this juncture. Point styles associated with the earlier ceramic phases are in the Rossville-Piscataway contracting stemmed genre. These are succeeded by small stemmed and notched points.

By A.D. 900, refined crushed rock tempered ceramics in the Albemarle/Shephard ware category show up in the Potomac Piedmont. In the latter part of the Early Agriculturalist period, limestone tempered and shell tempered (Keyser series) pottery successively dominate the areas along the Potomac from the Ridge and Valley through to the mouth of the Monocacy and the Fall Zone. In the Upper Potomac Coastal Plain, the Townsend/Rappahannock series evolves out of the Mockley series to be replaced circa A.D. 1350 by Potomac Creek. The groups associated with the Potomac Creek ceramic series appear to have evolved out of the Montgomery Focus in the Piedmont, only to have been pushed out by expansionistic groups in the interior. Triangular points are the norm for the entire Early Agriculturalist period. These groups appear to have been full time residents practicing agriculture. Village and hamlet locations were around the mouths of creeks, contiguous with broad floodplain locations; in this area at the mouths of streams with good agricultural soil along the Potomac. The non-riverine or non-estuarine Woodland sites were short term occupations related to general foraging components of the subsistence system (c.f. Gardner 1982, 1985, Weiss-Bromberg 1987, Cissna 1990).

In early historic times, Indians were no longer resident, even along the Potomac, in most of the area at the time of Euroamerican settlement, although they were present in the area for the period up to circa A.D. 1700. The Dogue, who were related to the Piscataway, are generally considered to be the indigenous occupants of the region. The Potomac Piedmont may well have been vacant--a kind of no-man's land.

Most of the functional categories of sites away from major drainages are those of small base camps, transient camps, limited purpose camps and quarries. Site frequency and size vary according to a number of factors, e.g. proximity to major river or streams, distribution of readily available surface water, and the presence of lithic raw materials (Gardner 1987). The pattern of seasonally shifting use of the landscape begins circa 7000 B.C., when seasonal variation in resources first becomes marked. By 1800 B.C., runs of anadromous fish occur and the Indians spent longer periods of time along the estuarine Potomac (Gardner 1982, 1987). It is possible that some horticulture or intensive use of local resources appears between 1200-500 B.C. for, at this time, the seasonal movement pattern is reduced somewhat (Gardner 1982). However, even at this time and during the post-A.D. 900 agriculture era, extension of the exploitative arm into the upland and inter-riverine areas through hunting, fishing and gathering remained a necessity.

PREVIOUS ARCHEOLOGICAL WORK

Archeological investigations have been conducted within three separate areas within a 22 acre portion of the proposed Stonegate development. The earliest investigations were conducted by IAC in 1992 and 1993 within Parcels A, B and D (Adams et al 1993). This study revealed that Parcels A and B contained a prehistoric site (44AX166) and an historic site (44AX167). No cultural resources were found in Parcel D (Adams et al 1993:1).

Additional archeological work in Parcels A and B revealed that the historic site (44AX167) contained the remains of two residential structures as well as an outbuilding. One of the residential structures was 20th century and the other was constructed in the mid 19th century (ibid). Testing at the prehistoric site (44AX166) yielded data on three concentrations of lithic debitage, dating to the Late Archaic time period. These concentrations were secondary lithic reduction stations geared to biface reduction and the

manufacture of projectile points (Adams et al 1993:2). Two possible hearth features were also present.

In addition to the parcels discussed above, two storm drain outfalls and part of an area proposed for a storm water retention pond were also examined. A portion of small prehistoric period base camp or exploitative foray camp (44AX31), dating from the Late Archaic through Middle Woodland time periods, located in the southwestern storm drain area was studied (Adam's et al 1993:212).

Phase I and Phase II investigations within Parcel C of the Stonegate development were conducted in early 1995 by IAC. No report is currently available on these investigations and the following discussion is based on written material and artifact inventories provided to TAA by Alexandria Archeology personnel and Robert Adams of IAC. The prehistoric artifacts were re-examined by TAA and the results of this analysis are presented in this report.

The IAC Phase I investigation consisted of the excavation of 137 shovel test pits across a 700 x 600 ft. area (Figure 3). Reduced interval testing radiating out from positive shovel tests was conducted. These investigations resulted in the discovery of three artifact concentrations which were designated Areas A, B, and C. Areas A and B are included within archeological site 44AX177 and Area C comprises archeological site 44AX176.

During the IAC Phase II investigations, eleven 1 x 1 meter square units (designated EU 1-11) were excavated around the largest of the artifact concentrations in 44AX177 as revealed by the test pits in the Phase I.

Area A was defined as a diffuse lithic scatter on an upland lobe which measured 2,550 square meters. In addition, there was also an historic component defined as a probable log home with intact associated features which dated to the first quarter of the 19th century. A possible well was also present. The Phase II work by IAC included EUs 3-5, 8-9 and 10-11 (Figures 3 and 4).

The analysis by IAC produced the following:

EU 3: 70 flakes, 20 lithic shatter fragments, the base of a triangular point, a scraper, the distal end of a projectile point, a core, a worn cobble, 50 fire cracked rock fragments, five brick fragments, one historic ceramic sherd, a glass fragment and a nail.

EU 4: 151 flakes, 26 lithic shatter fragments, two modified flakes, 12 fire cracked rock fragments, 16 brick fragments, nine historic ceramic sherds, a nail, an oyster shell fragment and a prehistoric ceramic sherd.

EU 8: 57 flakes, 17 lithic shatter fragments, a modified flake, 21 fire cracked rocks, two historic ceramic sherds, a glass fragment and a smooth pebble.

EU 11: 26 flakes, seven lithic shatter fragments, seven fire cracked rock fragments, an historic ceramic sherd, a glass fragment, a pipe stem fragment and red ochre.

EU 5: 63 flakes, 27 lithic shatter fragments, a modified flake, a unifacial tool, 15 fire cracked rock fragments, 69 brick fragments, 149 historic ceramic sherds, 20 glass fragments, 24 metal fragments, a buckle, a tooth, 140 oyster shell fragments and a pipe stem fragment.

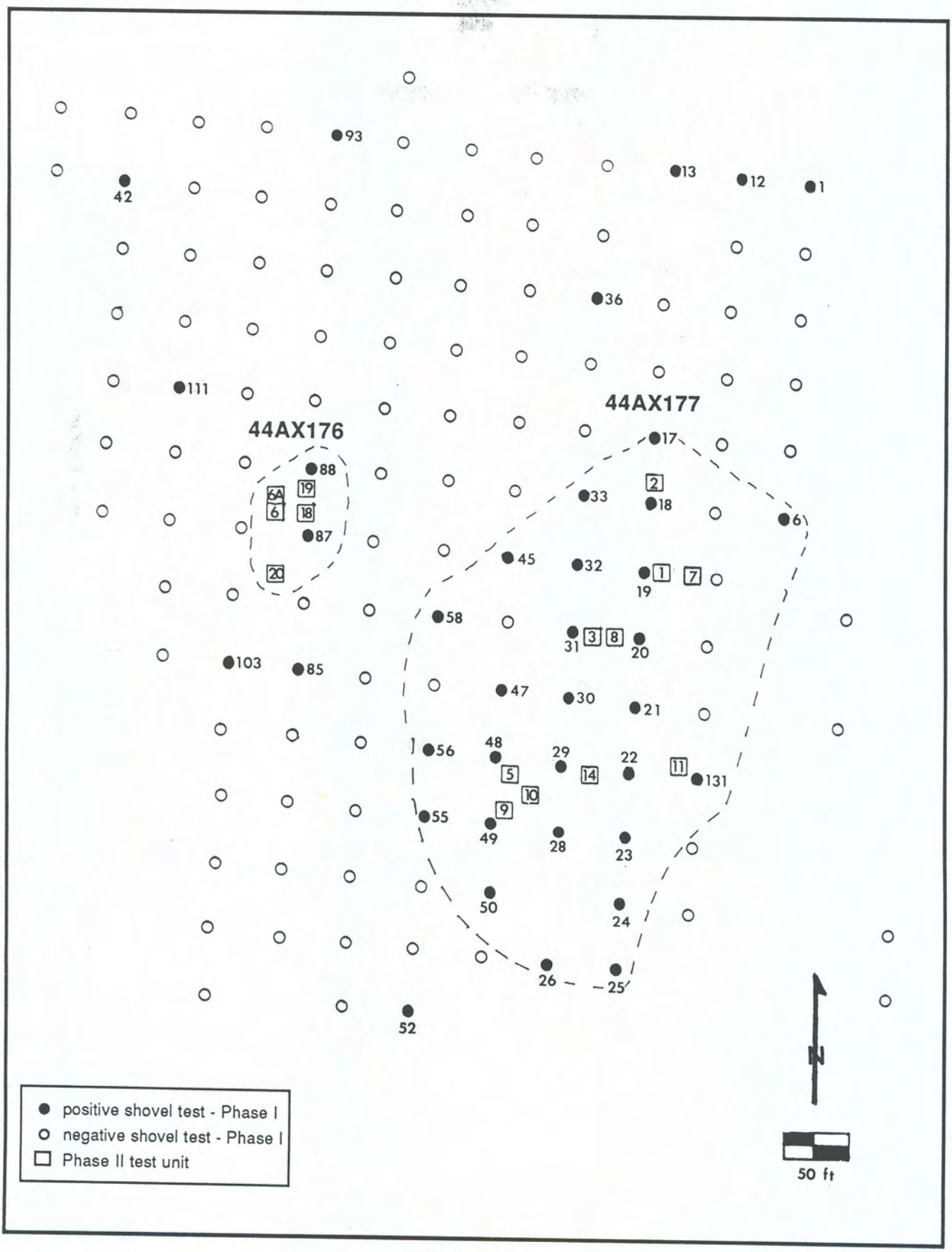


FIGURE 3
Map of 44AX176 and 44AX177 Showing Locations of Phase I and II Test Units

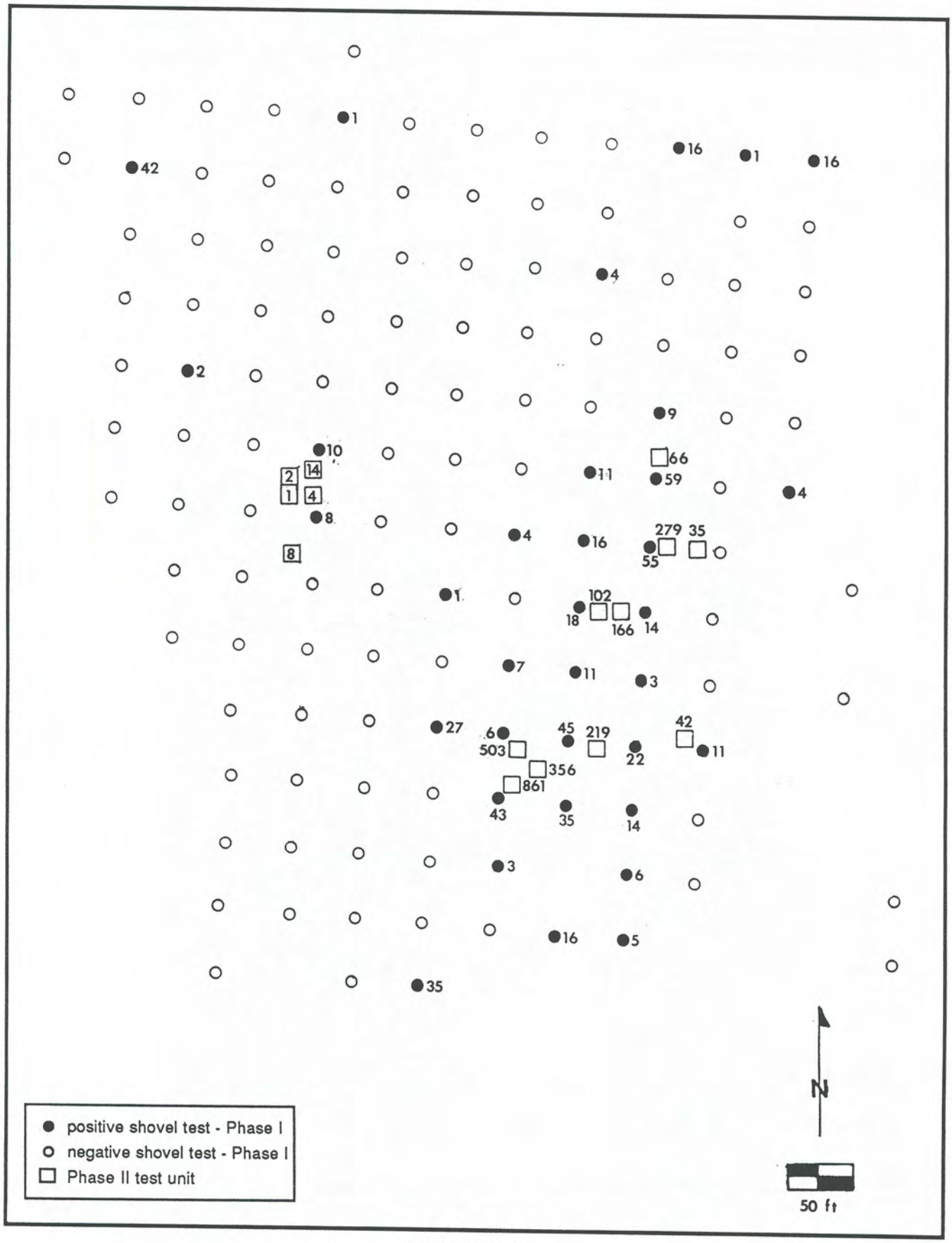


FIGURE 4
Map of 44AX176 and 44AX177 Showing Locations of Phase I and II Artifact Counts

EU 9: 88 flakes, ten lithic shatter fragments, one modified flake, 16 fire cracked rock fragments, 692 brick fragments, seven mortar fragments, 34 historic ceramic fragments, 13 glass fragments, 19 metal fragments, an oyster shell fragment, a brass button, a pipe fragment and two pipe bowl fragments.

EU 10: 40 flakes, 17 lithic shatter fragments, four modified flakes, a thermally altered core, nine fire cracked rock fragments, 38 brick fragments, a mortar fragment, 112 historic ceramic sherds, 31 glass fragments, 26 metal fragments, five bone fragments, 27 oyster shell fragments and an unidentified ceramic fragment.

Area B was defined as a more dense concentration of lithic materials, measuring 818 square meters, around a possible spring. Materials recovered from the Phase I included a number of flakes/tools and a single projectile point.

The Phase II investigations included EUs 1, 2, and 7 (Figures 3 and 4). The analysis by IAC produced the following results:

EU 1: 196 flakes, 23 lithic shatter fragments, a modified flake, a projectile point tip, a scraper, a projectile point midsection, 37 fire cracked rocks, ten historic ceramic sherds, eight metal fragments and a .22 caliber cartridge.

EU 2: 53 flakes, six lithic shatter fragments, a projectile point tip, a core, five fire cracked rock fragments and a smooth pebble.

EU 7: 20 flakes, seven lithic shatter fragments, a biface, six fire cracked rock fragments and a brown pipe bowl fragment.

Adams felt the site had not been plowed and that other disturbances were minimal (Alexandria Archeology personnel, personal communication 1995). As subsequently determined prior to the initiation of the Phase III, this proved to be erroneous. The site had indeed been plowed. The prehistoric site was then determined to be eligible for nomination to the National Register of Historic Places. Data recovery work was deemed to be necessary. The City of Alexandria felt insufficient information was recovered at the historic component and further Phase II study was recommended.

Area C (44AX176) was defined as an inland cluster with a high tool to debitage ratio. The Phase I shovel tests produced quartz debitage, two quartz bifaces, a possible quartz point fragment and part of a quartzite point which dated to the Holmes phase of the Late Archaic. A single Phase II unit was placed at this site. This unit yielded a single fire cracked rock and some burned clay fragments which were originally felt to be red ochre. This site was also determined to be eligible for nomination to the National Register of Historic Places and data recovery work was deemed to be necessary.

In July, 1995, TAA was asked by Pulte Homes to try and determine whether or not the sites had been plowed. To this end, four 1 x 1 meter square units at Stonegate, Parcel C, were excavated.

The TAA investigations concluded that the prehistoric occupation was confined to the plowzone and that intact subsurface features were unlikely to be present in the prehistoric area. The historic area was not investigated by TAA at this time.

The secondary reduction station/tool manufacturing site is not something which has

been isolated in the region for the time period in question except at this location (after the fact, conversations with David Clark who is involved in excavating a Holmes phase site at the lab School in Georgetown, shows that this site fits the tool manufacturing site model) It is known that the post-1800 B.C. Late Archaic represents the biggest population jump in the Greater Washington, D.C., metropolitan area (c.f. Gardner 1977, Weiss-Bromberg 1987) which Gardner has suggested coincides with the rise of anadromous fish. The types of sites which are known are the fish procurement station, the type sites which are 18PR177, 178, 179, which are on small streams just above the tidal limits of Piscataway Creek. A number of smaller and probably similar sites are known for the Virginia Potomac shoreline (c.f. Weiss-Bromberg 1987 for a summary of these) and the Maryland and D.C. shorelines (records on file at American University based on a study by C.W. McNett, Jr., and William M. Gardner 1967-1969). These sites are also probably base camps but, since most all are multi-component (post-1800 B.C.-the Historic period) and most were randomly collected and ill-reported during the late 19th and early 20th centuries it is difficult to be more precise. Inter-riverine and inter-estuarine post-1800 B.C. components are known (c.f. Gardner 1980 and 1987 and Mouer 1991) but, again, most of these sites are multi-component or represent isolated finds. It is likely these sites represent seasonal small group occupations ranging in function from small base camps, to hunting station and lithic scatters.

Most observers (c.f. Mouer 1991) interpret the regional late Archaic as the beginning of a trend away from the earlier intra-zonal, seasonal movement patterns of the preceding phases of the Middle Archaic. This pattern has been established as early as the first part of the Middle Archaic, ca. 6800 B.C. The Late Archaic came on the heels of the Xerothermic climatic interval (ca. 3000-2000 B.C.) which was the hottest and driest climatic episode since the 35,000 year ago interglacial. It has been suggested (Gardner 1980, 1987) that this event reduced the inter-riverine, inter-estuarine, upland biota, while enhancing the riverine/estuarine resources thus leading to a focus of the hunters and gatherers of this time into these localities. The Late Archaic is also interpreted as the period of the initial sedentism. This latter holds true for much of Eastern North America but recently Gardner has begun to have doubts about this and suggests that while the inter-zonal pattern may have been somewhat reduced for certain parts of the year, seasonal movements, especially after the fish runs, were still necessary. With the onset of the Woodland, where storage pits and houses are now being discovered (c.f. McLearen 1991) sedentarism becomes more common.

SITE SIGNIFICANCE AND RESEARCH ORIENTATION

Limited information was available from the Phase I and II since IAS had not produced reports yet. The following, however, was known.

1. The site had been cultivated based on several lines of evidence. This evidence included:

    a) a clear line of separation both in terms of soil color and clay content between the upper zone in the soil profile and the lower zone. If the area had not been plowed, this delineation would be more gradual.
    b) the size and nature of the artifacts. The upper zone in the units contained a mixture of prehistoric and historic period artifacts. The majority of the historic period artifacts were small, often an indicator of plow breakage.
    c) the size and age of the vegetation, most of it less than 50-60 years in age, and the presence of planted pines.

d) the difference in elevation between the root crown of the oldest trees (circa 150 B.P.) and the current ground level signifying considerable soil deflation..

2. At least two components were known to be present: Halifax, dating from the terminal Middle Archaic, or circa 3600-2500 B.C., and Late Archaic II Savannah River derived Holmes points, or circa 1800-1200 B.C. Given the known preference for a restricted range of lithics by groups of each phase, quartz for Halifax, quartzite for Holmes, it was anticipated that differential distribution of these lithics might provide data on internal site use as well as activity differences.

Both sites were determined to be eligible for nomination to the National Register of Historic Places because they had the potential to contribute significant research information. The sites were initially felt to be significant as they represented one of the few remaining areas where intact unplowed prehistoric archeological resources were present within the City of Alexandria. Although later determined to be plowed, it was felt that significant research information may still be gained from the site. For example, although the plowing precludes the vertical separation of components, based on raw material clustering in some areas and the preference for these raw materials during certain temporal periods, horizontal separation of components was thought to be possible.

In addition, the sites were determined significant by the Director of the Office of Historic Alexandria based on criteria established by the zoning ordinance of the City of Alexandria (11-411). These criteria include: research value, rarity, public value, site integrity, presence of materials and impact on resources. The research value of the Stonegate prehistoric sites lay in their ability to provide information about one aspect of the prehistoric settlement system, lithic reduction, particularly during the period 1800-1200 B.C. Rarity and public value were important criteria as few intact prehistoric sites are present within the City of Alexandria because of historic and recent development and land modification. Although the site was determine to have been plowed, thus affecting the vertical integrity, some horizontal integrity remained. This horizontal integrity allowed for the recovery of significant research data. In addition, the planned development would completely destroy the sites and the Phase III excavations allowed for the recovery of significant portion of the research information present at the sites.

The purpose of the excavations was to recover an adequate portion of the data so that the sites could the be destroyed and a determination of no adverse effect could be issued. Both sites were slated for destruction by construction activities associated with a planned housing development.

Prior to the initiation of the Phase III study and based on the above, the following research goals were formulated:

1. To determine if horizontal integrity remained at the site
2. To determine the function of the site
3. To determine if features might be present
4. To determine if any other components other than Savannah River/Holmes and Halifax were present.
5. To determine what, if any differences would be evident in use of the site by the different components.

At the onset of investigations, because of the virtual absence of data from the Phase I and II reports, it was unclear what was to be expected. Based on the

information from the earlier investigations in other areas of the Stonegate development, it was hypothesized that one of the major activities at the site would be reduction of cobbles. The existence of secondary lithic reduction/tool manufacturing stations as a separate functional site entity was not a concept which had been explicitly formulated for this period prior to the investigation: hence Item 2 above.

METHODOLOGY

The Scope of Work which governed the Phase III methodology at 44AX177 and 44AX176 was developed in consultation with Alexandria Archeology personnel. The work was to consist of the excavation of 100 meter square units. Most of the units were to be placed in block excavations around the artifact concentrations found during the Phase II work. Block excavations were used as it was felt that this would maximize information recovery because they would provide the greatest horizontal exposure. One hundred and eight units were actually excavated.

The purpose of the Phase III excavations was to determine if horizontal artifact concentrations could be defined across the site area even though the site had been plowed. It was hoped that clustering of raw material preferences, e.g. quartzite vs. quartz or different activity areas would be present across the site. In the following discussion, the IAC Phase II units are designated as EU# and the TAA Phase III units are designated as TU#.

A north-south grid system was established which included both 44AX177 and 44AX176. This system did not mesh with the system previously used by IAC. When a TAA block excavation unit was placed contiguous to one of IAC's squares, the squares were placed according to the north-south grid system and not the IAC grid.

One hundred and eight 1 x 1 square meter units, some isolated, others arranged in block excavations, were excavated immediately adjacent to the previous units from the Phase II investigation or in areas where lacunae existed in the subsurface investigations. The block excavations were labeled according to the Phase II unit that they abutted.

Five excavation blocks were excavated at the site: Blocks 1, 3, 4, 12, 14, and 15. The number of units excavated in each block are:

Block 1 - 15 units: TUs 1A-1O
Block 3 - 4 units: TUs 3A-3D
Block 4 - 10 units: TUs 4B-4I
Block 12 - 4 units: TUs 12-12C
Block 14 - 30 units: TUs 14-14CC
Block 15 - 22 units: TUs 15-15U

Block excavations were not conducted in all areas. The non-contiguous excavation units were numbered sequentially beginning with TU 13 because EU 11 was the last unit excavated during the Phase II. TUs 13-38 were scattered at various locations. As with the block excavations, these units were placed to define the site boundaries and/or different temporal or functional activity areas. Because of the resulting low artifact count in these units, additional contiguous squares were not opened.

Reasons for placement of the units varied. Block excavations were placed in areas with high artifact concentrations, with the excavation block being expanded in the direction of the highest artifact counts. Single units were placed between the block excavations to determine the number of artifacts present between the block excavations or to determine if

functionally/temporally discrete areas were present.

All units were excavated by removing the Ao and Ap horizons together in one level and the E horizon separately. The E horizon was not removed in all units as artifact counts decreased dramatically and the artifacts were generally at the small end of the size range. Both observations indicated the artifacts in the E horizon were the result of downward movement through various kinds of pedoturbation. Originally, the E horizon was to be excavated in 10% of the units. However, after the E horizon was excavated in several units and after consultation with Alexandria Archeology, this was abandoned. Only one unit was excavated into the B horizon.

Excavation was done with a flat shovel; the floor at the interface with the E horizon was scraped in order to detect stains or other subsurface features that may show up at the Ap/E interface. All units were screened through 1/4 inch mesh screen and bagged by horizontal units. Artifacts were bagged and labeled by unit number and by soil horizon. Soil profiles were made of representative units and the colors were recorded using the Munsell Color Chart.

All artifacts were cleaned, inventoried, and curated according to Alexandria Archeology curation standards. At the request of Alexandria Archeology, a type collection of artifacts was established.

The prehistoric artifacts were classified by cultural historical and functional types and by lithic raw material. All tools were identified in terms of established types--scrapers, bifaces, spear points, etc. Prehistoric lithics were separated according to type and were analyzed according to the following:

whole flakes
length, width, thickness on the above
partial flakes (basal, medial and distal)
overshot flakes
hinge fractures
cortex
number of flake scars (used with other variables to determine the stage of manufacture at which the flake was removed)
thermal alteration
lithic raw material type
tool types
cultural historical types for points
evidence of resharpening (curation) of points (and tools)
biface stage (if a reduction strategy is employed)
cores (types if information available)
partial cores.

Presence of cortex refers to cobble cortex only, bedding lines were not considered to be cortex. An artifact, particularly one of quartz, which does not exhibit flake morphology, appears to have 1 or 2 flake scars, is not obviously non-cultural or is of sufficiently high quality that it may have been culturally modified, has been termed a chunk.

Bifaces were separated into stages - early, middle, late and unfinished points. With some exceptions, a biface was considered to be early stage if it had cortex or had not been particularly reduced. Bifaces which can be placed in the middle stage category have begun to be thinned and shaped and generally do not have cortex. An exception to this is when the biface has been thinned but may contain a hump with cortex which could not be

removed and the biface was discarded. Late stage bifaces are thin. Unfinished points are those late stage bifaces which have been somewhat shaped into points.

In order to discover horizontal distribution patterns, several base maps plotting selected variables were constructed.

Historic artifacts were separated into four basic categories: glass, ceramics, metal and miscellaneous. The ceramics were identified as to ware type, method of decoration, vessel type (if possible) and separated into established types. The dates from the ceramics were based on Miller's (1980, 1991 and 1992) refinement of South's (1977) types. The glass was examined for color, method of manufacture, function, etc., and dated primarily on the basis of method of manufacture, when the method could be determined. The dates for manufacturing methods are based primarily upon the patent dates for individual technological advances. Metal and miscellaneous artifacts were generally described; the determination of a beginning date was sometimes possible, as in the case of nails.

The primary excavation constraint was the dryness of the soils.

RESULTS OF THE FIELDWORK

44AX177

As stated previously, the Phase III excavations were designed to determine site function, to detect temporally distinct areas (if any were present), to detect functionally different activity areas and to locate features.

The soils at the site varied little. A representative profile of the site is as follows (Figure 5):

Ao horizon: 0-5 cm (0-2 inches) below surface - [10YR 3/2] very dark gray brown silt
Ap horizon: 5-24 cm (2-9.5 inches) below surface - [2.5Y 7/4] pale yellow very compact silt
E (A2) horizon: 24-35 cm (9.5-13.8 inches) below surface - [10YR 5/6] yellowish brown very hard compact silty clay
B2 (probably B2t) horizon: 35 cm-base of excavation (13.8 inches+) - [10YR 5/8] yellowish brown silty clay with rounded pebbles

In the dialogue below, the excavation blocks are discussed in the order in which they were excavated. All of the artifacts from the Phase II excavations in the discussion are from TAA's re-analysis of the Phase II artifacts excavated by IAC. As stated earlier, the IAC Phase II units are designated as EU# and the TAA Phase III units are designated as TU#. Distribution maps for all units are included as Appendix I.

Excavation Block 1

Block 1 was located around IAC EU 1 (Figure 5). The Phase II investigation yielded 246 flakes, eight fire cracked rocks, a unifacial scraper, and a middle stage biface fragment. During the Phase III, 15 units were excavated in a block around EU 1. These were designated TU 1A through TU 1O. Three of these, TUs 1A, 1C, and 1D, were excavated into the E horizon.

Table 1 shows the total number of artifacts from these units. Three thousand three hundred thirty two quartzite flakes and chunks, 35 quartzite bifaces, a quartzite scraper, a

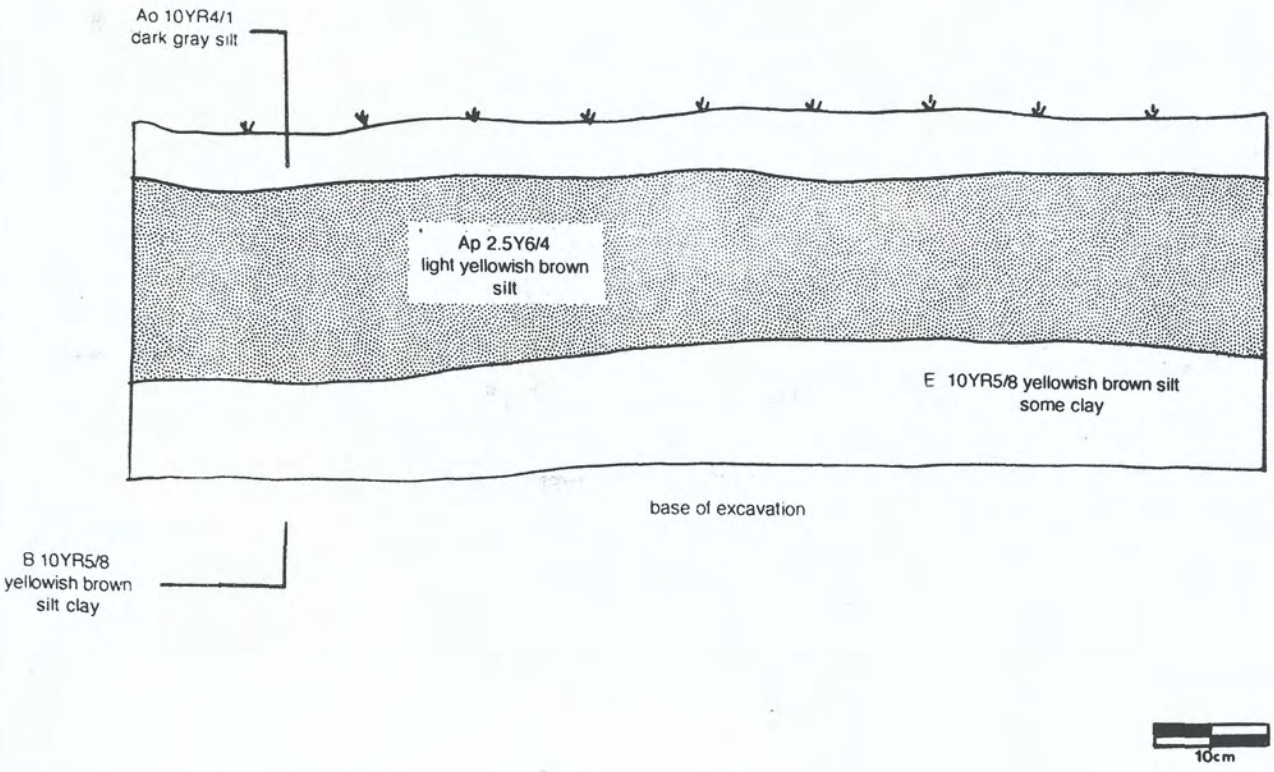


FIGURE 5
Representative Soil Profile, 44AX176 and 44AX177

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
EU 1	228	0	1	18	0	0	0	1 qtx scraper	8	256
TU 1A	555	5	6	34	23	1		0	1	625
TU 1B	293	1	2	26	18	0		0	6	346
TU 1C	584	0	6	42	8	0	5 rhyolite	1 qtx drill	28	674
TU 1D	324	6	1	90	8	0	4 rhyolite	1 qtx drill/punch	0	434
TU 1E	171	0	4	15	0	0	0	1 qtz core	20	211
TU 1F	154	0	4	43	0	0	0	0	17	218
TU 1G	159	3	1	40	0	1	1 rhyolite	0	18	223
TU 1H	154	0	3	5	1	0	0	0	7	170
TU 1I	117	0	3	9	0	0	0	0	5	134
TU 1J	168	1	1	10	3	0	0	0	15	198
TU 1K	93	0	0	2	0	0	1 rhyolite	0	5	101
Surface-										
TU 1L	0	0	1	0	0	0	0	0	0	1
TU 1L	96	0	2	2	0	0	0	0	3	103
TU 1M	105	0	0	9	5	0	0	0	10	129
TU 1N	28	0	0	7	2	0	0	0	3	40
TU 1O	87	0	0	11	0	0	0	0	14	112
TOTAL	3316	16	35	363	68	2	11	4	160	3975

Qtx = quartzite
Qtz = quartz

TABLE 1
Excavation Block 1 Summary

quartzite drill fragment, a quartzite drill/punch, 431 quartz flakes and chunks, two quartz bifaces, a quartz core, 11 rhyolite flakes, and 160 fire cracked rock fragments were recovered from the units in Block 1. The bulk of the material recovered from this block was within a 2 x 3 meter (6.6-9.8 foot) area, in TUs 1A, 1B, 1C, and 1D. In these four units, 52% (2079/3975) of the artifacts were recovered. The majority of the fire cracked rocks, again almost 52% (83/160), is in TUs 1C, 1E, 1F and 1G just to the southwest of this activity area. The bulk of the tools, of which there were only four, were recovered from TUs 1C, 1D, and 1E. A large tree to the east of TU 1A precluded excavation in this direction.

Quartzite artifacts (88.34%) far outnumber the quartz artifacts (11.38%) in this block, with the majority of artifacts of both raw materials concentrated in the area discussed above. However, the quartz is somewhat more concentrated in the southern portion of the 2 x 3 meter (6.6 x 9.8 feet) area, in TUs 1C and 1D. There is a small concentration of rhyolite in this area as well. Flakes with cortex were also found in these units; 7.42% of the quartzite flakes had cortex as opposed to 33.56% of the quartz. For the block as a whole, the quartzite flakes averaged 19.63 mm in length and 19.48 mm in width; the quartz averaged 13.57 mm in length and 12.77 mm in length.

Based on the average size for the flakes within a unit, the largest flakes were present in TUs 1J and 1L in the western part of the block and TUs 1I and 1K in the eastern portion of the block. The smallest flakes were found in TUs 1A, 1C and 1F, in the center of the block excavation.

Bifaces are distributed throughout the block with most coming from the central and southwestern portions. All stages of reduction are present, although the majority are late stage bifaces (59.46% or 22/ 37) and point fragments (21.62% or 8/37). Early (10.81%) and middle (8.11%) stages are also present. All of the points that could be typed date to the Holmes phase of the Late Archaic time period or from 1800-1200 B.C.

The distribution maps show the activity seems to be centering around TUs 1A, 1B, 1C, and 1D. The artifact totals show an increase around these units and a decrease as one moves away in any direction. This may represent an activity area within these units which has been displaced by the plow.

Excavation Block 3

Excavation Block 3 is located to the south of Block 1 (Figure 6). This block is adjacent to EU 3 and EU 8, which were previously excavated in the IAC Phase II. The Phase III block excavations for this area included four meter square units, TUs 3A-3D. One unit, TU 3A, was excavated into the E horizon. The units were placed in this location because of the high counts of fire cracked rock found in EU 3 in the IAC Phase II investigations.

Table 2 indicates the artifact counts within Block 3. As can be seen from the table, Block 3 yielded 97 quartzite flakes and chunks, a single quartzite biface, 368 quartz flakes and chunks, a single quartz biface, a flaked quartz pebble, a single rhyolite flake, 91 fire cracked rocks and a hornfels point fragment. The hornfels point could not be typed.

In comparison with Block 1, the artifact counts in Block 3 dropped considerably. One difference that was evident was the higher ratio of quartz to quartzite; all units had more quartz flakes than quartzite flakes. Quartzite comprised 20.85% of the artifacts other than fire cracked rock and quartz constituted 78.72%. Other raw materials represented include

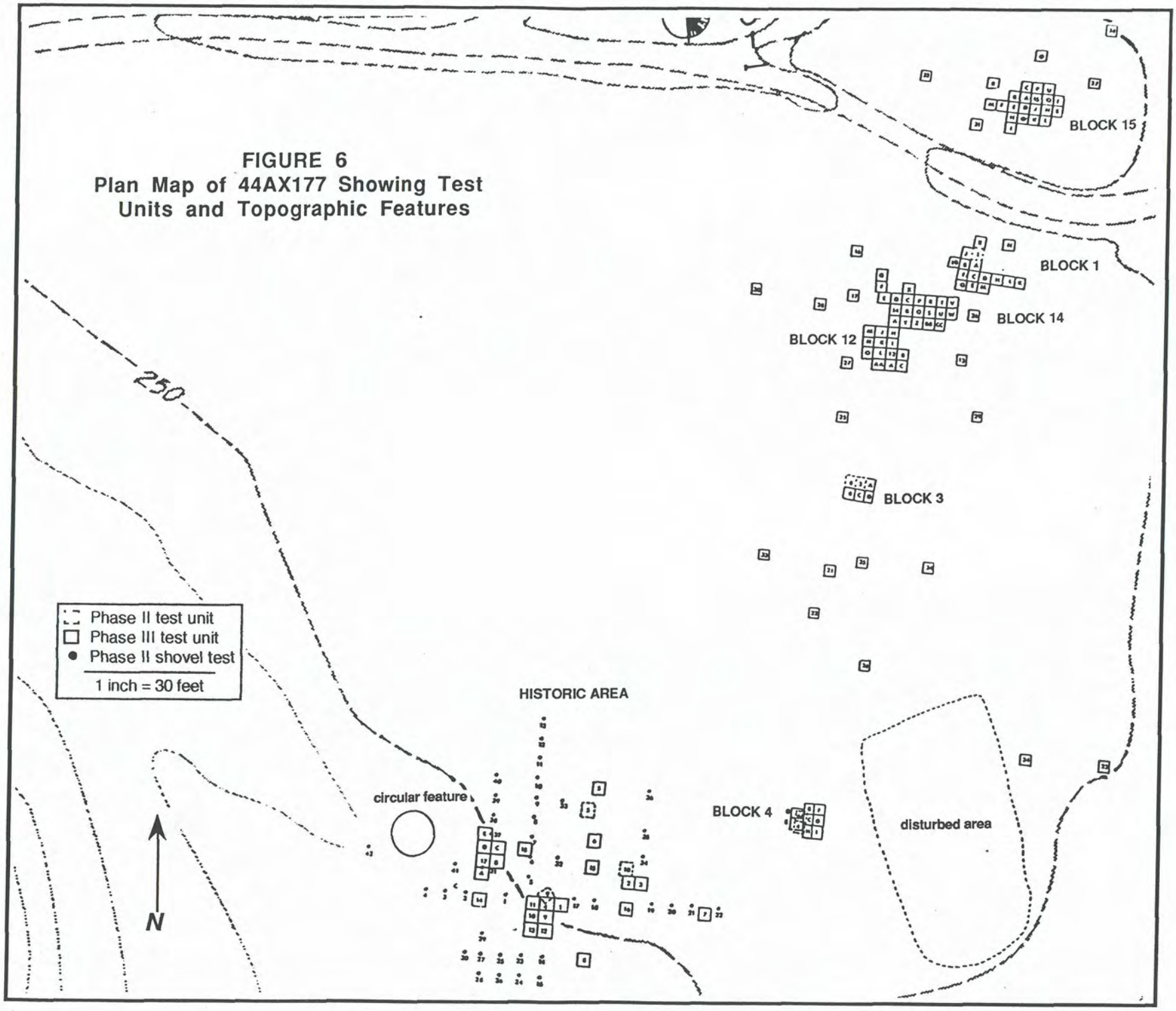


FIGURE 6
Plan Map of 44AX177 Showing Test Units and Topographic Features

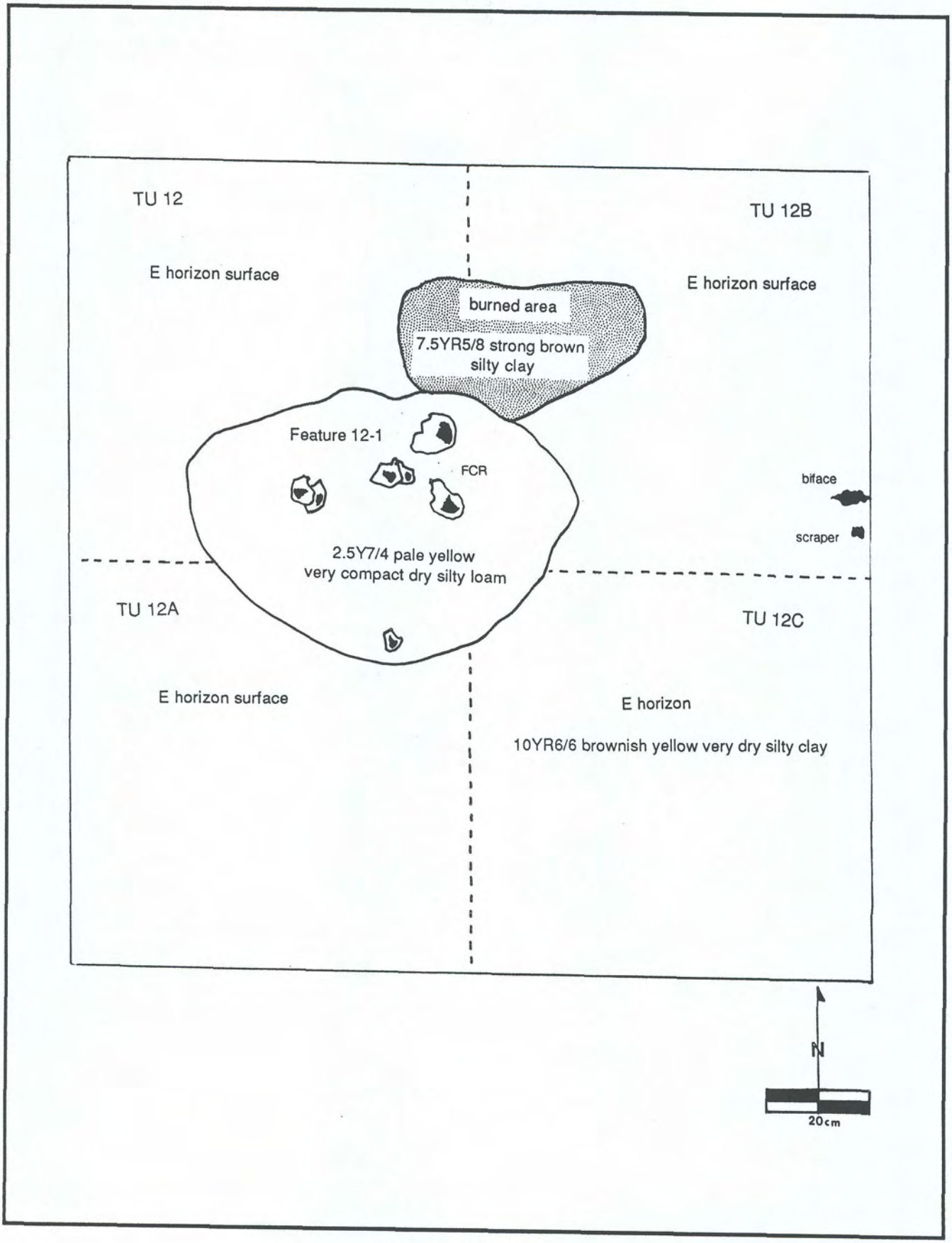
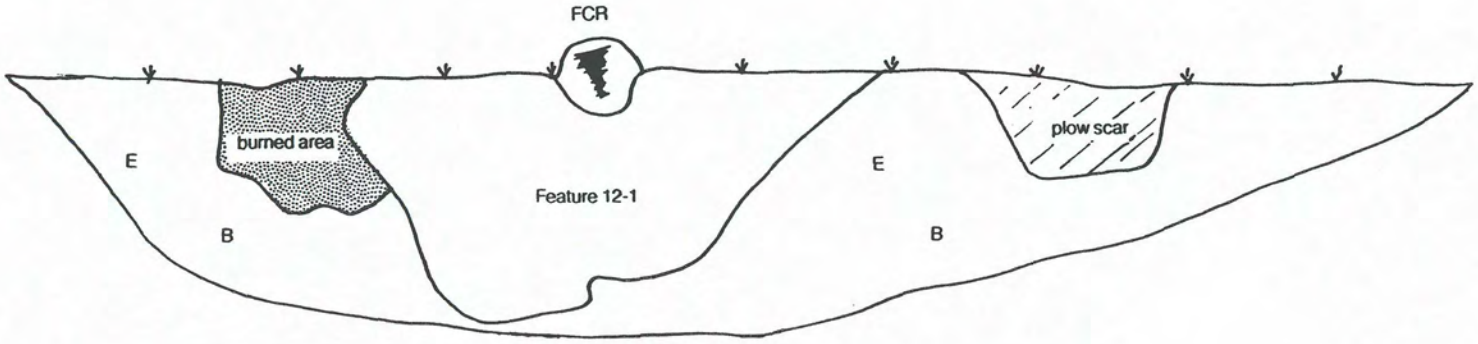


FIGURE 7
44AX177, Feature 12-1, Plan View



E horizon - 2.5Y7/4 pale yellow silty clay

B horizon - 10YR 5/8 yellowish brown silty clay

20cm

FIGURE 8
44AX177, Feature 12-1, Profile

rhyolite (.21%) and hornfels (.21%). Both quartz and quartzite are concentrated in the northern portion of the block excavation.

The quartzite flakes were somewhat smaller in Block 3 than Block 1, averaging 14.63 mm in length and 14.9 mm in width. The quartz flakes were larger, averaging 16.56 mm in length and 14.32 mm in width. Quartzite artifacts with cortex made up 15.31% of the total compared to 40.00% for the quartz.

Only two bifaces were found in this excavation block; one of quartzite and one of quartz. The quartzite biface is an unfinished Holmes point and the quartz biface is from a late stage of manufacture.

Excavation was stopped in this area because of the relatively low numbers of artifacts.

Excavation Block 12

Excavation Block 12 is located about halfway between Blocks 1 and 3 (Figure 6). TU 12 was opened in this area to look for additional activity areas associated with or independent of Block 1. Block 12 contained 4 units, TU 12 through TU 12C. TUs 12 and 12A were excavated 5 cm (2 inches) into the E horizon.

The soils in the units were typical of the site as a whole, consisting of an Ap overlying an E horizon which was atop a B horizon. TU 12 contained the single anomaly. During the excavation of this unit, charcoal flecking was noted at 3-5 cm (1-2 inches) above the Ap/E horizon interface and throughout the interface. The interface was very undulating. The Ap horizon was deeper in the south half of the unit and a small orange burnt clay area was noted in the southeast corner.

While excavating into the E horizon, four large fire cracked rocks appeared in the southeast corner of the unit. A burned area began to appear in the center of the unit (7.5YR 5/8 strong brown silty clay). The east wall showed a burned layer with a pit-like profile. In plan view, a diffuse line began to appear which was felt to define a possible feature. The orange burnt layer present at the Ap/E interface was determined to be more recent; probably the historic burning of a tree.

The area with the fire cracked rocks and the strong brown burned area was labeled Feature 12-1. At the time of the excavation, the feature was thought be intact. Excavation was stopped at this level and the excavations were expanded to the east to fully expose the feature. All of the adjoining squares were excavated to the feature level with the exception of the southeast corner which contained a disturbance, possibly a drill hole.

After complete exposure, Feature 12-1 was an oblong circular stain of [2.5Y 7/4] pale yellow, very dry compact soil (Figure 7 and Plate 3). A north-south trench was excavated down the center between the units to expose the feature in profile (Figure 8 and Plate 4).

The profile cut showed the feature to be bowl shaped at the top. Approximately half way down, the feature narrowed, becoming a small cylindrical hole. A burned area was present to the north of the feature and a small dip was present to the south. The small dip was felt to be a possible plow scar.

Eight quartzite and five quartz flakes were recovered from the feature as well as a quartz chunk, a quartz scraper and the basal portion of an unfinished Holmes projectile point.

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
EU 3	32	0	0	77	16	0	0	1 pt frag-hornfels	50	176
TU 3A	24	0	0	48	24	0	0	0	0	96
TU 3B	7	0	0	33	0	0	0	0	1	41
TU 3C	4	2	1	47	4	0	0	1 qtz flaked pebble	11	70
TU 3D	8	0	0	39	16	1	1-rhyolite	0	8	73
EU 8	20	0	0	54	10	0	0	0	21	105
TOTAL	95	2	1	298	70	1	1	2	91	561

Qtx = quartzite
Qtz = quartz

TABLE 2
Excavation Block 3 Summary

Upon complete excavation, the feature was determined to be a probable tree fall. No further investigation was done.

Table 3 indicates the total number of artifacts found in this block. One hundred ninety three quartzite flakes and chunks, seven quartzite bifaces, a quartzite drill, 99 quartz flakes and chunks, a quartz scraper, and 24 fire cracked rocks were found in these units. Artifact counts were generally low and few fire cracked rocks were recovered. In general, the artifacts clustered in the western portion of the excavation block. Quartzite artifacts followed this same pattern. The quartz artifacts were somewhat more evenly distributed.

The raw material percentages in Block 12 were more similar to those seen in Block 1 than in Block 3, with quartzite artifacts representing 66.44% of the artifacts and quartz representing 33.22% of the artifacts, excluding fire cracked rock. The quartzite flakes averaged 18.66 mm in length and 17.81 mm in width and the quartz flakes averaged 16.18 mm in length and 15.3 mm in width. 18.50% of the quartzite artifacts had cortex and 53% of the quartz.

No early stage bifaces were recovered from this excavation block. Of the quartzite bifaces found, one was middle stage (14.29%), three were late stage (42.86%) and three were unfinished Holmes points (42.86%). The quartzite drill had been fashioned from a late stage biface.

Excavation Block 15

The next excavation area, Block 15, was located across the deeply cut road to the north of Block 1 (Figure 6). An IAC Phase I shovel test pit, STP 18, produced 59 artifacts and an IAC Phase II unit, EU 2, produced 66 artifacts. The Block 15 excavations consisted of 22 units, beginning with TU 15 and continuing to TU 15U. Four units, TUs 15D-15G, were excavated into the E horizon within this block.

Table 4 is a representation of the total number of artifacts found in these units. Artifacts recovered include 2,962 quartzite flakes, ten quartzite chunks, 19 quartzite bifaces, a quartzite scraper, 667 quartz flakes, 118 quartz chunks, eight quartz bifaces, two quartz points, a quartz scraper, three chert flakes, two hornfels flakes and 195 fire cracked rocks. Both the quartz points were typed as Halifax and date to circa 3000 B.C. One of the points appeared to have been broken in use, not in manufacture, and the other had been reworked into a scraper/knife.

Excluding fire cracked rock, quartzite artifacts comprised 78.88% of the total and quartz artifacts comprised 20.99%. Of the 2,962 quartzite flakes and chunks, 12.01% had cortex; 45.09% of the quartz flakes and chunks had cortex. The average length for the quartzite flakes recovered from Block 15 was 18.53 mm and the average width was 17.89 mm. The length of the quartz flakes averaged 15.43 mm while the width averaged 15.65 mm.

Of the 19 quartzite bifaces found in this excavation block, two were early stage (10.53%), three were middle stage (15.79%), nine were late stage (47.37%) and five were unfinished points (26.32%). All of the unfinished points that could be typed were of the Holmes variety. One of the eight quartz bifaces was early stage (12.5%), three were middle stage (37.5%) and four were late stage (50%). As previously stated, two Halifax points were also found in Block 15.

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
TU 12	64	0	4	16	3	0	0	1 qtx drill	7	95
TU 12A	80	0	0	38	2	0	0	0	7	127
TU 12B	29	0	2	18	0	0	0	0	10	59
TU 12C	12	0	0	14	2	0	0	0	0	28
Fea 12-1	8	0	1	5	1	0	0	1 qtz scraper	0	16
TOTAL	193	0	7	91	8	0	0	2	24	325

Qtx = quartzite
Qtz = quartz

TABLE 3
Excavation Block 12 Summary

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
TU 15	66	7	1	26	0	0	0	1 qtz-Halifax	9	110
TU 15A	61	0	1	14	3	0	0	0	0	79
TU 15B	67	1	1	23	7	0	0	0	11	110
TU 15C	91	0	0	16	4	1	0	0	6	118
TU 15D	174	0	2	54	5	2	2-chert	1 qtz Halifax-reworked	7	247
TU 15E	122	0	0	58	7	0	0	0	9	196
TU 15F	182	0	1	37	1	0	0	0	12	233
TU 15G	300	1	2	59	8	0	0	0	16	386
TU 15H	182	0	3	39	4	0	0	0	7	235
TU 15I	100	1	0	22	0	0	1-chert	0	18	142
TU 15J	114	0	0	31	0	2	1-hornfels	0	12	160
TU 15K	208	0	2	47	6	2	0	0	12	277
TU 15L	97	0	0	28	11	0	0	0	0	136
TU 15M	78	0	0	13	12	0	0	0	1	104
TU 15N	150	0	2	28	12	0	0	1 qtz scraper	10	203
TU 15O	227	0	0	30	10	0	0	1 qtx scraper	11	279
TU 15P	105	0	1	23	9	0	0	0	9	147
TU 15Q	44	0	1	1	2	0	0	0	9	57
TU 15R	137	0	0	44	0	1	0	0	8	190
TU 15S	124	0	0	20	3	0	0	0	7	154
TU 15T	242	0	1	40	10	0	1-hornfels	0	9	303
TU 15U	91	0	1	14	4	0	0	0	12	122
TOTAL	2962	10	19	667	118	8	5	4	195	3988

Qtx = quartzite
Qtz = quartz

TABLE 4
Excavation Block 15 Summary

As is evident from the distribution maps, the bulk of material recovered from this block was found in the units in the southwestern corner of the block (TUs 15F, 15H, 15G, 15K) and in the northeast corner (TUs 15O, 15T). A large tree precluded excavation to the east to further define this concentration. Excavation to the south was precluded by the road which had considerably disturbed any cultural deposits.

Both quartz and quartzite artifacts are clustered in the northeast and southwest corners, however, the quartzite artifacts are somewhat more tightly clustered. The early stage bifaces were found in the northern portion of the excavation block, the middle stage in the center of the block and the late stage were more evenly distributed. The two Halifax points were found in the center of the block. Several of the units had multiple stages of bifaces within them.

The clustering in the northeast and southwest corners of the excavation block appear to represent discrete activity areas or chipping clusters which have been somewhat displaced by the plow. Although the road has certainly bisected the area and possibly interrupted what was one continuous cultural feature, because of the drop in artifacts in this direction it is possible that Blocks 1 and 15 represent separate activity areas.

Excavation Block 4

Block 4 was located at the far southern end of the site (Figure 6). A large area which had been disturbed by machine activity in the not so recent past was located to the east of the block excavations.

The units were placed in this area because the IAC Phase II EU 4 contained a relatively large number of prehistoric artifacts including what was thought to be a sherd of prehistoric ceramics. EU 4 yielded 96 quartzite flakes, 66 quartz flakes, eight quartz chunks, a chert flake, a quartz scraper and 13 fire cracked rocks. What was originally thought to be a prehistoric potsherd was later determined to be a piece of decomposing sandstone. Ten excavation units were placed in this block, beginning with 4B and continuing to 4I. One unit, 4D, was excavated into the E horizon.

Excavation was stopped in this block after ten units had been excavated because artifact counts were low.

Table 5 indicates the artifacts recovered from these units - 575 quartzite flakes, 306 quartz flakes, 71 quartz chunks, two quartz bifaces, two chert flakes, a quartz scraper, a silicified slate drill, a chert triangular point, a hornfels point and 84 fire cracked rocks. The triangular point dates to the Late Woodland time period and the hornfels point postdates the Holmes points, circa post-1200 B.C. It was heavily curated and patinated.

Quartz artifacts made up a larger percentage of the total artifacts in this block. Excluding the fire cracked rocks, quartzite artifacts comprise 59.9% of the total and quartz artifacts make up 39.58%. Chert, hornfels and silicified slate make up less than one percent. 15.48% of the quartzite artifacts contained cortex while 31.32% of the quartz had cortex. Of the two quartz bifaces recovered, one was middle stage and one was late. The average length of the quartzite flakes was 19.84 mm and the average width was 20.02 mm. The average length of the quartz flakes was 14.2 mm and the average width was 14.19 mm.

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
EU 4	96	0	0	66	8	0	1-chert	1 qtz scraper	13	185
TU 4A	41	0	0	20	4	0	0	0	10	75
TU 4B	55	0	0	11	1	0	0	1 SS drill	9	77
TU 4C	64	0	0	22	14	0	0	0	15	115
TU 4D	76	0	0	30	3	0	0	1 chert triangle pt	0	110
TU 4E	2	0	0	6	0	0	0	0	0	8
TU 4F	66	0	0	29	4	0	0	0	9	108
TU 4G	59	0	0	19	15	0	0	0	0	93
TU 4H	62	0	0	65	10	2	1-chert	0	16	156
TU 4I	54	0	0	38	12	0	0	1 hornfels pt	12	117
TOTAL	575	0	0	306	71	2	2	4	84	1044

Qtx = quartzite
Qtz = quartz
SS = silicified sandstone

TABLE 5
Excavation Block 4 Summary

The total artifacts counts in this block increase towards the south and east. The quartzite flakes follow this pattern as well, however, the quartz flakes are more concentrated in the southern portion of the site.

Excavation Block 14

Block 14 was located in the central portion of the site, southwest of Block 1 (Figure 6). Excavation units were placed in this area because of what was thought to be a feature in Block 12 and because of the area's proximity to Block 1, which had high artifact counts. Thirty units were excavated in this block, beginning with 14 and extending through 14CC. Two units, 14D and 14G, were excavated into the E horizon. Ultimately, Blocks 12 and 14 were connected to determine if they represented a single or multiple activity areas.

Table 6 presents the artifacts recovered from this block. As can be seen from the table, 3,103 quartzite flakes, eight quartzite chunks, 23 quartzite bifaces, a quartzite unifacial knife, a quartzite scraper, 706 quartz flakes, 160 quartz chunks, eight quartz bifaces, a quartz point, a quartz core, eight jasper flakes, a jasper scraper, three chert flakes, a hornfels point and 427 fire cracked rocks were found. The Halifax point dates to circa 3000 B.C. and the hornfels point postdates 1200 B.C.

Quartzite artifacts made up 77.91% of the total (excluding fire cracked rock), quartz made up 21.76% and chert, hornfels and jasper made up less than 1%. Only 12.63% of the quartzite artifacts had cortex as opposed to 41.44% of the quartz. Quartzite flakes averaged 18.66 mm in length and 19 mm in width and the quartz flakes averaged 15.74 mm in length and 14.65 mm in width. Of the 23 quartzite bifaces found, six were middle stage (26.09%), 10 were late stage (43.48%) and seven were unfinished points (30.43%). The unfinished points that could be typed all dated to the Holmes phase of the Late Archaic, circa 1200-1800 B.C.

In general, the artifacts within the Block 14 excavations appear to be more evenly distributed than those in some of the other blocks, however, a cluster is noted in the southwest corner in TUs 14J, 14N, 14K, 14O and 14L. The fire cracked rock, on the other hand, is concentrated in the northeast portion of the block excavations. One area had the highest counts of fire cracked rocks of the site, TUs 14P-14W. No stains were found in association with this fire cracked rock cluster and no intact hearths were noted. They are assumed to represent a hearth or hearths which have been plow displaced.

The quartzite flakes appear to cluster in the southwest corner as was true of the total artifacts, however, although the quartz is more evenly distributed, a sharp increase in quartz was present in TU 14Q. Quartzite flakes with cortex were more numerous in the southwest corner of the block. The majority of the jasper flakes were found in TUs 14O and 14L. The middle stage bifaces were fairly evenly distributed across the block as were the late stage. The unfinished points were more numerous in those units which were closest to the units with high fire cracked rock counts.

Single Excavation Units

In addition to the block excavation units noted above, 24 single excavation units were placed at the site to try and determine the site boundaries and to determine if other previously unknown activity areas were present (Figure 6). These units include TUs 13 and 16-38. Soils in these units were similar to those found in the block excavations with the exception of TU 38 which was north of Block 15. TU 38 had extremely deflated soils.

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
TU 14	90	0	0	10	2	0	0	0	6	108
TU 14A	106	0	1	15	1	0	0	0	4	127
TU 14B	97	2	2	22	1	1	0	0	0	125
TU 14C	105	0	0	28	4	1	0	0	6	144
TU 14D	100	0	2	66	3	0	1-jasper	1 qtx knife	5	179
								1 jasper scraper		
TU 14E	125	0	1	45	2		0		5	178
TU 14F	111	0	0	43	2	0	0	0	21	177
TU 14G	109	0	0	22	6	0	1-chert	0	0	138
TU 14H	99	0	1	10	4	0	0	0	7	121
TU 14I	104	0	0	14	2	3	0	0	12	135
TU 14J	183	0	0	13	10	0	1-jasper	0	12	219
TU 14K	198	0	0	28	8	0	0	0	18	252
TU 14L	144	0	0	25	17	0	1-jasper	0	0	187
TU 14M	97	0	1	3	1	0	0	1 qtz-Halifax	0	103
TU 14N	163	0	1	16	6	0	0	0	0	186
TU 14O	166	3	1	38	0	0	5-jasper	0	0	213
TU 14P	76	0	2	15	15	1	0	0	26	135
TU 14Q	120	0	0	9	9	0	0	0	43	181
TU 14R	91	0	0	19	14	0	0	0	71	195
TU 14S	41	0	2	20	10	0	0	0	39	112
TU 14T	39	0	0	12	2	0	0	0	30	83
TU 14U	104	0	2	25	7	0	1-chert	0	51	190
TU 14V	41	0	0	5	2	0	0	0	8	56
TU 14W	57	0	1	11	3	0	0	0	25	97
TU 14X	45	0	1	20	2	0	0	0	0	68
TU 14Y	110	0	1	34	4	0	1-chert	1 qtx scraper	10	162
								1 qtz core		
TU 14Z	86	0	0	19	4	1	0	0	15	125
TU 14AA	98	0	1	37	0	0	0	0	13	149
TU 14BB	86	3	2	25	6	1	0	0	0	123
TU 14CC	112	0	1	57	13	0	0	1 hornfels-post Holmes	0	184
TOTAL	3103	8	23	706	160	8	11	6	427	4452

Qtx = quartzite
Qtz = quartz

TABLE 6
Excavation Block 14 Summary

This deflation was evident on most of the flat containing the unit, as the soil loss could be seen around the tree roots in this area.

One thousand four hundred twenty three artifacts were recovered from the single excavation units at the site, including TU 7A (Table 7). This total is comprised of 871 quartzite flakes, nine quartzite bifaces, 388 quartz flakes, 40 quartz chunks, a quartz core, five chert flakes and 108 fire cracked rocks. A quartz biface was also found on the surface of the site.

When examining the artifact distribution in the single excavation units, the units with the highest artifact counts in all categories were those units which were closest to the block excavations.

Historic Area

Although recovered from the Phase II excavations conducted at the historic area within 44AX177, the prehistoric artifacts recovered are discussed here as they are related to the larger prehistoric site examined at the Phase III level. It is important to note, however, that because the excavations were designed to gain information about the historic component, no attempt was made to place units in those areas with the highest prehistoric artifact counts. The locations of these units are shown on Figure 5.

Six hundred seven prehistoric artifacts were recovered from the excavations in the historic area (Table 8). Of these, 348 were quartzite flakes and chunks, three were quartzite bifaces, 248 were quartz flakes and chunks, one was a quartz scraper, six were chert flakes and one was a hornfels flake.

Quartzite artifacts made up 57.82% of the total, quartz made up 41.02%, chert made up .99% and hornfels made up .16%. Quartzite artifacts with cortex comprised 13.67% of the total while 52.21% of the quartz artifacts had cortex. Two of the quartzite bifaces were from the middle/late stage of manufacture and one was an unfinished point. Based on the average length (23.29 mm) and width (21.35 mm), the quartzite flakes in the historic area were larger than those found in the rest of the site. Quartz flakes averaged 15.87 mm in length and 13.57 mm in width, which was consistent with the rest of the site.

Although systematic testing was not conducted between the two areas, it appears as if the artifacts in the historic area are most numerous in the portion of the area which is nearest the rest of the site, toward the Block 4 excavations. This is true of all artifact categories examined.

Site Discussion

44AX177

Based on the Phase III excavations as well as those conducted previously, it appears as if 44AX177 is a limited activity locus which functioned as an area where preshaped cobbles, predominantly quartzite, were turned into late stage preforms and finished projectile points. The site contains at least four components, Middle Archaic V Halifax, Late Archaic II Holmes, a post Holmes phase and Late Woodland. Based on the preponderance of quartzite, the bifaces, and the rejected late stage projectile points, it is felt the site dates primarily to the Holmes phase - circa 1800-1200 B.C. (Plates 5-8). Plate 9 illustrates the Halifax points. Although a single Late Woodland period triangular point was found, no triangular bifaces were present. Based on this, it does not appear that site usage during the Late Woodland time period was related to lithic reduction. The point was most

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
Surface	0	0	0	0	0	1	0	0	0	1
TU 7A	1	0	1	7	4	0	0	0	0	13
TU 13	36	0	0	4	1	0	0	0	0	41
TU 16	34	0	0	36	4	0	0	0	1	75
TU 17	88	0	1	40	0	0	0	0	12	141
TU 21	15	0	0	45	6	0	5-chert	0	4	75
TU 22	23	0	0	24	0	0	0	0	9	56
TU 23	15	0	0	16	2	0	0	0	3	36
TU 24	17	0	0	20	2	0	0	0	7	46
TU 25	39	0	0	28	2	0	0	0	0	69
TU 26	112	0	0	19	0	0	0	0	0	131
TU 27	62	0	1	8	5	0	0	0	0	76
TU 28	78	0	1	16	6	0	0	0	0	101
TU 29	7	0	0	8	0	0	0	0	3	18
TU 30	7	0	0	45	0	0	0	0	0	52
TU 31	120	0	1	16	4	0	0	0	11	152
TU 32	42	0	1	12	0	0	0	0	0	55
TU 33	19	0	0	10	0	0	0	0	7	36
TU 34	2	0	0	12	3	0	0	0	5	22
TU 35	13	0	0	6	1	0	0	1 qtz core	10	31
TU 36	38	0	1	7	0	0	0	0	7	53
TU 37	87	0	1	6	0	0	0	0	9	103
TU 38	16	0	1	3	0	0	0	0	20	40
TOTAL	871	0	9	388	40	1	5	1	108	1423

Qtx = quartzite
Qtz = quartz

TABLE 7
Phase III Miscellaneous Units Summary

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
STP 1	2	0	0	0	0	0	0	0	0	2
STP 13	10	0	0	2	0	0	2-chert	0	0	14
STP 15	1	0	0	0	0	0	0	0	0	1
STP 17	1	0	0	0	0	0	0	0	0	1
STP 18	0	0	0	2	0	0	0	0	0	2
STP 19	4	0	0	0	0	0	0	0	0	4
STP 20	2	0	0	0	0	0	0	0	0	2
STP 22	2	0	0	0	0	0	0	0	0	2
STP 23	2	0	0	0	0	0	0	0	0	2
STP 33	0	0	0	1	0	0	0	0	0	1
STP 35	1	0	0	0	0	0	0	0	0	1
STP 36	2	0	0	0	0	0	0	0	0	2
STP 42	0	0	0	1	0	0	1-chert	0	0	2
TU 1	30	0	0	21	6	0	0	0	0	57
TU 2	31	3	0	12	0	0	2-chert	0	0	48
TU 3	70	0	1	39	3	0	0	0	0	113
TU 4	14	0	0	4	5	0	1-chert	0	0	24
TU 5	5	0	0	7	4	0	0	0	0	16
TU 6	2	0	0	31	0	0	0	0	0	33
TU 7	38	3	0	11	12	0	1-hornfels	0	0	65
TU 8	30	1	0	10	9	0	0	0	0	50
TU 9	12	0	0	14	1	0	0	0	0	27
TU 10	9	0	0	2	4	0	0	0	0	15
TU 11	4	0	0	2	1	0	0	0	0	7
TU 12	22	0	1	10	8	0	0	1 qtz scraper	0	42
TU 13	14	0	0	6	3	0	0	0	0	23
TU 14	1	0	0	4	1	0	0	0	0	6
TU 15	2	0	0	3	0	0	0	0	0	5
TU 16	12	0	0	0	1	0	0	0	0	13
TU 17	1	0	0	0	0	0	0	0	0	1
TU 17A	0	0	0	1	0	0	0	0	0	1
TU 17B	8	0	1	2	0	0	0	0	0	11
TU 17C	4	0	0	0	0	0	0	0	0	4
TU 17D	2	0	0	0	0	0	0	0	0	2
TU 17E	3	0	0	5	0	0	0	0	0	8
TOTAL	341	7	3	190	58	0	7	1	0	607

Qtx = *quartzite*
Qtz = quartz

TABLE 8
Historic Area Summary

likely broken during use or resharpening (the distal end was missing) during an exploitative foray such as hunting (Plate 10). It is also unlikely that lithic reduction was the primary activity at the site during the time period represented by the post Holmes hornfels points (Plate 11). Other than the broken points, only a few hornfels flakes were found. Again, the site appears to have been used during an exploitative foray at this time.

The site function at the time of the Halifax points, circa 3000 B.C., appears somewhat different. Quartz was the preferred lithic raw material during the Halifax phase and it is obvious from the artifacts found at the site that lithic reduction of quartz was occurring. However, none of the Halifax points were unfinished and no bifaces which appeared to be "Halifax-like" in shape or preforms for Halifax points were found. The Halifax points were, in general, heavily curated or were exhausted and had been reworked into another tool type (Plate 9).

It is possible that the points were discarded and replaced by new points which were manufactured at the site. If so, in contrast to the Late Archaic pattern, the new points were probably hafted at the site and the exhausted points were discarded. No exhausted Holmes points were found so it is unlikely that the new points dating to this period were hafted at the site. They were probably taken back to the base camp and hafted there. Another difference is the presence of quartz cores (Plate 12). The only cores which were found at the site were of quartz. It is not clear whether these core represent blanks from which the points/tools were made or whether the cores were used for another purpose such as a base from which to manufacture flake tools. In fact, it cannot be concluded that the quartz chipping is related to the Halifax component.

Tables 9 and 10 present the total artifact counts from 44AX177. As can be seen from these tables, 17,018 artifacts, including 1,108 fire cracked rocks, were recovered from the site. Quartzite artifacts constitute 75% of the total artifact count (excluding fire cracked rocks) and quartz artifacts constitute 24.66%. Rhyolite, chert, hornfels, jasper and silicified slate artifacts were also found. These raw material categories each make up less than 1% of the artifact totals.

Of the 11,933 quartzite artifacts, 11,783 are flakes, 44 are chunks, 100 are bifaces, three are scrapers, one is a drill, one is a drill/punch and one is a unifacial knife. 11.36% of the quartzite artifacts had cortex. Of the 100 bifaces, seven were early stage (7%), 13 were middle (13%), two were middle/late (2%), 47 were late stage (47%) and 31 were unfinished points (31%). All of the points that could be dated were from the Holmes phase of the Late Archaic. The average length of the quartzite flakes was 19.13 mm and the average width was 18.54 mm.

Of the 3,924 quartz artifacts recovered, 3,249 are flakes, 634 are chunks, 27 are bifaces, five are cores, one is a flaked pebble, four are scrapers, one is a drill and three are Halifax points. In contrast to the quartzite artifacts, 40.87% of the quartz artifacts had cortex. Of the 27 quartz bifaces found, two are early stage (7.41%), 12 are middle stage (44.44%), 11 are late stage (40.74%) and two appear to be very late stage biface or point fragments (7.41%). Neither of the point fragments could be typed. The quartz flakes were somewhat smaller than the quartzite, averaging 17.23 mm in length and 16.82 mm in width. This may reflect the size of the raw material used, i.e. flaked pebbles rather than cobbles. A flaked pebble was recovered from TU 3C.

Based on the number of flakes with cortex, it is possible that more primary reduction of quartz was being done at the site than quartzite. Other differences between the two raw material types include the relative percentages of bifacial reduction stages at the site. Plates 5-8 present the reduction stages. It is likely that the preponderance of quartz middle stage

	TOTAL QTX	W/CORTEX	%	AVG FL LGTH	AVG FL WDTH	E BIFACES	%	MID BIFACES	%	LATE BIFACES	%	PTS	%	TOOLS	OTHER	FCR	EXOTICS	DATE RANGE
BLOCK 1	3370	250	7.42%	19.63	19.48	3	11.43%	3	8.57	21	54.29	8	25.71	3 -Qtx		160	11-Rhy	Holmes
BLOCK 3	98	15	15.31%	14.63	14.9	0		0		0		1		1-Hor		91	1-Rhy	Holmes, post Holmes
BLOCK 4	575	89	15.48%	19.84	20.02	0		0		0		0		1 Ch, 1Ss, 1Hor		84	2 Ch, 1 Ss, 1 Hor	L. Woodland
BLOCK 12	200	37	18.50%	18.66	17.81	0		1	14.28%	3	42.86%	3	42.86%	1-Qtx		24		Holmes
BLOCK 14	3136	396	12.63%	18.66	19	0		6	26.09%	10	43.48%	7	30.43%	2-Qtx, 1Ja, 1Hor		427	9 Ja-1 Hor, 3 Ch	Holmes, post Holmes
BLOCK 15	2992	357	11.93%	18.53	17.89	2	10.53%	3	15.79%	9	47.37%	5	26.32%	1-Qtx		195	3 Ch, 1 Horn	Holmes
HISTORIC	351	48	13.67%	23.29	21.35	0		2 M/L	66.67%			1	33.33%			0	7 Ch, 1 Horn	Holmes

	TOTAL QTZ	W/CORTEX	%	AVG FL LGTH	AVG FL WDTH	E BIFACES	%	MID BIFACES	%	LATE BIFACES	%	PTS	%	TOOLS	OTHER
BLOCK 1	434	145	33.56%	13.57	12.77	1	50.00%	0		1	50.00%	0			1-CORE
BLOCK 3	370	148	40.00%	16.56	14.32	0		0		1		0			1- FKD PEB
BLOCK 4	380	119	31.32%	14.2	14.19	0		1		1		0		1-Qtz	
BLOCK 12	100	53	53.00%	16.18	15.3	0		0		0		0		1-Qtz	
BLOCK 14	876	363	41.44%	15.74	14.65	0		5		2		1		1-Qtz	1-CORE
BLOCK 15	796	354	44.47%	15.43	15.65	1		3		4		2		3-Qtz	
HISTORIC	249	130	52.21%	15.87	13.57	0		0		0		0		1-Qtz	

Qtx = quartzite
Qtz = quartz
Rhy = rhyolite
Ch = chert
Ss = silicified slate
Hor = hornfels
Ja = jasper

TABLE 9
Block Excavation Comparison

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
Phase I STPs	200	1	1	119	24	3	0	1	7	356
Metal Detecting	53	0	1	9	4	0	1	1	2	71
Phase II Misc	74	0	1	112	13	2	2	1	10	215
Phase II Hist	341	7	3	190	58	0	8	1	0	608
Block 1	3316	16	35	363	68	2	11	4	160	3975
Block 3	95	2	1	298	70	1	1	2	91	561
Block 4	575	0	0	306	71	2	2	4	84	1044
Block 12	193	0	7	91	8	0	0	2	24	325
Block 14	3103	8	23	706	160	8	11	6	427	4452
Block 15	2962	10	19	667	118	8	5	4	195	3988
Phase III Misc	871	0	9	388	40	1	5	1	108	1423
TOTAL	11783	44	100	3249	634	27	46	27	1108	17018

Qtx = quartzite
Qtz = quartz

TABLE 10
44AX177 Site Summary

bifaces is a reflection of the raw material used. Middle stage bifaces comprise 13% of the quartzite bifaces and 44.44% of the quartz. It is likely that these bifaces were discarded at the midpoint of the reduction sequence either because they broke or because of a raw material flaw. Quartz is more likely to have angular fracture planes which would make it either more difficult to reduce or would cause breakage along the angular plane. Another difference is the relative percentages of unfinished points/point fragments. Unfinished points/point fragments manufactured from quartzite constituted 31% of the bifaces while these constituted only 7.41% of the quartz bifaces. Either many more quartz points were completed, which seems unlikely given the nature of the raw material, the site's occupants were not making as many quartz points at the site, or the reduction sequence is different. The artifact to tool ratio is much greater for quartzite (1,985 to 1) than quartz (435 to 1).

Few formal tools were found in the assemblage other than projectile points: a jasper scraper, a quartzite drill, a quartzite drill/punch, a unifacial quartzite knife, three quartzite scrapers, four quartz scrapers and a quartz drill (Plates 13 and 14). The quartzite drills appear to have been manufactured from late stage bifaces which have been reworked, probably after they had been broken during manufacture. Although these may indicate a wider range of activities, scrapers were recovered from similar knapping loci at 44WR11 in the Flint Run Paleoindian complex (Gardner 1989). This may indicate the use of scrapers in some stage or activity associated with the projectile point manufacturing process (Gardner, Birdsong and Walker 1992:5). Because of the low frequency of tools and the absence of expected Holmes phase artifacts such as steatite bowl fragments, the site is not interpreted as a base camp. On the contrary, it is seen as a limited function locality which was a point/tool manufacturing appendage to a base camp/base camps located elsewhere, most likely in the anadromous fishing zones.

When examining total artifact distribution across the site, it is apparent based on the clustering, i.e. the increase in artifacts in certain portions of the block excavations and a decrease outside of these increases, that each area where the block excavations were conducted is a discrete activity area. In general, when one looks at all artifact types, c.f quartzite flakes, bifaces, etc., the greatest number of all artifact types is within the block excavation clusters. The quartz artifacts appear to be more tightly clustered however.

When looking at all of the block excavations, there appears to be one unit within each block that contains far more quartz artifacts. In addition, when examining the relative percentages of quartz within each block excavation, quartz artifacts comprise a larger percentage of the total artifacts in the southern portion of the site. Quartz artifacts in Blocks 1, 12, 14 and 15, which are in the northern half of the site, make up between 11.35% and 33.22% of the total. In the southern half, Block 3 contained the largest percentages of quartz (78.72%), followed by the Historic Area (41.02%) and Block 4 (39.58%). Oddly enough given the Halifax populations preference for quartz, all of the Halifax points were found in the northern portions of the site.

The raw materials other than quartz and quartzite also show some clustering. Although the chert is more widespread and occurs in all the excavation blocks, the jasper, hornfels and rhyolite occur in more discrete clusters. None of these raw materials occur in any quantity and it is likely that the materials are the result of resharpening.

When examining the size ranges of the flakes across the site, the presence of cortex and the locations of bifaces, it appears as if each activity area is a separate activity locus. All flakes within a single block excavation show a wide range of sizes. The quartz flakes ranged in size from 6 x 9 mm to 50 x 60 mm. A total of 416 complete quartz flakes were present. One hundred forty flakes (33.65%) ranged in length from 0-10 mm, 201 (48.32%) were 11-20 mm long, 54 (12.98%) were 21-30 mm long, 18 (4.33%) were 31-

40 mm long and 3 (.72%) were 40-50 mm long. One hundred twenty seven (30.53%) quartz flakes were 0-10 mm wide, 230 (55.29%) were 11-20 mm wide, 44 (10.58%) were 21-30 mm wide, 13 (3.1%) were 31-40 mm wide, one (.24%) was 41-50 mm wide and one (.24%) was 51-60 mm wide. Of the 416 quartz flakes on which the dorsal flake scars could be counted, 414 (99.52%) had 2-3 flake scars; only two had more than 4 (.48%).

The quartzite flakes ranged in size from 6 x 8 mm to 65 x 45 mm. A total of 1,897 complete quartzite flakes were recovered. Of these, 413 (21.77%) were from 0-10 mm long, 939 (49.50%) were from 11-20 mm, 372 (19.61%) were from 21-30 mm, 122 (6.43%) were from 31-40 mm, 21 (1.11%) were from 41-50 mm, 10 (.53%) were from 51-60 mm and two (.11%) were greater than 61 mm long. The widths were similar - 359 (18.92%) were from 0-10 mm wide, 1,026 (54.08%) were from 11-20 mm, 362 (19.08%) were from 21-30 mm, 114 (6.0%) were from 31-40 mm, 28 (1.48%) were from 41-50 mm, four (.21%) were from 51-60 mm and four (.21%) were greater than 61 mm wide. Of the 1,897 complete flakes, 1878 (99%) has 2-3 flake scars, 2 (.10%) had 0-1 flake scars and 17 (.90%) had four or more flake scars.

The primary activity occurring at the site was cobble reduction. This is indicated by the presence of cobble cortex on some of the artifacts, particularly the early stage bifaces. The absence of large broken cobbles at the site indicates that the first stages of cobble reduction were occurring elsewhere, probably at the cobble source. The early stage biface was then brought to the site for secondary reduction. Other than a single cobble fragment and the flaked quartz pebble, no cobbles were recovered from the site or observed. Any cobbles present were fire cracked rock, consisting primarily of sandstone.

Each block excavation represents an activity area at which all stages of bifacial reduction were occurring. The presence of fire cracked rock in large quantities at the site may indicate a cold weather occupation.

44AX176

44AX176 is located to the west of Excavation Blocks 1 and 15 and the northern portion of 44AX177 (Figure 1). After the Phase I and II investigations, it was described as an inland cluster with a high tool to debitage ratio (Figures 3 and 4). The Phase I excavation units yielded five quartz flakes, two quartz chunks with cortex, two quartz middle stage biface fragments, a possible quartz point fragment and a portion of a quartzite point. The quartzite point fragment dates to the Holmes phase of the Late Archaic. A Phase II unit (EU 6) in this location contained a single fire cracked rock and burned clay fragments.

The site was though to be significant because of the high biface to flake ratio. Although originally thought to be an activity area associated with 44AX177, 44AX176 was given a separate site number because of the distance between the two areas and the difference in artifact density.

A single meter square unit, TU 6A was placed in this area during the plowzone testing portion of the Phase III investigation. This unit yielded two quartz flakes.

The Phase III investigations consisted of the placement of three meter square units at the site, TUs 18-20 (Figure 8). TU 18 contained two quartzite and two quartz flakes. TU 19 yielded five quartzite flakes and nine quartz flakes and TU 20 yielded eight quartz flakes. Table 11 presents the total artifact counts from the site.

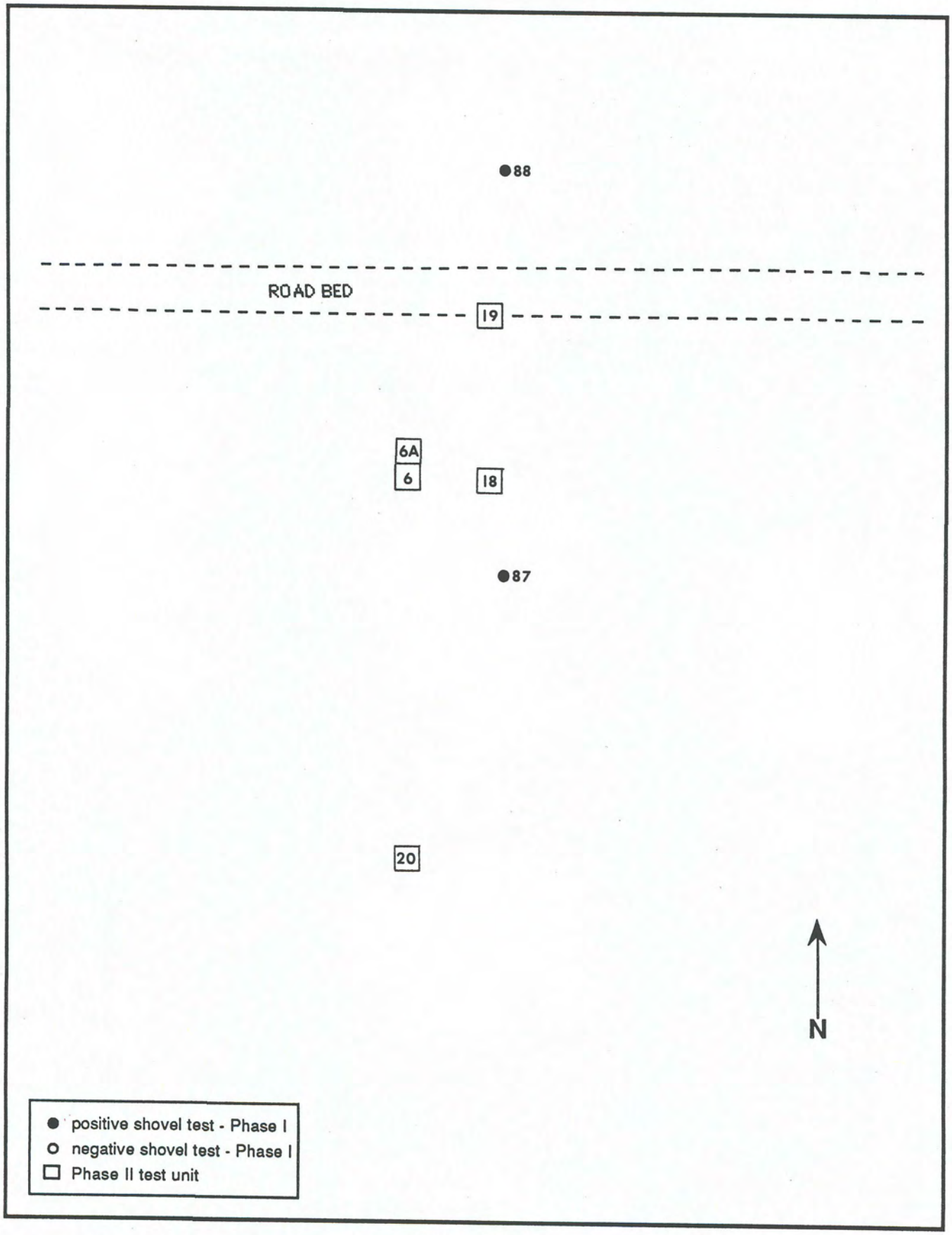


FIGURE 9
Plan Map of 44AX176 Showing Test Units

Unit	Qtx Flakes	Qtx Chunks	Qtx Bifaces	Qtz Flakes	Qtz Chunks	Qtz Bifaces	Flakes, Other	Miscellaneous	FCR	TOTAL
STP 87	0	0	1	0	0	1	0	0	0	2
STP 87 N	0	0	0	2	0	0	0	0	0	2
STP 87 S	0	0	0	2	2	0	0	0	0	4
STP 87 W	0	0	0	0	0	0	0	1 Qtx pt frag	0	1
STP 88	1	0	0	1	0	1	0	0	0	3
EU 6	0	0	0	0	0	0	0	0	1	1
TU 6A	0	0	0	2	0	0	0	0	0	2
TU 18	2	0	0	2	0	0	0	0	0	4
TU 19	5	0	0	9	0	0	0	0	0	14
TU 20	0	0	0	8	0	0	0	0	0	8
TOTAL	8	0	1	26	2	2	0	1	1	41

Qtx = quartzite
Qtz = quartz

TABLE 11
44AX176 Summary

Excavation was stopped at the area because of the extremely low artifact counts in all three units.

This site is interpreted as a peripheral activity area associated with the secondary lithic reduction activities occurring at 44AX177.

SUMMARY AND CONCLUSIONS

44AX177 is a secondary lithic reduction station which dates primarily to the Holmes phase of the Late Archaic time period or from 1200-1800 B.C.

The site's attribution as a secondary lithic reduction station aimed at the production of projectile points is evident based on the following:

1) the lack of artifacts indicating primary reduction at the site, i.e. flaked cobbles, cobble fragments, etc.
2) the multiple dorsal flake scars - indicating advanced bifacial reduction
3) the relatively small flake size also indicating advanced bifacial modification
4) the presence of artifacts indicating various stages of bifacial reduction
5) the presence of unfinished points
6) the low numbers of definable tools.

This is in keeping with the Flint Run model developed by Gardner (1989) in which the Paleoindians traveled to the quarry, reduced the raw material to easily transportable blanks, carried the blanks to a secondary reduction station and then transported the finished products to the base camp. In contrast to the Flint Run model in which the jasper was being quarried, the raw material source utilized by the occupants of 44AX177 consisted of cobbles.

The same model has been observed for other sites, notably 44ST185 and 44PA199. 44ST185 is a lithic reduction station which has two components (Gardner and Anderson 1992). The first is represented by the lithic reduction/quarry reduction station which focuses on silicified siltstone. No temporal diagnostics were found in association with these artifacts. The second component at the site dates either to the Middle Archaic (5500-4000 B.C.) or the Early Woodland (1200-500 B.C.), depending upon how a single point found in association is typed. The latter component is associated with quartz utilization and appears to be more generalized and longer term (Gardner and Anderson 1992:4).

44PA199 also contained two components (Gardner, Birdsong and Walker 1992). The first is a highly transient occupation which is not associated with the main body of the artifacts and which dates to the Early Archaic time period (7500-7200 B.C.). The second, like 44AX177, is a lithic reduction station dating to the Holmes phase of the Late Archaic and the artifacts were primarily quartzite. Unlike 44AX177, different kinds of knapping activities occurred in different places at the site. At 44PA199, earlier stage knapping activities occurred at the northern end of the site and later stage knapping activities occurred at the southern end (Gardner, Birdsong and Walker 1992:5).

44AX166 is another lithic reduction station present within the Stonegate complex. Three lithic concentrations relating to biface reduction and the production of projectile points were found in Parcels A and B (Adams et al 1993). It is likely that the quarry site associated with 44AX177 and 44AX166, or the site at which the initial stage reduction occurred, is located along the stream which would have provided a source of cobbles. It is possible that 44AX31 is the locale where the finished points were taken; however, it is

equally possible that a larger base camp is located along Holmes Run or Four Mile Run or at the junction of one of these streams with the Potomac (see discussion below).

On the other side of the Potomac River in Georgetown, David Clarke (personal communication 1996) is investigating a Holmes period lithic reduction station at the Lab School. This site is situated on a terrace high above the Potomac and the artifacts are virtually identical to those recovered at 44AX177.

44AX177 fits into a developing model of post-1800 B.C. Late Archaic sites linked with the exploitation of anadromous fish. Gardner (1977 and 1980) has addressed part of this; specifically the fishing/base camps associated with intense utilization of the fresh water Potomac estuary during the spring months from circa March to late June or early July. 44AX177 provides another element with the quarry reduction station. William Henry Holmes' (1890) work on the Rock Creek quarries is seen as fitting into this model in the same way. Although it has not been clearly defined, it would appear that from at least Rock Creek through to Holmes Run, the ancestral Potomac and/or an early marine transgression left behind a plenitude of quartzite cobbles which were exploited by Holmes phase and later prehistoric populations. These cobbles were subsequently picked up by streams tributary to the Potomac, e.g. Rock, Creek, Piscataway Creek (MD), Four Mile Run, and Holmes Run and subsequently utilized by Holmes phase and later prehistoric populations. While quartzite cobbles do occur south of this on streams like Neabsco and Powell's Creeks, they do not occur in similar abundance (Barse and Gardner 1982; DeLeonardis et al 1993; Torp et al 1993; Torp and Gardner 1993). Correspondingly, a reduction in density of Holmes phase occupation occurs.

In the late 1960s, Gardner and Charles W. McNett, Jr., noted that the most abundant point from the Inner Potomac Coastal Plain was the narrow bladed Savannah River, or Holmes, point, and that this point was invariably of quartzite. What is then proposed is a model in which the quartzite cobble rich locations were intensively quarried. Where these cobbles occur in proximity to the anadromous fishing stations, as at Piscataway Creek in Charles County, Maryland (Gardner 1977), the reduction and point production and point use functions (base camp) all occur in one location. This situation is similar, for instance, to the Williamson site in the Paleoindian model. Where the resources are separated for whatever reasons, the various functional components are similarly segregated. This would parallel the Flint Run Paleoindian model.

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PLATES

PLATE 1
View of Excavations, 44AX177

PLATE 2
View of Excavations, 44AX177

PLATE 3
44AX177, Feature 12-1

PLATE 4
44AX177, Trench Through Feature 12-1

PLATE 5
44AX177, Early Stage Bifaces and Flaked Pebble

PLATE 6
44AX177, Middle Stage Bifaces

PLATE 7
44AX177, Late Stage Bifaces

PLATE 8
44AX177, Unfinished Holmes Points

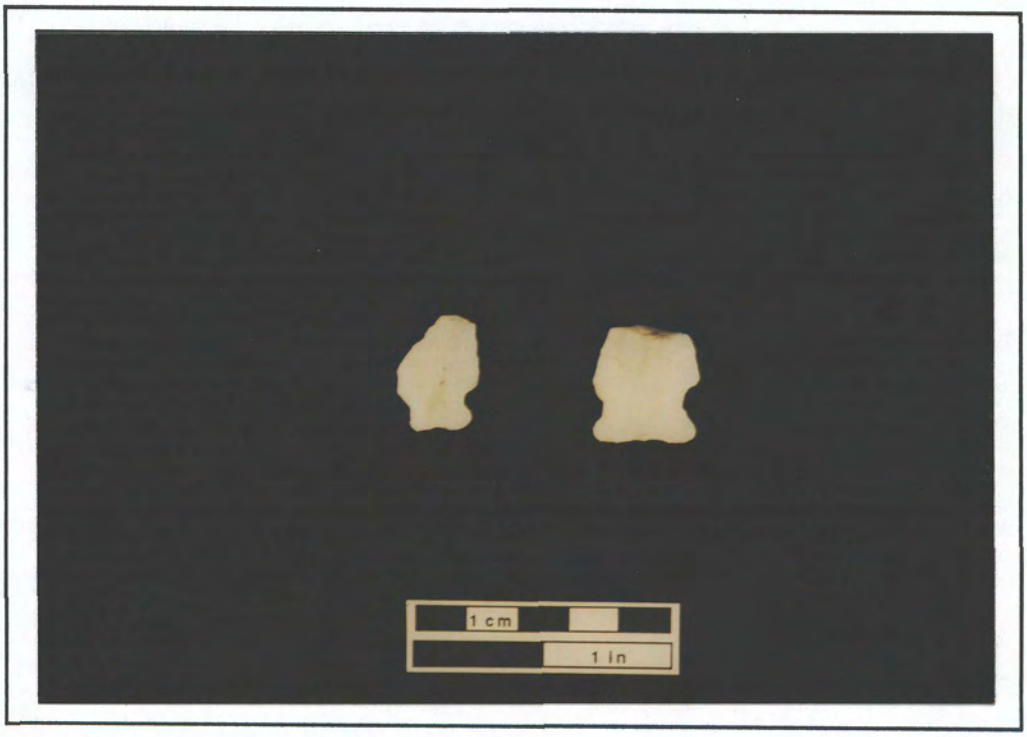

PLATE 9
44AX177, Halifax Points

PLATE 10
44AX177, Left to Right : Gunflint fragment, Late Woodland Triangle Point, Quartz Point Fragment

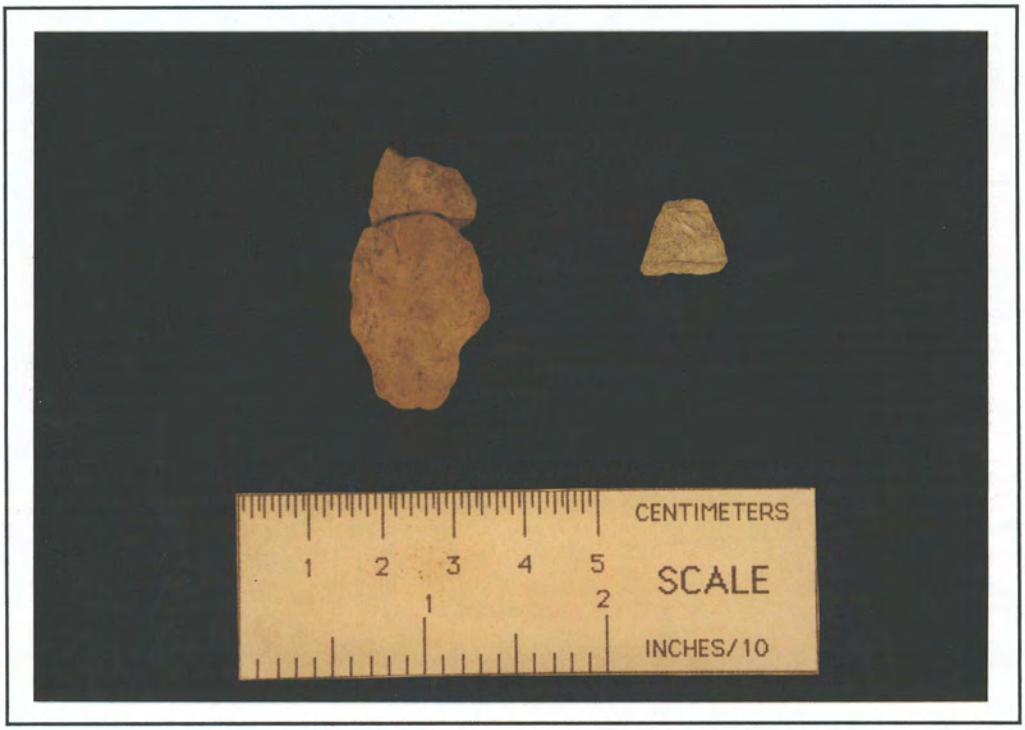

PLATE 11
44AX177, Hornfels Points

PLATE 12
44AX177, Cores

PLATE 13
44AX177, Drills

PLATE 14
44AX177, Scrapers/Unifacial tools

APPENDIX I

ARTIFACT DISTRIBUTION MAPS

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Figure I-4 : 44AX177 Plan Map Showing Fire Cracked Rock Counts from Excavation Blocks 15, 1, 14, 12 and 3 and Other Test Units
Figure I-5 : 44AX177 Plan Map Showing Quartzite Flake Counts from Excavation Blocks 15, 1, 14, 12 and 3 and Other Test Units
Figure I-6 :44AX177 Plan Map Showing Quartzite Flakes with Cortex from Excavation Blocks 15, 1, 14, 12 and 3 and Other Test Units
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Figure I-9 : 44AX177 Plan Map Showing Quartz Flake Counts from Excavation Blocks 15, 1, 14, 12 and 3 and Other Test Units
Figure I-10: 44AX177 Plan Map Showing Quartz Flakes with Cortex from Excavation Blocks 15, 1, 14, 12 and 3 and Other Test Units
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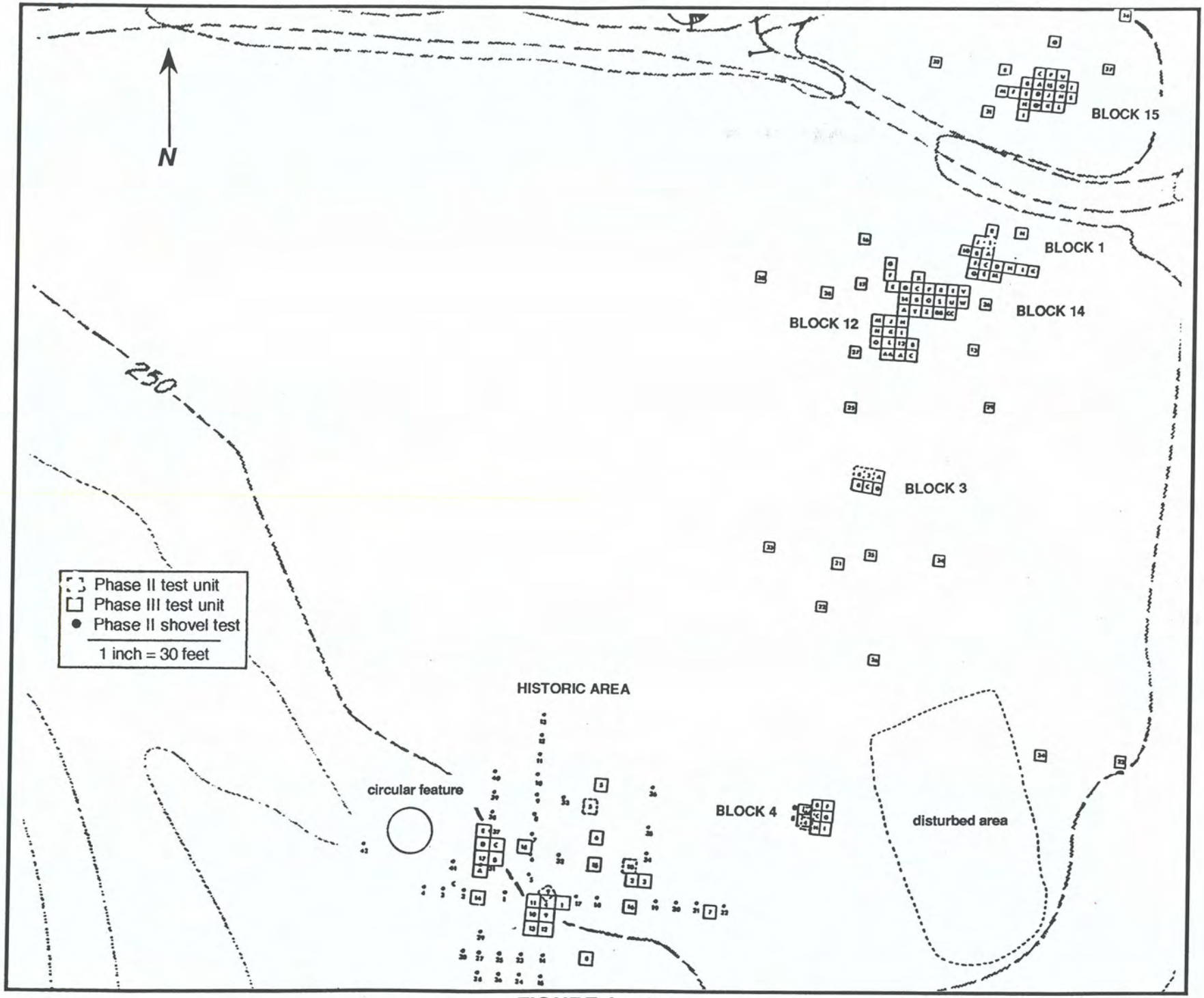

FIGURE I - 1
44AX177 Plan Map Showing Excavation Units and Topographic Features