Final Report on Phase II Archaeological Investigations on Portions of Amax's Proposed Littleton Mine Field and Littleton Field Haul Road, Schuyler, McDonough and Fulton Counties, Illinois

By

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PART 1
Final Testing Phase Report on Prehistoric Archaeological Sites in First Five Years Mining Plan Area

PART 2
Final Testing Phase Report on Prehistoric Archaeological Sites on Amax's Littleton Field Haul Road

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D.E.
EXECUTIVE SUMMARY

Archaeological investigation in the Littleton Field Five Year Plan area and along the Haul Road have identified a total of 185 prehistoric sites (121 in the Mine Field and 64 along the Haul Road). These sites range in age from approximately 10,000 to 950 years before the present. Although components have not been identified for all sites, a fairly clear pattern of utilization for the area has emerged.

Since many of the sites are multicomponent, we must discuss the various occupations in terms of components (site occupations of given cultural manifestations). Therefore, there are more components than sites. A heavy Archaic utilization of the area (90 identified site components) is manifested by numerous upland sites. The debris scatters of these sites are light but generally extensive. Since none of the sites can be assumed to be single component in origin, the associated tools and debris can seldom be sorted out as being characteristic of a particular component. Typical assemblages for such sites would include spearheads, butchering tools, hide processing tools, chert working tools and debris, milling stones, axes and fire cracked rocks. Site functions would vary from the most ephemeral use (i.e. loss or sharpening of a tool or perhaps a brief camp) to heavily occupied, multifunctional bases.

Especially heavy Early and Late Archaic utilizations of the area are indicated by 39 and 29 identified site components respectively, as opposed to 10 possibly Middle Archaic site components. Twelve site components are characterized as only Archaic or from a specific segment of the Archaic Period (e.g., Middle to Late) due to the lack of time specific artifacts. Multiple occupations are known to have occurred at 38 sites.
Considering the Archaic Period covered approximately 8,000 years during which cultures were continuously changing and various ethnic groups were passing through the area as a result of changing environmental and cultural factors, it is probably best to think of the remains of a particular cultural group as a thin and spotty veneer over the landscape. In themselves, none of the sites seem to offer the potential for notably furthering the understanding of the Archaic, but taken as a group they can contribute to the understanding of the complex mosaic of Archaic remains in western Illinois, particularly as concerns settlement patterns and technology. This potential can be realized through continued surface collection and by observation during top soiling.

Other than Archaic remains, we have only Woodland remains probably dating from about 1500 to 950 years ago. Sites of this period indicate a much more intensive usage of the area and a more durable record (due to the large proportion of these sites which contain subsurface features) than those of the Archaic. Surface debris is usually densely clustered and associated artifacts consist of pottery, sandstone abraders, and spear or arrow heads as well as other tools similar or identical to those of the Archaic. A notable difference in the debris of the two periods is that LaMoine River Chert flakes are much more common on Late Woodland sites than on Archaic ones.

Forty-eight sites have been identified with Woodland components. Although intact cultural deposits have not been verified on many of these sites, they have been present on each of the 14 sites subjected to subsurface testing. Additionally, subsurface features have been identified on two sites of unknown component in the Five Year Plan area.
The value of the Woodland sites lies in their potential for yielding high quality data on Late Woodland population increase and territorial expansion; on the history and socioeconomic and settlement patterns of Late Woodland peoples; the nature of the relationships between Bauer Branch people and their contemporary ethnic groups; Bauer Branch reactions to population pressure, resource stress, technological and agricultural innovation; climatic change; and to peaceful vs. violent interaction. All of the 48 Woodland sites within the Five Year Plan area and Haul Road area have the potential to contribute to the solution of these problems, but this should not be taken to mean all of each site must be excavated in order to gather the data available in the tracts.

The 12 sites located during this project, but not covered for Phase Two work, can presumably yield additional information ranging from a determination of the components represented to contributions to the various goals set for the understanding of the Archaic and Woodland cultures in the area. These sites include: Sc-434, Sc-435, Sc-436, Sc-456, Sc-457, Sc-458, Sc-469, Sc-472, Sc-475, Sc-476, Sc-477, and Sc-478.

A sample of the 37 sites in overgrown areas exhibiting a high enough density of archaeological material within their bulldozed transects to reward investigative efforts with significant data can be considered to have potential. Rather than list all these here, the universe from which this sample can be chosen is the 35 sites listed as Condition E on Table 3:1 and Sc-557 and Sc-561.

As has been discussed at various points, further archaeological research can be carried out during and combined with preliminary mining procedures.
such as land clearing and top soilting to make for a cost effective, yet worthwhile, program of information recovery.
PART 1

FINAL TESTING PHASE REPORT ON PREHISTORIC ARCHAEOLOGICAL SITES IN THE FIRST FIVE YEARS MINING PLAN AREA

By
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1.0 PHASE II WORK IN THE LITTLETON FIELD

1.1 Project Description and Purpose

This report has been prepared to present the purpose, methods, and results of a program of study on 124 archaeological sites in that portion of the uplands in Amax’s proposed Littleton Mine Field to be developed in the first five years of mining (Figure 1:1). The purpose of this program of survey and testing was to conduct controlled surface collections and/or test excavations on archaeological sites within the area which may have National Register potential; to process the resulting materials and data in the laboratory; and to write a report detailing the sites located and the results of the tests. This report will cover only the purpose, methods, and results of this Phase II report. Inasmuch as the sites covered herein cannot be evaluated without reference to data needs dictated by regional archaeological research status and goals, a brief section of past and present research and results is included as part of this report.

The area under study lies within Sections 11, 12, 13, and 14 of Littleton Township (T 3N, R 2W) and Sections 7 and 18 in Oakland Township (T 3N, R 1W). Exact bounds are indicated by the bold line in Figure 1:1. The area is typified by many narrow upland lobes overlooking the small tributaries to Sugar Creek. There is over 35 meters of relief locally, and most of the dissections plunge steeply from the nearly level upland till plain to the gentler grades of the major tributaries. Forest soils surround the dissected areas for a few hundred meters, but then rapidly grade into dark, organic prairie soils. It is upon the previously forested, upland lobes that the majority of prehistoric occupation seems to have taken place.
Figure 1:1 Permit Boundary and First Five Year Mining Area, Proposed Littleton Mine Field
The archaeological sites included in this report consist of 51 sites known from the initial survey (Green 1977), 16 sites which were discovered in cultivated fields during the survey portion of this program, and the additional 57 new sites (as well as 31 extensions of known sites) located in overgrown portions of the five year plan area. The sites are presented in three groups herein, organized by their study status and method of investigation. Of the 16 sites which have been surveyed only, four have produced sufficient information (mainly through investigation of extensions of these sites into the uncultivated areas) that they can be evaluated without further Phase II work. The remaining twelve untested sites are reported in Chapter 2.

One hundred and eight sites have been investigated by controlled surface collections, or by "bulldozer survey" and pieceplotting, and several have been supplementarily tested by excavations. Operations on many of these sites have been suspended as soon as any one condition of a scaled set of criteria (designed to indicate the presence of subsurface deposits) has been met. Otherwise, the sites have been dropped from consideration or multiple visits and collections have been made to extract the plowzone information (which forms the bulk of the record on these sites). The scaled criteria will be explained, along with site descriptions and results, in Chapter 3, while multiple collected sites are reported in Chapter 4. Chapter 5 describes sites dropped from consideration during testing.
1.2 Method of Phase II Investigations in the Littleton Field

1.2.1 Data Needs

Significance for archaeological sites is primarily measured by their ability to contribute data relevant to research problems (investigative potential), and their integrity and public appreciation value. A determination of significance must then be made in terms of the potential of these sites for providing important information with reference to research problems and data needs. As will be developed in the discussions below and as has been the case in past studies of Littleton Field, a high priority has been placed on identifying the location and characteristics of a large number of component units in the Late Woodland settlement system of the project area. This in turn has played a strong role in dictating the need for an investigative method which places a high priority on both identifying these often elusive Late Woodland sites, and supplying a sufficient body of data regarding the equally important non-Late Woodland occupations which are so common in the Littleton Field, but which cannot be counted on to contain intact subsurface deposits.

It is apparent that the best method for meeting these data needs is the use of multiple, controlled surface collections. These visits supply both an excellent site map and a much better representation of the diagnostic material needed to correctly ascertain the site's potential. As will be discussed in Chapter 3, due to deterioration of the predominant type of pottery in Woodland sites of the area (Bauer Branch Complex) many Late Woodland occupations are not identified until as late as the third visit. Also, since many sites are multicomponent, this multiple visit technique can do much
to debunk false associations or appearances of site integrity, just as it can strengthen and give additional weight to generalizations derived from previous visits. Especially relevant is the fact that most or all information on cultivated Archaic sites in such upland areas is in the plowzone. Multiple, controlled collections can exhaust the information potential of an Archaic upland site, rendering it unsuitable for consideration of any further significance.

An additional challenge has been to gather site data on the extensive non-cultivated areas of the proposed mine field. A rough count of 80 to 90 overgrown upland ridges presented a prospect of large numbers of difficult-to-detect sites. Almost all of these ridges had been farmed earlier in this century, but with changing agricultural methods and land use practices, they had reverted to scrub and timber.

Investigations on sites which are not cultivated has always been an expensive and inefficient venture. But, in this case, it has been dealt with in a radical and effective manner which points out the shortcomings of more traditional methods such as shovel testing and test pitting on overgrown sites. These techniques are a "hit and miss" operation at best (more often miss than hit on anything but the most dense sites), and usually yield relatively few sites when compared to cultivated areas. For overgrown areas in the proposed Littleton Mine Field, however, a technique of transect bulldozing (within the vertical limits of the old plowzone) and pieceplotting artifact locations has provided far superior coverage to any available through shovel testing. Such transects located 57 new sites and 31 extensions of known sites on the 90-odd
ridges. Since most of these sites are on relatively narrow ridges, site size is effectively constrained, so that a single transect can define the site limits. This method, the multiple surface collection technique, and the limited subsurface testing utilized in this study will be described in greater detail below.

Field methods used in this study represent new and realistic alternatives to traditional methods. These methods demonstrably multiply the amount and relevance of information gained, as well as reducing or matching the expense of, practices designed for the investigation of complex, archaeological unknowns (such as deep middens or buried sites). For, so often, these time worn techniques are routinely applied in such a manner that the screening of sparse, Archaic site plowzone, or the characterization of single component, specialized function Archaic sites as "just a few scattered flint chips" has become the accepted norm. With these methods an attempt was made to deal with the full range of prehistoric behavior, instead of the more restricted scope of data available from large, complex, densely and multiply occupied sites.
1.2.2 Field and Laboratory Techniques

Methods for this study consisted of two primary strategies. In cultivated fields, multiple controlled surface collections in conjunction with limited tests and plowzone removal on a small sample of sites was carried out. Potentially habitable areas which were not cultivated (i.e. pastures or overgrown lobe ends) were investigated via bulldozer transects. The cultural materials located in these transects were then plotted onto 1:100 scale five foot contour base maps in order to draw conclusions of site size and internal density.

Since all sites in the study are in the loess capped uplands, they would not be subject to significant amounts of post occupational soil deposition. Artifacts would remain essentially in place, unless disturbed by a subsequent occupation. Although plowing mixes and churns the soil to a uniform depth, the actual horizontal movement of artifacts is minimal and can be accounted for (Talmage and Chesler 1977:4-5; Roper 1976). That is, artifacts will in general be found within a reasonable distance of their original location prior to plowing unless some definite force (such as extensive erosion by gullying) moves them. The resulting artifactual patterns, be they in plowed fields or overgrown areas, then present a "blurred" representation of the original distribution.

Controlled surface collections in cultivated fields were carried out as an initial total piec plotting of artifactual material, followed by return visits after the soil had again been turned and allowed to weather. Opportunities for revisits varied significantly between differentially cultivated fields, but all worthy cultivated sites received a single
total collection.

All artifactual material on a site was individually flagged and given a pieceplot number and exact location. Pieceplots were shot-in utilizing a transit or Theodolite from an arbitrary mapping point located convenient to the scatter. Permanent stakes were placed outside the field edges. These and all relevant field edges were also shot-in, in order to match readings taken on visits subsequent to the first collections. Many of these "permanent points" were lost due to intrusions by farm equipment. However, remapping of field boundaries allowed subsequently collected material to be placed on the site maps quite confidently.

Once sufficient field results were developed, three Late Woodland sites displaying different densities and patterns of material were selected for partial plowzone removal. An area of 10% or less of these sites was removed to verify the presence of subsurface features (see Sc-264, Sc-268, and Sc-348 [3.2]). These verifications and a very few casual tests (mostly on uncultivated sites) are the total of subsurface investigations for this project.

Uncultivated areas were investigated with placement of shallow (ca. 8 to 10 centimeters) bulldozer transects. A small bulldozer with a six foot blade was used with two archaeologists accompanying the operator. Most uncultivated areas consisted of narrow ridges and lobe ends, which received a single or occasionally a double transect centered near the ridge crest. More extensive ridges and larger pastures received a pattern of
transects (see Sc-268 South [3.2]) normally spaced 50 to 75 meters apart.
Following several good rains, the transects were carefully surveyed, plotting
their locations and all artifacts on a set of five foot contour maps at
1:100 scale. The transects generally were about 150 centimeters wide with a
30 to 40 centimeter high back-dirt pile. Back dirt usually traveled about
2 to 3 meters along the trench before being deposited. The transects were
walked a second time about one month later, but little additional material
was located.

Once in the laboratory, records were properly checked and filed.
Materials were given accession numbers into the University's collections.
Field readings were used to create pieceplot maps for each site. These were
reduced to fit the five foot contour maps, and then xeroxed down to a
scale suitable for publication. Materials were washed and then sorted.
All functionally and chronologically diagnostic material was labeled, inven-
toried, and described before being put onto shelves and cabinets. Other
materials were sorted and stored. Subsequent visits to each site yielded
records and materials which were treated in the same manner.

The site descriptions in Chapter 2 through 4 have been drawn up from
these maps, inventories, and field journals. Diagnostic material has also
been tabulated (see Appendix A) and a selection of the projectile points
and pottery has been illustrated (see Appendix B).
All sites which received extensive pieceplotting (with the exception of most bulldozed transects) are accompanied by site maps. Although only chronologically diagnostic material is given special treatment on these maps, they are far superior to the general run of site surface investigations. The distributions for each site show clearly definable horizontal limits and intensities clearly attributable to prehistoric activities. Exact pieceplotting yields pictures of sites with definite edges and discretely identifiable intensifications in certain areas. In spite of the "blurring" introduced by cultivation, it can be assumed that on those sites for which multiple occupational influences can be ruled out definable traces of on-site patterning will be present.

Perhaps the most consistently striking aspect of these maps is the appearance of dense and distinct clusters of debris, the majority of which have been defined as Woodland in origin. These are generally symmetrical and are present in the form of 30 to 50 meter diameter clusters (see Sc-262, Sc-264, Sc-265 East, Sc-323, Sc-323 South, Sc-461, and Sc-526 [3.2] for some of the clearest examples of this), or elliptical bands (see Sc-257 and Sc-290 [3.2]) on sites where occupation is limited. On heavily occupied Woodland sites (see Sc-265 and Sc-317 [3.2] as best examples of this), this pattern is visible only in sharp edge delineations present on larger clusters or possibly a series of superimposed clusters.

This form of surface scatter is in sharp contrast to the majority of scatters of clearly Archaic origin. Although clear limits and symmetrical
patterning occurs on some of these sites, a general appearance of diffuseness is present. The few Section IV sites diverging from this pattern (see Sc-361 [4.2], for example) are in all probability Late Woodland sites which have yielded no diagnostics.

The implications of such distinct surface patterning are clearly linked to activities and occupational/site usage. Although variations in sedentism is a likely explanation, seasonal and functional factors would require in-depth, qualitative comparisons between various prime examples. That is, although increased sedentism in the Woodland period is nothing new, these controlled collections present the possibility of examining the trend in a refined manner, utilizing the comparative Archaic data for this same area.

1.3 Prehistoric Archaeology in the Littleton Field

In order to understand the current state of prehistoric archaeology in the Littleton Field, it is best to present the broad outline of prehistory as it is known to date for the region. Although most of the specific prehistoric manifestations are known in other areas of the Midwest and some occur throughout much of the United States, it has become obvious that upland west central Illinois has unique information to offer with regards to extra-regional as well as regional archaeological problems. Conrad (1981) has provided a recent examination of the archaeology of upland west central Illinois. It is from this study that the first really broadly based definition of this area's upland prehistory has emerged. Table 1:1 is adapted from Conrad (1981:252, Table II) and summarizes west central
Illinois prehistory. Of particular interest in the following chapters by Conrad and Green will be the periods labeled Early, Middle, and Late Archaic, Late Woodland and those climatic and environmental changes following the Preboreal Episode (post 8000 B.C.).

Conrad (Section 1.4) discusses the pre-Woodland period utilizing the entire collection of Littleton Field and Haul Road Archaic projectile points. Green (Section 1.5) discusses Woodland occupations, also synthesizing all available data from the various investigations and salvage excavations carried out in the area. Conrad (Section 1.6) then discusses further understanding of prehistoric chert usage patterns gained during this segment of Littleton Field study.
1.4 Update on the Archaic Period in the Littleton Project Area
by Lawrence A. Conrad

1.4.1 Introduction

As pointed out in past studies the Littleton Mine Field and Haul Road offer the potential to contribute to an understanding of Archaic settlement patterns. Though Western Illinois University intends to continue to monitor these sites and to gather additional data, it is already apparent that the data is available for the gathering through controlled surface collections. This update presents the data gathered to date and an interpretation of its bearing on questions of settlement patterns and climatic change. Phase II sites presented in this section are plotted on Figures 1:3 and 1:4a-c.

1.4.2 Paleo-Indian

The earliest recognized diagnostic cultural material recovered in west central Illinois are fluted points which probably date from the time of the Two Creeks Interstadial, a relatively warm period during the Wisconsinan Glacial Stage, approximately 12,000 to 11,000 years ago. In Illinois, the term "Paleo-Indian" refers solely to those people using fluted points and is not strictly synonymous with the term as used on the Plains and in the south-western United States. The limited evidence available from east central North America suggests caribou may have been hunted by at least some groups (Funk, et. al. 1970; MacDonald 1968) and mastodons may have been hunted by others (Wittry 1965; Palmer and Stoltman 1976; Anonymous 1979). The importance of these animals in their overall resource base is not known. In fact, very little is known about these people at all, though a statewide project is underway to study the available material from this period.

The great interest in the points of this period on the part of collectors and some scholars has led to the careful scrutiny of numerous sites
producing them. This scrutiny has resulted in the definition of a sizable number of camps, some of which are rather substantial. Paleo-Indian points found in western Illinois include Clovis (Bell 1958:16-17), Folsom (Bell 1958:26-27), and Lincoln Hills Fluted. The latter point has been defined by Howard Winters. These points are generally larger than Clovis points but the morphology is similar. Fluting was accomplished utilizing a Folsom nipple in the middle of a Clovis beveled base (Winters, personal communication). Other artifacts associated with fluted points include bifacial knives as well as gravers and endscrapers.

Dates for Clovis and similar points range from 11,500 to 11,000 B.P. for sites on the Plains and in the Southwest (Haynes 1970) and average 10,500±50 at the Debert site in Nova Scotia (MacDonald 1968:53). During this period, the temperatures in west central Illinois were probably 30°F to 50°F lower than at present (Daugherty 1968:66) but the winters may actually have been warmer, since the glacier would have held back the coldest arctic air (Bryson and Wendland 1967:284). Many paleobotanists feel the unglaciated portions of the Midwest were covered by a spruce forest (Martin 1958; Wright 1968:82), but others (Bryson 1966; Bryson and Wendland 1967; Brown and Cleland 1968) feel the environment was one of a mosaic of spruce and deciduous forests. The latter view seems to explain the wide variety of floral and faunal macrofossils which appear to date from this period. It is likely most of the animals known historically from the area were in place by this time. In addition to these animals, mammoths, mastodons, musk oxen, caribou, giant moose, peccaries, giant beavers, and/or dire wolves were possible or probable components of the local fauna. The lack of precisely
dated fossils of these animals in west central Illinois prevents more definite statements on the matter.

Between approximately 11,000 and 10,500 B.P., the glacial climatic conditions came to an end with the beginning of the Preboreal Episode, even though the ice sheets still covered much of northern North America. An increase in temperature at this time led to the rapid demise of the spruce forests in Illinois and their replacement by deciduous forests and/or prairies (Bryson, Baerreis and Wendland 1970; Bryson and Wendland 1970; Wright 1968:78).

As of this writing no obvious Paleo-Indian material has been recovered from the project area.

1.4.3 Early Archaic

With the climatic changes marking the end of the Pleistocene, apparently between 11,000 and 10,500 B.P., there were other major changes in the environment which had profound effects on the aboriginal subsistence base and settlement patterns. The demise of the spruce forests, which are notoriously low in human carrying capacity (Butzer 1964:137-138) (at least in the high latitudes), allowed an expansion of the richer oak-hickory forests, the preferred habitats of deer and elk, and perhaps of the prairies. If we subtract the mean of 150 years Wendland and Bryson (1974:18) suggest cultural change lags behind climatic change, due partially to the lag time in botanical reaction, we should expect changes in the archaeological record between 10,850 and 10,350 B.P. This is the time range for the shift from fluted Folsom points to unfluted lanceolate points (see Irwin 1971:47 for Folsom time span).
A markedly heavier concentration of hunting camps on the upland inter-fluves probably reflects a much larger population and perhaps a shift from the hunting of at least some animals adapted to the spruce forests such as caribou and mastodons, to a heavier dependence on the hunting of deer and elk. Faunal remains from Graham Cave, an upland Prairie Peninsula site near Columbia, Missouri, supports the suggestion that deer were the major prey during Early Archaic times and indicate turkeys, rabbits, raccoons, and hickory nuts were important dietary supplements (see Klippel quoted in Griffin 1968:131).

Though we can identify with a high degree of confidence a number of point and/or knife types which were made during this period, we can say little else on the basis of the data currently available for west central Illinois. (Point/knife types assignable to this period fall into two very broad categories, i.e., unfluted parallel-flaked lanceolates and stemmed and notched forms.) The available data for upland west central Illinois consists almost entirely of surface collections made on single visits to perhaps a thousand sites which have demonstrable Early Archaic components (this does not include data gathered from collector interviews). Roughly 50% of these sites are known to be multiple component while another 10% are known only from the recovery of single items. In regard to the remaining sites, it can only be said there is, as of yet, no evidence of occupations other than by participants in a single Early Archaic phase. However, it is a virtual certainty that additional visits to these sites would result in the discovery of artifacts diagnostic of additional phases on many of them. Even in the case of verified single component sites, the likelihood
of numerous revisits by its tenants make size figures of questionable value except to say a particular spot was favored.

As most of the surfaces available in the lowlands during Early Archaic times are currently buried under alluvium, we cannot say that use was being made of those areas in the central Illinois Valley. However, at Koster, a talus slope site in the lower Illinois Valley, a dense .3 hectare midden up to 30 centimeters thick was formed. This deposit yielded large manos and metates, adze fragments, and bone tools, as well as chert tools and weapons, remains of aquatic and terrestrial animals, pecans, and apparent living floors, in addition to human and dog burials dating from approximately 8400 B.P. or near the end of the Early Archaic (Struever and Carlson 1977; and Anonymous 1976). The available evidence suggests the upland sites are hunting camps, but this may be because those artifacts recognized as diagnostics are part of the hunting-butcherinig assemblage. It is possible that some of the extracting stations of indeterminate cultural affiliation are actually assignable to this period.

Unfluted Lanceolate Traditions

Several point types which are considered to be late Paleo-Indian hallmarks on the Great Plains are considered to be Early Archaic in Illinois because the limited evidence suggests the way of life of their manufacturers was the same as that of their local contemporaries who made stemmed and notched points. Distributional evidence tends to support this view. Unfluted, parallel flaked lanceolate forms include components of the Agate Basin Cluster with affinities to the northern Plains, the Dalton Cluster which is widespread throughout the Midwest, Southeast, and Great Plains,
Quad-like with southeastern links, and Hi-Lo with western Great Lakes affinities.

**Dalton Cluster** (Bell 1958:18-19):

Points from this cluster are consistently found in the lower levels of Archaic deposits in caves, rock shelters, and open sites from North Carolina (Coe 1964) and Alabama (DeJarnette, Kurjack, and Cambron 1962) to Missouri (Klippel 1971) and Arkansas (Thomas 1962) and with the bones of extinct bison on the Plains (Wormington 1957:115). Only modern faunal material is found in the same levels as Dalton points in the Midwest (Fowler 1958; Klippel quoted in Griffin 1968:131) and the Southeast (DeJarnette, Kurjack, and Cambron 1962).

Radiocarbon assays for these points generally range from approximately 9000 to 10,500 B.P. (Goodyear 1974:2; Tuck 1974:73), but assays younger than 8000 B.P. have been recorded (Klippel 1971:22).

There are two Dalton points from multicomponent sites in the survey area. One from Sc-277 is made of high quality Burlington Chert while the other from Sc-476 is either of Burlington or Keokuk Chert. The former is heavily basally and laterally ground as far down as the widest point and is heavily resharpened from there down; the latter is lightly ground on the base and in the notches and has pronounced, even serrations. It has an early "impact fracture" running the length of the blade, a later twisting fracture removing the distal end, and another break running up the same side as the impact fracture. Presumably, this specimen was used as a heavy duty knife. These points were found on either side of the interfluve, between the West Branch
and the major western tributary of the Bauer Branch of Sugar Creek. Both points were at the extreme heads of minor tributaries of these streams at the edge of the undissected upland or forest soils (Figure B:1a and 1b).

**Agate Basin** (Perino 1968:2-3):

Agate Basin points are known on the Plains from Texas to southern Canada and as far east in the North Central States as Ohio (Perino 1968: 2-3). The most common faunal associations with these points on the Plains are extinct species or subspecies of bison. These points have not been found in datable context east of the Mississippi but they have been dated at several sites on the Plains from roughly 10,000 to 10,500 years B.P. (Irwin 1971:47).

While Agate Basin points are clearly parallel flaked lanceolates, they are not really similar to the concave based lanceolates found in Illinois. This, along with their more westerly distribution, suggests they have a different evolutionary history. They seem to have a Plains origin and appear in western Illinois without immediate antecedents there. A study comparing the distribution of these points and of prairies east of the Mississippi might prove very informative.

Three delicate lanceolate specimens are classified as Agate Basin points. One (from Sc-270) has been heated and is badly battered on both ends, aboriginally, from modern farm machinery, or both. Though it exhibits parallel flaking and a relatively thin (7 mm.) lenticular cross-section, it does not exhibit obvious grinding. The second specimen (from F-2618) is intact except for a missing tip and a damaged base. It, too, had a thin
(7 mm.) lenticular cross-section, exhibits basal grinding, and it is parallel flaked. The third specimen (from Sc-348) has both ends missing. Though slightly thicker (8 mm.), it has fine parallel flaking and remnants of heavy basal grinding. All three specimens seem to be of Burlington Chert. Though their condition makes exact measurement impossible, they seem to have measured between 60 mm. and 78 mm., making them the three smallest in the W.I.U. collection of 20 Agate Basin points. Two of the specimens are from dissected uplands above Sugar Creek and its West Branch. The third specimen is from an area of incipient dissection in the head waters of an unnamed tributary of Sugar Creek. All of the sites are on forest soils. Agate Basins were found on F-2618, Sc-348, and Sc-270 (Figure B:1c and 1d and Green 1977 Plate 1a [Green 1977 Plate 1c and 1e are no longer considered Agate Basins]).

Early Archaic Notched and Stemmed Points

One of the most surprising discoveries in the archaeology of the eastern United States during the last three decades was the great antiquity of the stemmed and notched spear heads and knives now recognized as part of the Early Archaic assemblage. Stemmed and notched forms recovered by the survey include Hardin Barbed (eastern members of the Scottsbluff Type Cluster of the Great Plains), components of the Theban Type Cluster of the Central States, and western outliers of the Kirk and Bifurcated Base Clusters of the Southeast, Northeast, and Midwest. In addition, there are various fragmentary, heavily reworked or unique specimens which cannot comfortably be placed into any of these categories but which, because of heavy alternate left beveling, serration, or type of flaking seem to date from this period.

Coe's original Kirk Type Cluster included Kirk Corner Notched, Kirk Stemmed, and Kirk Serrated, with Kirk Corner Notched being earliest and Kirk Serrated being latest on the basis of his excavations at the Hardaway Site in North Carolina. Broyles (1968:65-67) subdivided the Kirk Corner Notched into large and small varieties on the basis of the varieties being found in separate levels at the St. Albans Site in West Virginia. On the basis of his excavations at the stratified Rose Island Site in east central Tennessee, Jefferson Chapman discussed the "Kirk Corner Notched Cluster" on the basis of 29 points which he divided into five Kirk variants. Chapman (1975:122) minimized the chronological significance of the large and small varieties of Kirk Corner Notched. Since, as would be expected, the generally accepted Kirk points from New York, Pennsylvania, West Virginia, North Carolina, and Tennessee are not identical, those from western Illinois should not be expected to be isomorphic with a particular sample from those states.

Eight large Kirk points, two probable large Kirk fragments, nine Neuberger points, one apparent Decatur point, one drill on a possible Decatur point, and one unclassifiable Kirk-like point make up the Kirk Type Cluster sample from the survey. It is surprising to note the absence of small Kirks in our sample, since they are approximately half as common as large Kirks along the Federally Assisted Project (FAP) 407 highway corridor across west central Illinois (Conrad 1981:117).

Large Kirks:

Eight points are classified as large Kirks with considerable confidence. They include three essentially complete specimens and one distal, one median, and three proximal fragments. The longest specimen is 78 mm. long but one
lacking the distal end would probably have been slightly longer. The shortest ones are all broken but an estimate of 50 mm. is probably relatively close. Shoulder widths range from 24 mm. to 38 mm. while thicknesses range from 6 mm. to 8 mm. Six of the specimens have pronounced, even serration and the other two have fine, even serration. One has a pinkish cast suggesting heat treatment. All are made from material within the range of Burlington Chert and three are of materials within the range of Keokuk Chert.

All of these points were found on multicomponent sites on formerly wooded ridges in the heavily dissected uplands. Two of them were found on one site (Sc-240) and another site (Md-24) produced an additional fragment which is very likely the tip of a serrated large Kirk.

Broyles obtained an assay of 8850±320 B.P. for a carbon sample recovered with large Kirks at St. Albans. This date seems reasonable.

Large Kirk points were found on the following sites: F-2605, Md-24, Sc-212, Sc-240(2), Sc-268, Sc-440, and Sc-442 (Figure B:2b-d and Green 1977 Plate 1g, k, 1).

**Neuberger Points** (Conrad 1981:62, 71-72):

Two distal and four proximal portions and three essentially complete specimens compose the Neuberger collection from the survey. The shortest specimen is 53 mm. long while one of the distal fragments, at 61 mm., is longer than any of the essentially complete ones. Maximum widths range from 32 mm. to 41 mm. On two of the points, the maximum width is below the barbs. All but three 7 mm. specimens are 6 mm. thick. Two of the
essentially complete points were made on much more ovate preforms than any of those from the FAP 407 survey, suggesting the presence of a different micro style in the Littleton Field area. Two of the other specimens had a trianguloid blade and the only other about which a determination can be made had a pentagonal blade. All are of material within the range of Burlington Chert and three are within the known range of Keokuk Chert. One has light, five have moderate, and two have heavy basal grinding. None appear to have been heated.

Seven of the specimens were found in relatively flat ridge tops in heavily dissected areas in the mine field and the other two were found on ridge tops in heavily dissected areas on the Haul Road. All are from forest soils. The clustering of Neuberger points along the West Branch of Sugar Creek and its tributaries is probably only partially a result of the more intensive survey in that area, as most of the rest of the mine field was covered thoroughly in the 1975-76 survey.

Seven of the points were found on demonstrably multicomponent sites and one other is known only from a bulldozer cut, but one from a plowed field may be from a single component site. Site Sc-217 covered an area approximately 100 m. x 100 m. and yielded a Thebes point in addition to the Neuberger, three biface fragments, one gorget (?) fragment, one scraper, four pitted stones, one core, fourteen flakes, six broken chert nodules and cobbles, 126 rough stones, and modern glass fragments (Green 1977:66-67). Judging from the numerous pitted stones and abundance of rough stone, this site is not the hunting camp typifying Early Archaic occupations in the FAP 407 corridor (Conrad 1981:67). If it does not also have a Late Archaic or
Woodland occupation, it may be a more substantial Early Archaic than most. Judging from its location, the former explanation is the more likely. This site is not within the current permit area.

Neuberger points were found on the following sites: Sc-217, Sc-254, Sc-270, Sc-323, Sc-349, Sc-440, Sc-442, Sc-470, and Sc-535 (Figure B:3a-g and Green 1977 Plate 2b).

Other Kirk Type Cluster Material:

Two probable Kirk fragments, a possible Decatur point, a drill made on a possible Decatur point, and a large portion of a Kirk-like point complete the Kirk Cluster collection from the Littleton Field and Haul Road.

Two medial fragments which have pronounced serration, left beveling, barbs, and flaking within the range of Kirk points are classified as probable Kirk fragments. One fragment of unidentified grayish brown chert is from Sc-468, a formerly forested multicomponent site on the dissected upland overlooking a deep gully running west to the West Branch of Sugar Creek. The other specimen, which has been thermally altered, is from Sc-462, a formerly forested site on an interfluve in the dissected uplands between two tributaries of Bauer Branch. This site which yielded a Thebes point, as well as numerous cobbles (some of which were utilized), unworked pieces of igneous rock, sandstone, and chert, as well as chert tools, has not been completely analyzed, since it is not within the permit boundary. If this 300 m. x 50 m. site does not have later components, it may be an Early Archaic base camp and warrants monitoring (Figure B:2a).
One "fractured-based" point from F-2604, a prairie edge site in an incipiently dissected area in the head waters of Otter Creek, may be a Decatur point (Bell 1960:28-29). This site was defined as a light scatter measuring 100 m. x 100 m. and yielded a glacial cobble metate (?), a sandstone abrader (?), seven chert flakes, and one piece of igneous rock. This point resembles a Neuberger point, particularly in the short base and the placement of the notches, but the quality of workmanship is not that of a Neuberger and the beveling would be unusual also. These characteristics combined with the either laterally flaked or unworked base suggest it may be a Decatur point. The range and relative frequency of this point, defined by collectors in Alabama, is unknown but it does apparently occur occasionally in west central Illinois (see Conrad 1981:Plate 11, second row, middle). This point measures 52 mm. x 20 mm. x 7 mm. (Figure B:2f).

A drill from Sc-259, a multicomponent site on a formerly forested ridge overlooking an unnamed tributary of Sugar Creek, may have been made on a Decatur point, but the base is too badly battered to be certain. The placement of the notches and the quality of workmanship suggests it is. This drill measures ca. 70 mm. x 34 mm. x 8 mm. The material of both of these artifacts are of material within the range of Burlington Chert (Figure B:2g).

A final Kirk Cluster artifact is a rather small point/knife of unidentifiable chert with a twist fracture on the point. The finely serrated blade is very much like that of a small Kirk but the side-notched and deeply concaved base prohibit a firm placement within the specific type. This point
is from Sc-336, a formerly forested multicomponent site on the Haul Road in heavily dissected uplands (Figure B:2e).

Theban Type Cluster

St. Charles (Bell 1960:82-83) or Dovetail (Luchterhand 1970:31-32), Thebes (Perino 1971:96-97) or Cache Diagonal Notched (Winters 1963:25), Bristol Diagonal Notched (Winters 1963:25) and Plevna (Cambron and Hulse 1975:106) points are generally considered components of what Winters (1963:20) called the Thebes Type Cluster. We also include Winters' Pulaski point, though he does not. Unfortunately, Perino (1971:96-97) applied the name "Thebes" exclusively to Winters' Cache Diagonal Notched and the designation has gained general acceptance. We have suggested the name "Theban" for the cluster (Conrad 1981:73). Though there is no firm date for this cluster it is felt it is probably related to the Kirk Cluster. Based on the trend for Kirks to get larger, we have placed it after Kirks.

The Littleton survey sample includes eight definite and two probable complete or fragmentary Thebes "points" (actually knives), one complete and one fragmentary St. Charles point, one Pulaski point, one Theban Type B point, four Theban subtriangular knives, and one untypable probable Theban Cluster point.

Thebes Knives (Perino 1971:96-97):

Seven complete or essentially complete specimens, one probable distal end, one endscraper, and one probable blade compose the Thebes sample from the Littleton Field and Haul Road. The projected lengths of the essentially complete specimens ranged from 58 mm. to 97 mm., but that depends upon the
amount of resharpening. The intact bases range in width from 27 mm. to 59 mm. compared to a range of 30 mm. to 40 mm. in the FAP 407 sample and 29 mm. to 46 mm. in Luchterhand's (1970:61) sample from the lower Illinois Valley. The second broadest base was approximately 48 mm. and the third was approximately 40 mm. Two or 25% of our sample is smaller than any from FAP 407 and probably two are larger. The same holds true for Luchterhand's sample. Two of the specimens are of LaMoine River Chert and the remaining eight are of material within the range of Burlington Chert. One is also within the range of Keokuk Chert.

Thebes knives are widely scattered in the survey area. Six are from heavily dissected areas and four are from areas of incipient dissection. All were on forest soils. None of the blades were isolated finds; six were on obviously multicomponent sites, one was from a pasture, and three were from possibly single component sites if Kirk points (found on Sc-462) and Neuberger points (found on Sc-217) were made by the same people who made Thebes blades. If not, only one site, Sc-332, may be considered a potentially single component Thebes site. This approximately 6 m. x 6 m. scatter yielded the blades of an Early Archaic drill of LaMoine River Chert (not from the Stoney Creek source), six flakes, one cobble, one piece of sandstone, one piece of limestone, and one pebble. Thebes points were found on the following sites: F-2603, F-2606, Sc-217, Sc-270, Sc-288, Sc-301, Sc-332, Sc-437, Sc-452, and Sc-462 (Figure B:4a-c and Green 1977 Plate 1p, q, r).

St. Charles or Dovetail (Bell 1960:82-83; Luchterhand 1970:31-32):

One complete specimen and one blade make up the sample of St. Charles or Dovetail points from the survey. The complete specimen measures 59 mm.
long and 30 mm. across the shoulder. This point is within the lower range of the FAP 407 sample but shorter than any of Luchterhand's and narrower than his mean shoulder width of 33 mm. The blade of the other specimen is 67 mm. long, indicating the complete specimen would have been an estimated 78 mm. long, within the mid-range of the FAP 407 sample and the lower range of Luchterhand's sample. There has been some flaking on the broken proximal end of the blade. Both specimens are of material within the range of Burlington Chert.

One specimen (Sc-278) was collected in the dissected uplands above the West Branch of Sugar Creek in the permit area and the other (Sc-439) was in the dissected uplands overlooking Sugar Creek on the Haul Road. Both were formerly wooded, multicomponent sites (Figure B:4e and Green 1977 Plate 1n).

**Theban Subtriangular Blades** (Conrad 1981:89-90):

There are four Theban subtriangular blades from the survey. They are quite similar in size, ranging from 82 mm. to 89 mm., but one is unusual in that, with the exception of pronounced left beveling on either side, it is unifacial. All are made of material within the range of Burlington Chert but two are also within the range of Keokuk Chert. One presumed Burlington specimen has the gloss associated with heating. Three of the blades are well worked but the other which is made of a coarser fossiliferous chert is less well worked. Two have relatively heavy basal grinding. All of the specimens are from the mine field with two being from within the permit area. Three of the sites are on forest soils in the dissected uplands and the fourth is on prairie soil in an area of incipient dissection. All of the sites are
demonstrably multicomponent. Theban subtriangular blades were found on sites Sc-219, Sc-280, Sc-335, and Sc-340 (Green 1977 Plate 3b, d-f, q).

**Pulaski Point** (Winters n.d.):

A single Pulaski Point from site Sc-219 (described under Theban Subtriangular Blades) was found in the Littleton Field but not in the current permit area. This finely serrated blade apparently measured 74 mm. x 47 mm. x 8 mm. before the tip was broken. The base is heavily ground. This Burlington Chert point is another example of the broad blades so unusually common in the Littleton Field (Green 1977 Plate 1o).

**Miscellaneous:**

A medial section of a large point (Figure B:4d) with barbs intact seems best assigned to the Theban Cluster. It has a 7 mm. thick lenticular cross-section without obvious beveling. It seems to be a large (45 mm. wide) example of what we called Theban Type C in the FAP 407 study (Conrad 1981: 89, 91-92). It was found on Md-809, a formerly forested site on the Haul Road in the dissected uplands overlooking a tributary of Sugar Creek. Due to poor visibility and the impact of the Haul Road, we are unable to determine whether or not the small collection from this site is representative.

**Hardin Barbed** (Bell 1960:56-57):

Munson (1967) and Luchterhand (1970) point out the close similarities and apparent relationship between Hardin Barbed and Scottsbluff points. Harrison, Karch and Springer (1977:46-48) would categorize some of our specimens as Scottsbluff Barbed, Scottsbluff Short Stemmed and Scottsbluff Long Stemmed. They differentiate between Scottsbluff Barbed and Hardin Barbed on
the basis of the former having thin ovate blades with biconvex cross sections, broad, ovate barbs and shallow multiple fluting or basal thinning, while the latter have thicker blades, triangular outlines, rhomboidal cross sections, extremely pointed barbs and deep basal thinning. Though all of these attributes are present in our sample, they do not covary. It appears the major source of variety in our sample is resharpening. We would class their Scottsbluff Short Stemmed and Long Stemmed as Hardin Expanding Notched. Their Scottsbluff is our Short Stemmed Hardin.

Lukterhand (1970:10) used all available carbon assays and suggested a range of 7500 to 10,000 B.P. for the Scottsbluff Cluster. We prefer Irwin's (1971:47) range of approximately 8500 to 9000 B.P. based upon evaluating and interpreting the available dates for the Cody Complex, of which Scottsbluff is one component.

The Hardin Barbed collection from the area consists of twelve definite and one probable examples. Of the definite examples, seven are essentially complete, one is represented by the proximal end of the stem, two have most of the stem and the proximal portion of the blade, one is a complete blade and one has the complete blade and a reworked stem. Four of the specimens are short stemmed, four are probably long stemmed and one is of the expanded notched variety. No determination can be made on the remaining five. At least eleven of the specimens are within the range of Burlington Chert and a twelfth thermally altered one may be. Of these, at least five are also apparently within the range of Keokuk Chert. The thirteenth point is of a striated brown chert of unknown origin. The collection evidences so much breakage and resharpening that few worthwhile measurements can be taken.
However, one exceptional specimen is well preserved and warrants description. It measures 95 mm. long, an estimated 44 mm. across the barbs, 26 mm. across the base, and 8 mm. thick. The exceptional size of the specimen may be indicative of the size of more of these points before resharpening reduced them.

All but four of the points from three sites were found on heavily dissected uplands. The remainder were found on incipiently dissected uplands. All but two points from Sc-318B, which are located on the ecotone between a forest and a wet prairie, were located on forest soils. Hardin Barbed points were found on the following sites: F-2606, Sc-238, Sc-265, Sc-270, Sc-286, Sc-318B(2), Sc-328, Sc-348, Sc-439, Sc-468, Sc-479 (Figure B:5a-g, B:6a-c and Green 1977 Plate 1m) and the probable Hardin was found on Sc-300 (Green 1977 Plate 1h). All of these sites are multicomponent.

Bifurcated Base Points

Bifurcated base points of the various types are widely recognized as horizon markers within the Early Archaic Period. Their potential as an index type was first suspected by Lewis and Kneberg (1952) and formally suggested by Fitting (1964), but it was not until Broyles' excavations at St. Albans (Broyles 1966; 1971) recovered the various types in clearly stratified and datable contexts that their true age and variety became apparent. The sequence and chronology were confirmed at Rose Island in eastern Tennessee (Chapman 1976). Chapman (1976:235-276) has summarized the known distribution of various bifurcate based types as of 1976 and suggested their distribution was associated with the distribution of the eastern deciduous forests (p. 266), "Increased prairie conditions may be responsible for the limits of the
bifurcate tradition to the central and eastern part of Illinois...What is important is that conditions did vary such that the cultural adaptation represented by the use of bifurcated points penetrated no further." This statement can no longer be considered valid. In addition to our sample, they are reported from other surveys in west central Illinois (Green 1977a Plate 9a; Conrad 1978 Plate 6 A-C; Conrad 1981:108-112) as well as from Horizon 11 at Koster (Anonymous 1976). While these points are never common, they are found consistently in the uplands of west central Illinois. The minimal numbers of these points in the area, particularly when compared to the large number of large Kirks, Neubergers, and Hardins does suggest a decline in human population in the area toward the end of the Early Archaic. This idea is developed in greater detail in the discussion of the Middle Archaic.

Both of our bifurcated base points appear to be LeCroy Bifurcated Base points (Broyles 1971:68-69) but one is too badly damaged to allow certain identification. Both points are made of material within the range of Burlington Chert and one seems to be within the range of Keokuk Chert. Both points were found on multicomponent sites on forest soils in the heavily dissected uplands. One site (Sc-281) overlooks the confluence of Sugar Creek and its West Branch and the other (Sc-357) is on the Haul Road (Green 1977 Plate 2e).

Graham Cave Side Notched

One complete and seven fragmentary point/knives are judged to be Graham Cave Side Notched points. There is a very real problem in assigning points to this type. The type sample is from a badly mixed cave in Montgomery County, Missouri (Ahler 1971; Klippel 1971; Logan 1952); the most commonly used
description (Perino 1968:28) is illustrated with a highly selected sample of surface material and only three, and possibly four, points are available from context. These are from Horizon II at Koster which contains a range of Early Archaic points suggesting it is an old surface, but there is reason to believe there are no Middle or Late Archaic side notched points mixed in. Since Late Archaic Osceola points (Bell 1958:68-69; Ritzenthaler 1946) are very similar and in some cases may be identical with Graham Cave Side Notched points the job of sorting them is difficult if not impossible when dealing with surface materials. Therefore, it is not impossible that some or even all of these points are not Early Archaic Graham Cave Side Notched but are late Archaic Osceolas or are even representative of some as yet undefined Middle Archaic type(s).

In addition to the complete specimen we have another essentially complete specimen, four proximal fragments, one distal fragment, and one medial fragment. Seven are of material within the range of Burlington Chert and five of these are also within the range of Keokuk Chert. The last specimen is made of a high quality, mottled gray chert of unknown origin. Seven of the points are from heavily dissected uplands throughout the survey area of the Sugar Creek Drainage and one is from an area of incipient dissection in the head waters of Otter Creek. All are from multicomponent sites on forest soils. These points are from F-2602, Sc-317, Sc-329, Sc-360, Sc-452, Sc-455, Sc-474, and Sc-535. Again we caution the reader of the tentative nature of these identifications (Figure B:7e-g and Green 1977 Plate 2m, n).
1.4.4 Middle Archaic

The Middle Archaic in Illinois is generally held to cover the period between 8000 and 6000 B.P., apparently following Fowler's (1959:46) tripartite division of the time between 10,000 and 4000 B.P. on the basis of the Modoc Rock Shelter dates which he assigns to the Archaic Period. (We feel the Archaic should be considered to end about 2500 B.P. or later.) This beginning date is very close to Wendland and Bryson's (1974:6) date of 8490 B.P. for the beginning of the Atlantic Episode. It would be even closer if we subtract the 150 years which they suggest the cultural change lags behind climatic change (p. 18). This date would be 8340 B.P. In the Midwest, the Atlantic Episode is characterized by the dominance of a greatly expanded Pacific Air Mass which some feel led to the formation of the Prairie Peninsula, and the gradual extension of grasslands from the Plains as far eastward as western Pennsylvania. Some suggest (Bryson, Baerreis and Wendland 1967; Wright 1968) that by approximately 5000 B.P., the beginning of the SubBoreal, the Prairie Peninsula (and therefore the dominance of the Pacific Air Mass) contracted west as far as Iowa before extending to its present position by 2700 B.P. However, the distribution of diagnostic cultural material did not suggest any marked shrinkage of the prairies in the FAP 407 corridor across west central Illinois at any time.

The latest Early Archaic point which we have identified from the survey is the LeCroy point which has been dated at St. Albans at 8250±100 B.P. (Broyles 1971:69) but the Graham Cave Side Notched points could be slightly later. Kanawha points dating at St. Albans from 8150 B.P. (Broyles 1971:49) are known from the region. These points correspond very closely in time to
the onset of the Hypsithermal which, with the cultural lag, we suggest as a reasonable way to define the beginning of the Middle Archaic.

The Stanley, Eva, and Morrow Mountain points which characterize the Middle Archaic assemblages in the Mid South (Coe 1964; Lewis and Lewis 1961) are not represented in our collections though they are found in the Cache River Basin (Winters, personal communication). We can say with some confidence the Upper Ohio-Tennessee Valley Connection was severed with the onset of the Hypsithermal. Judging from the decline in numbers of points from Kirk Corner Notched to Kanawha Stemmed, the utilization of upland west central Illinois had diminished gradually from about 8900±500 B.P. If the prairies did expand until they covered most or all of the uplands, that would explain the paucity of Middle Archaic artifacts in our sample.

Perhaps the most difficult problem encountered in sorting Archaic point/knives is that of the Middle Archaic material. The major source of this problem is the almost complete lack of dated assemblages in the area. A probable result of this is the seeming tendency of the material to "all look alike". If we had better reference collections, we could probably do a better job of sorting the side notched collections from west central Illinois.

As things now stand, we have approximately 120 point/knives from middle Archaic levels at Koster in Greene County and perhaps a dozen points from Napoleon Hollow in Pike County. Most of the Koster points are fragmentary and most of the Napoleon Hollow points may be from the Helton Phase which we consider to be Late Archaic in age. Though these collections are limited, they do provide some guidance. Middle Archaic sites on Pony Creek and the
Big Sioux River in Iowa also provide what seem to be clues, though it may actually be noise.

Three side notched point/knives from the Littleton Field made on preforms with contracting bases seem to fit best into the Koster sequence dated from $7670^{\pm}110$ (Horizon 8F) and $6960^{\pm}80$ (Horizon 8C) years ago. Two of the specimens are within the range of Keokuk Chert but apparently beyond the range of Burlington Chert, while the third specimen seems to be within the range of both types. All seem to be thermally altered. One is essentially complete and the others consist of the proximal half. These specimens were found on sites Sc-313, Sc-354, and Sc-440 (Figure B:7d and Green 1977 Plate 2i, j).

A badly battered expanding stemmed point of Burlington Chert from F-2603 on the Haul Road probably dates within this time range as well.

Three points are similar to points from the Hill site (13-M1-62) in Mills County, Iowa. The Hill site was a bison hunter camp along Pony Creek, a tributary of the Missouri with a radiocarbon date of $7250^{\pm}400$ B.P. (Frankforter 1959; Anderson and Shutler 1974:163). We are provisionally calling these specimens Hill-like points, even though the specimens from the type site were not specifically named and we are not insensitive to the potential pitfalls of reaching 300 miles for analogues to surface material. On the other hand, the resemblance is quite close, and their frequency in the collections available from west central Illinois, beyond the project area, and their absence at Koster hint they may be a prairie phenomenon rather than a deciduous forest type.
One specimen is complete; one has one corner broken off; and one is represented by the proximal portion. As is the case with the points from the Hill site, all of these points have ground bases and ground notches. One is of very high quality Burlington Chert and the other two are of poorer but still good quality Burlington. All have been thermally altered. These points are from F-2622, Sc-258, and Sc-158 (Figure B:7a-c).

Horizon 8C at Koster provides the closest analogy for three broadly side notched and one less broadly side notched points. The latter point is the only one which is obviously made of Burlington Chert. One of the others may be of Keokuk Chert, but the other two are of cherts of unknown origin. One is of high quality opaque brown chert while the other is of poor quality, thermally altered pink and black opaque chert. Two are heat altered. Two are essentially complete while the others have their distal ends broken off. These points are from Sc-254, Sc-257, Sc-356, and Sc-438 (Figure B:8c-f).

The proximal portions of three small, boldly side notched points are similar to one found in an undated level below a level dated between 5670±90 and 6330±110 B.P. at Napoleon Hollow in Pike County. No similar points were recovered from the pre-Helton levels at Koster. The two intact bases measure 17.5 mm and 19 mm. wide. Two from Sc-271 (Green 1977 Plate 12n, 12o) which are apparently of Burlington Chert evidence very light basal grinding while the third from Sc-260 (Figure B:8a) of an unidentified light gray and brown translucent chert evidences rather heavy grinding.
A single proximal portion of a Jakie Stemmed point from Sc-265 is placed at approximately 7000 years ago on the basis of a radiocarbon date for these points in Horizon 8B and 8C at Koster. It is made of material within the range of both Burlington and Keokuk cherts. The multicomponent site on which this point was found is on a formerly wooded ridge in the heavily dissected uplands above an intermittent tributary of Bauer Branch (Figure B:8b).

Five high quality heat altered Burlington Chert points are assigned to the Table Rock category without hesitation. While it is not possible to give a time range for this type, its relative chronological position is established as overlapping on its later end the early part of the Helton Phase. A radiocarbon date of 5720±75 years ago was derived for a sample from the lower Horizon 6 at Koster (Cook 1976:70). Since Cook includes Table Rock points in his questionable Apple Blossom Stemmed type, it can only be said it is probable most of the four Table Rock points (Cook 1976 Figure 42, second and fifth in third row and first and fifth in fourth row) from Horizon 6 so classified are associated with the radiocarbon sample in question (ISGS 209) (Cook 1976:Figure 18). Two points with similar notches from Horizon 8 at Koster which is dated at 6860±80 years ago probably foreshadow this type. One of the three points from undated Horizon 7 also has similar notches. Therefore, it is probable Table Rock points appear sometime after 6860 years ago and disappear sometime after 5720 years ago (if both radiocarbon assays involved are relatively accurate). This is not to suggest the point was made during all of that time. Most, if not all, of them were probably made between 6250 and 5700 years ago.
The sample includes one essentially complete specimen, two specimens with the distal ends broken at an angle, one with the distal half of the blade missing as well as one side of the proximal half, and one represented by the base and one shoulder. All of these points were found on forest soils in the heavily dissected (3) or incipiently dissected (2) uplands.

Three of the points were on definite multicomponent sites (F-2602, Sc-254, and Sc-468). One was found off the edge of a site (Sc-285) and may not be associated with it and one was found on a site without other diagnostics (Sc-274). Other material collected on two visits to this site include one bifacial knife (?), two metates (?), three flakes, one broken chert cobble, and one rough stone (Figure B:9e-h and Green 1977 Plate 2o [the fragments pictured as Plate 2p and 2q are now considered as components of the Riverton assemblage]).
1.4.5 Late Archaic

With the amelioration of the climatic conditions of the Hypsithermal, the uplands of west central Illinois became much more habitable. It is not possible at this time to fix a date for the general reoccopation, but the area certainly was heavily occupied during Helton Phase times and perhaps slightly earlier. The only evidence for a slightly earlier reoccopation is that Table Rock points are relatively more common in the survey collection than in Horizon 6 at Koster. This situation also obtained in the FAP 407 collections. If it is true that most of these points were deposited before Horizon 6 was, then a pre-Horizon 6 (pre-Helton Phase) occupation of consequence seems likely.

There are major qualitative as well as quantitative improvements in the data which forms the backdrop for the discussions of the Late Archaic materials collected by the present survey. Another positive factor is that we no longer need to look to the Southeast or the Great Plains for dated analogues to the material under discussion, nor to concern ourselves with the usually suspect associations from rock shelters. We can now look to extensive deposits at Koster, numerous burial sites, large, apparently single component sites like Go-Kart and various distributional studies for help in interpreting the material. The fact that we need not, in fact can not, look further afield than Illinois and its contiguous states demonstrates the trend toward regionalism which characterized the Late Archaic.
Lithic artifacts characteristic of at least five Late Archaic manifestations (Helton, Titterington, Nebo Hill, Red Ocher, and Riverton) are represented in our sample. This is not to say that five phases are represented, as the geographical range of a given artifact style was often much greater than that of the cultural phase.

**Helton Phase**

The earliest Late Archaic phase known from the Illinois Valley is the Helton phase, which is well described by Cook (1976) as a broad spectrum exploitive phase. Carbon 14 dates from Horizon 6 at Koster range from 5720 ± 75 to 4880 ± 250 B.P. with six of the eight dates ranging from 5440 ± 100 to 5070 ± 90 B.P. (Hill 1975:3). Matanzas and Karnak Stemmed appear to be the major phase specific point/knives for this phase. Brannon and Helton points seem to be phase specific as well, but form a small component of the lithic assemblage.

The presence of at least 28 Helton Phase point/knives on 19 sites demonstrates a dramatic increase in the use of the survey area during this time. The artifacts include 14 Matanzas points and fragments and an equal number of Karnak Stemmed fragments. It is possible one or more of the Table Rocks were deposited during this time but none are from sites with Helton Phase specific artifacts.

**Matanzas Point/Knives** (Cook 1976:140-145, 163-167):

The Matanzas collection from the survey includes one complete ?aint Side-Notched specimen, proximal portions of eight additional specimens,
and end scrapers made from two others, in addition to single Modal and "Deep Side-Notched" examples with broken distal ends and an end scraper on a Modal specimen. In this sample, one Faint Side-Notched is of LaMoine River Chert; two small proximal fragments of and an end scraper on Faint Side-Notched points are Burlington Chert; one Faint Side-Notched proximal specimen is thermally altered Keokuk Chert and one other may be; and one unheated end scraper on a Faint Side-Notched specimen and the unheated proximal portion of a Modal Matanzas are also apparently of Keokuk Chert; the remainder are of unidentified cherts of probable glacial origins. Matanzas points were found on the following sites: Sc-267, Sc-279, Sc-281, Sc-328, Sc-356 (5), Sc-359, Sc-439 (?), Sc-442, and Sc-445 (Figure B:9a-c; B:10a-h; and Green 1977: Plate 2a).

Karnak Stemmed Point/Knives (Cook 1976:138-140, 162):

Two complete specimens, five proximal portions, six medial sections, and two distal portions compose the Karnak Stemmed samples from the project. One complete specimen and two medial sections appear to be of thermally altered Keokuk Chert. The other complete specimen and a medial section seem to be of the Stony Creek variant of LaMoine River Chert. A proximal and a distal fragment are of a darker LaMoine River Chert variant and two medial, two proximal, and a distal fragment are of thermally altered LaMoine River Chert of uncertain derivation. One medial fragment is of high quality Burlington Chert. The final proximal fragment is of unidentified mottled gray chert. Karnak Stemmed point/knives were recovered from Sc-228, Sc-238, Sc-281, Sc-316, Sc-356, Sc-437 (2), Sc-439, Sc-440 (3), Sc-444, Sc-464, and Sc-465. Three of these sites (Sc-281, Sc-356, and Sc-439)
also yielded Matanzas point/knives (Figure B:9a and Green 1977:Plate 1b,c).

All of the Helton Phase sites except Sc-228 on incipiently dissected uplands near the prairie/forest edge are on forest soils in heavily dissected uplands. While this is due in part to more extensive and more intensive work in these areas, it seems clear these people preferred downstream locations to upstream ones. The intensity of Helton occupation above Sugar Creek is much greater in our survey area beyond the point where the Haul Road intersects the bluff area after Bauer Branch, West Branch, and Rich Branch join Sugar Creek than it was anywhere in the field proper. This data supports our hypothesis that the paucity of Helton Phase material in most of that portion of the Big Creek Drainage surveyed during the FAP 407 project was due to their preference for larger streams (Conrad 1981:142). We would predict the surveys carried out on the middle and lower portions of Sugar Creek probably yielded even more Helton Phase materials than the Sugar Creek Bluff portion of the Haul Road. Unfortunately, none of the Helton Phase material was on clearly single component sites.

Hemphill Complex

Elsewhere (Conrad 1981:143-144), we proposed the name Hemphill Complex for the material postdating the Helton Phase and predating the Titterington Phase. It is a problem because its main diagnostic artifacts are boldly side-notched points which can not be separated with complete confidence from Early Archaic Graham Cave Side-Notched points, or from the infrequent but persistent boldly side-notched points sprinkled through the Middle
Archaic assemblages. Any of those points identified as Graham Cave Side-Notched may actually be attributable to this time horizon.

**Titterington Horizon**

The term horizon is used rather than phase in discussing the Titterington material from the project to emphasize it is considered indicative of a time period (around 4000 B.P. with unknown limits) rather than the specific cultural manifestation defined by Cook (1976). Artifacts which would be attributed to the Titterington Phase if found in the greater St. Louis area are recovered throughout west central Illinois but not in an assemblage which would be considered normal for the Titterington assemblage elsewhere. For example, points belonging in the same type cluster as Etley points (Bell 1960:36-37) are rare in the area when compared to types such as Wadlow blades (Perino 1968:98-99) and Sedalia knives (Seelen 1961) but a quite different situation prevails in the St. Louis area. They composed 28% of the sample from the Booth site (Klippel 1969:48), 83% of the total from Koster Horizon 4 (Cook 1976:127-138), and 88.8% of the total from Go-Kart North (Fortier 1981). No points of this cluster were found in the Littleton survey.

The artifacts which are attributed to the Titterington Horizon with a greater or lesser degree of confidence include the proximal portion of a Wadlow and another questionable one, one complete Sedalia, two proximal and single medial and distal portions of others, and one lanceolate knife.
The proximal portion of the Wadlow blade is smaller than any from FAP 407 Survey (Conrad 1981:155) but has the proper proportions. It measures 36 mm. wide and 9 mm. thick. The form and flaking fit well with the Wadlows in our collections. The opaque Burlington Chert specimen is from F-714, a Haul Road site which yielded 59 items on the initial survey (Green 1977:152) but yielded nothing on the second visit. We are unable to explain this. This multicomponent site was located in a generally level area in the dissected uplands in the head waters of an unnamed tributary of Sugar Creek. The proximal portion of a questionable Wadlow was found on Sc-254. It measures 41 mm. wide but only 8 mm. thick, making it thinner than any obvious Wadlow blades in our collections. The form and workmanship is within the range of Wadlows and the opaque Burlington Chert is a material often used to craft them. The multicomponent site was marked by a generally thin scatter over a large, generally level area on the edge of the dissected uplands above Sugar Creek. This site also yielded two probable Sedalia fragments and a probable Nebo Hill fragment. This strengthens the likelihood that we are dealing with something at least related to Wadlow blades (Green 1977 Plate 2u).

The Sedalia collection from the project consists of a proximal and a medial fragment of the same blade, two proximal fragments, and single medial and distal fragments from a total of four sites. The definite specimen appears to be of unheated Keokuk Chert. The midsection seems to be of unheated Burlington Chert but it may be Keokuk. The other two specimens are of glossy high quality Burlington Chert. Their waxy feel suggests thermal alteration but their color does not. All of these blades are from multicomponent sites. Three of these specimens are from two sites on previously forested, heavily dissected uplands overlooking Sugar Creek and the fourth
is from the previously forested head waters of an unnamed tributary of Sugar Creek. The definite Sedalia is from Sc-268 while the probable specimens are from Sc-254 (2) and Sc-287 (Figure B:11 and Green 1977 Plate 1d, e).

A fairly large broken blade similar to the lanceolate forms from the Go-Kart North site (Fortier 1981:105) may belong to this assemblage. The size, form, and workmanship suggest it likely does, but no definite statement is possible. The Burlington or Keokuk Chert specimen is from Sc-445, a multicomponent site on the Haul Road in the previously dissected uplands above Sugar Creek.

**Nebo Hill Horizon**

Again, we use the term horizon to indicate the presence of the diagnostic artifact of the Nebo Hill Phase (Brown and Ziegler 1981) without claiming the actual phase (which is centered in the Kansas City area) was in place in the Littleton area. The dating of this horizon has not been established but somewhere around 3500 B.P. seems a reasonable supposition. Our Nebo Hill material consists of three essentially complete Nebo Hill blades, and the midsection of a probable fourth specimen. Three, including one from a glacial cobbie, seem to be of Burlington Chert, and the fourth is of either Burlington or Keokuk Chert. The medial section has a waxy feel, but is pure white.

One of the specimens is from a previously forested area of incipient dissection in the head waters of Otter Creek. The questionable specimen (Sc-254) is from the heavily dissected bluffs above Sugar Creek on the Haul Road and the other two are in the project area in the heavily dissected
uplands overlooking Sugar Creek (Sc-349) and an unnamed tributary of Bauer Branch (Sc-323) (Figure B:11b-d).

Riverton Horizon

In this case, the term horizon rather than phase or culture is used pending the location of a site yielding diagnostic Riverton Culture artifacts other than projectile points. Houart (1971:31) classified Koster Horizon 3 as a Riverton hunting camp on the basis of two points and Roper (1978:27) classified the Airport site as a Riverton hunting camp on the basis of an indeterminate number of Riverton points and all of the debitage left at the site throughout its long period of use. These designations do not seem warranted, particularly since it is not inconceivable that Riverton points were used by the same people responsible for the Nebo Hill and/or Red Ocher remains in the area.

The carbon 14 assays from the three Riverton Culture sites reported by Winters (1969:105) range from 3490±200 to 3110±200 B.P. This span encompasses the latter half of the suggested time range for Titterington and the earlier half of the suggested range for Red Ocher.

There is currently no evidence suggesting an association between Nebo Hill materials and Riverton points. However, Riverton points or points very much like them are reported from the surface of the Airport site, which also yielded Titterington artifacts and a Merkle Side Barbed point (Red Ocher) (Roper 1978:Plate 3a and d), the surface of Sheets (Munson 1966:Figure 2P), and the burial layer of Sny-Mag11 Mound 43 (Beaubien 1953:Figure 21a).
Nine whole and fragmentary points from eight sites are assigned to the Riverton Horizon. At least two are classic Merom points, but damage to bases and/or shoulders prevent the assignment of all but one of the remainder to a specific type. At 43 mm. that LaMoine River Chert specimen is beyond the range of Winter's (1969:153) type sample for Trimble Side Notched points, but seems to have all of the other attributes including a piano-triangular cross-section. The greater size is probably due to the use of a larger piece of chert than the pebbles used in the Wabash Valley. Seven of the others are made of high quality white or pink (heat altered) chert. Though it could be Burlington Chert, one of the points is clearly made from a pebble. The remaining point is apparently made of heat altered Burlington. It is surprising to note that only one of these points shows no sign of breakage and six are badly broken, despite their thickness.

Two of these points were found on undissected uplands while the remainder were found on heavily dissected uplands. All but one on a prairie/forest ecotone were from forest soils. One site (Sc-275) may be single component. Collections made on two visits to this 50 m. x 65 m. site include two points, one endscraper, one biface, four cores, 44 flakes, one mano/hammerstone, one battered quartzite cobble, six cracked rocks, and one piece of sandstone. This site is within the permit area. Riverton points were found on the following sites: Sc-232, Sc-236, Sc-275(2), Sc-290, Sc-313, Sc-329, Sc-439, and Sc-478 (Figure B:12a-e and Green 1977 Plate 2:p and q and Plate 12:j and p).

Terminal Archaic (3000-2500 B.P.)

Single Kramer (Munson 1966), Springly-like (Emerson 1980), and straight shouldered contracting stemmed points are the only items from the survey.
which seem to be attributable to the terminal Archaic Period. The Burlington or Keokuk chert Kramer point was found on forest soil in an area of incipient dissection above a draw which drains into Stony Creek, a tributary of the LaMoine River. The site, Sc-229, is defined as, "a thin scatter of material on high rolling uplands, at the edge of a draw" (Green 1977:70). In addition to the Kramer point the 130 m. x 80 m. site yielded the distal portion of a lanceolate bladed point/knife (Green 1977:Plate 30), five flakes, one broken chert nodule of LaMoine River Chert, and two rough stones. This potentially single component site is not within the current permit area. The Burlington or Keokuk chert Springly-like point was found on site Sc-559 in a bulldozer cut in the woods overlooking a draw draining to the West Branch of Sugar Creek (Figure B:13g). The straight shouldered contracting stemmed point of what appears to be heat altered Keokuk Chert was found on F-714. The site was badly disturbed by road building activities but also yielded an apparent Wadlow blade. The site is located in a generally level area in the dissected uplands at the headwaters of an unnamed tributary joining Sugar Creek from the south (Green 1977:Plate 2t). All that can be said at this time concerning the terminal Archaic in the survey area is that the utilization was apparently very light.

1.4.6 Stone Axes

Three rectangular western axes (Smith 1971:37) and one full grooved specimen collected by the survey are certainly attributable to the Archaic Period. Grooved axes were apparently used throughout the period from approximately 8000 to 3000 years ago but at this time there is no possibility of assigning a particular specimen a date based on its own attributes. Grooved axe heads were found on Sc-280, Sc-317(2) and Sc-323 (Figures B:23a and b, B:24 a and c).
1.4.7 **Concluding Observations**

While the study of the Archaic occupations in the Littleton Field area has not led to major breakthroughs, it is contributing to the long term goal of understanding these adaptations which occupied two-thirds of man's known tenure in the area. The picture is so complex and the data so scarce and limited that there can be no substitute for much careful work to amass the collections necessary to say more than people making certain types of point/knives utilized the uplands.

The multiple collection technique used on these sites has once again demonstrated that one collection is not sufficient to evaluate a site. In numerous instances during this project diagnostic artifacts have been found on subsequent visits where none were found on the first one. In the case of F-2603 only Late Woodland diagnostics (5) were found in the first two systematic collections but only Early Archaic items (2) were found in the third. Another problem with single visits is the fact that in some cases the apparent limits and productivity of sites vary greatly; in several cases sites which yielded little on the first visit were much more productive later and the converse was also true. Given the nature of the data base we do not understand how small stratified survey samples can give anything but the crudest hint of the Archaic remains in the uplands. The nature of the data base precludes the gathering of worthwhile information through hand excavation without astronomical costs or incredibly good luck. We know of no sub-plowzone Archaic deposits being located by hand excavation in upland fields in western Illinois that have been plowed in modern times (post 1940).
Since the area covered by the permit was so small and since material was available from a larger adjacent tract (Green 1977), all available material was considered in an attempt to form a preliminary interpretation of the Archaic evidence in the tract. Naturally the more intensive work in the permit area has provided us with a sample which is not strictly comparable with the one from the adjacent area of the field. Since the permit area and the Haul Road are composed in large part of heavily dissected uplands, those areas are over-represented in the sample while lowlands and undischected areas are much more poorly represented.

As mentioned above the material gathered in the Littleton project will not revolutionize our thinking concerning the archaeology of the Archaic, but careful examination of any portion of the complex mosaic is helpful. As the title of this chapter indicates this is an update, not the final word on the topic. We intend to continue to monitor the area and to work to develop techniques to extract more and better data from it.

The two Daltons and three Agate Basin points which compose our collection of Early Archaic unfluted lanceolates do not make up a large enough sample to allow generalization. It is noteworthy, however, that the three Agate Basins from the tract are all smaller than any of the seventeen others in the W.I.U. collections from western Illinois. If they are representative of a microstyle it may provide a method of delineating a particular band's territory.
Though we do not know what it means yet, it is interesting to note that there were no Small Kirk Corner Notched points in our sample. Since they were relatively uncommon in the LaMoine Drainage section of the FAP 407 corridor (Conrad 1981:58) and were not represented in the collections from the Freeman United Industry Field (Conrad 1978:Plate 4), it may be that it will be possible to define a large area of the interior of west central Illinois where Small Kirks are rare or absent. The eight Large Kirk Corner Notched points were found in the dissected uplands in the permit area and along the Haul Road. There is nothing obviously remarkable about the sample. The use of very broad preforms for two of the nine Neubergers suggests the possibility of a microstyle not previously encountered. There is nothing remarkable in their distribution.

The striking thing about the Thebes knives is their large size; two are larger than any other in the scientific literature from Illinois. This is not to say they are the largest known from the state; they are not, but they are quite large, particularly in light of the absence in the area of large pieces of the Burlington Chert from which they are made. Surprisingly, two other Thebes knives are very small. The fact that two of these knives are made of LaMoine River Chert is seen as evidence this chert was used for tools requiring durability more frequently than for points. The dissimilarity in occurrence between Thebes knives and St. Charles points conforms to the pattern noted in the FAP 407 sample (Conrad 1981:81). Theban Subtriangular Blades which were found only in the Spoon River Drainage in the FAP 407 survey were well represented in this collection. Another example of an exceptionally large preform is to be seen in the single Pulaski point from the survey.
The only remarkable thing about the Hardin sample is its concentration on the upper reaches of Sugar Creek and its tributaries rather than downstream along the Haul Road. This pattern seems at odds with the one noted for the FAP 407 sample (Conrad 1981:118). The tendency for Hardins to cluster was also noted on the FAP 407 survey.

The boldly side notched points from the collection are a real problem. Eight were assigned to the Early Archaic Graham Cave Side Notched category with little enthusiasm and the remainder were assigned to the Middle Archaic. It does seem there was a light occupation of the area through most of the Middle Archaic after a relatively heavy occupation during much of the Early Archaic Period. It appears that just over 6000 years ago there was the beginning of a stepped-up occupation of the uplands by the makers of Table Rock points which apparently culminated during the Helton Phase between 5700 and 5000 years ago. Helton Phase sites were found along the Sugar Creek Bluff and, to a lesser extent, the upper reaches of Bauer Branch. There was an obvious concentration along the Haul Road where it traversed the heavily dissected uplands below the confluences of Bauer Branch, West Branch and Rich Branch with Sugar Creek, suggesting a preference on the part of Helton Phase people for larger streams.

By 4000 years ago the situation is dramatically reversed and Titterington Horizon sites and the relatively few later sites occupied before the apparent temporary abandonment of the area around 2500 years ago tend to be in the upper reaches of the streams. Only two sites of the 17 components dating from this time span were located below the confluence of Bauer Branch and
Sugar Creek and one of those was in the head waters of a tributary some distance from Sugar Creek. The concentration along minor streams compares favorably with the situation observed during the FAP 407 survey.

Figure 1:2 presents a crude attempt to illustrate the relative numbers of occupations as suggested by the occurrence of diagnostic projectile points and knives only. The total area under a particular horizontal line segment should be considered when interpreting the graph.

Obviously much additional work will be required before these admittedly disjointed observations can be formulated into an overall understanding of the Archaic of interior west central Illinois. However, if such work is not done on many tracts such as this we will never understand it and the material we could have used to gain that understanding will be destroyed or gathered by collectors.
Figure 1:3 Mine Field Phase II Archaic Sites Discussed in Section 1.4
Adapted from USGS Vermont Quadrangle 7.5 minute Topographic series, scale 1:24,000

1 mi.

1 km.

Figure 1:4b  Haul Road Phase II Archaic Sites Discussed in Section 1.4
Figure 1:4c  Haul Road Phase II Archaic Sites Discussed in Section 1.4
1.5 Update on the Woodland Period in the Littleton Project Area
by William Green

1.5.1 Discussion

The original (1975) proposal for archaeological survey of the Littleton Field suggested that some Woodland sites probably would be found in the study area. The excavation of the Bauer Branch site (Sc-87) in 1975 confirmed the existence of Woodland occupation and revealed a previously unknown cultural manifestation, the Bauer Branch complex. Subsequent work has documented a surprisingly intensive utilization of the project area and adjacent parts of the upper Sugar Creek drainage by the Bauer Branch group(s) as well as some occupation by earlier Woodland peoples. The density of Woodland sites and, by inference, population, far exceeds that of earlier periods when the relatively short Woodland time span (ca. 400-1000 A.D.) is considered.

A Late Woodland population increase has been suggested for, and recognized in, parts of western Illinois (Buikstra 1977; Munson 1976). However, such growth has been difficult to observe in many areas, including systematically surveyed upland localities within 20 miles of the current study area (Conrad 1978; Green 1977a). For several possible reasons, the Littleton study area offers the clearest expression of Late Woodland population increase and territorial expansion yet observed in the region.

The major goals of Late Woodland studies in the project area have been to define the history and socioeconomic patterns of Woodland people both synchronically (at certain periods of time) and diachronically (focusing on changes through time). Tied integrally to these data is information on demographic variability through time and across space (the settlement
pattern). Only minimal insight into the spiritual/religious life of these people is possible in this project, as such knowledge depends primarily on analysis of burials, few of which probably exist in the project area. Woodland sites in the project area can, however, provide important data on the social and economic strategies chosen by groups responding to pressures occurring in the highly productive major river valleys. Why Late Woodland people moved into the "marginal" uplands and how they adapted once they arrived there are important questions because of their broader potential significance. Concepts such as population pressure, resource stress, technological and agricultural innovation, climatic change, and peaceful vs. violent interactions between groups all have roles in understanding this area's Late Woodland cultural dynamics (Green 1977, 1980). Information on the prehistory of these processes can perhaps contribute to a fuller understanding of their modern expressions.

The variety and importance of Woodland-oriented research questions in the study area has caused much of the archaeological work there to focus on Woodland sites. This has been reinforced by their relatively high degree of visibility and good state of preservation. Thus, extensive unfunded archaeological work has supplemented the contracted field work and analysis of Woodland sites in the study area. Field work conducted in 1975 and 1976 is summarized in the report of the Littleton Field Phase I survey and Access Road salvage (Green 1977). Work carried out between 1977 and 1980 is discussed briefly in the proposal submitted for the current project. As stated elsewhere in this report, 1981 and 1982 field work focused on controlled surface collections and limited subsurface testing of numerous
sites. These 1981-1982 site evaluations have contributed greatly to many of the aspects of Woodland culture under investigation. Recent advancements were made in four interrelated research areas: chronology, technology, settlement pattern, and subsistence economy. These data summarized below, are relevant contributions to the research questions raised in the 1980 proposal.

1.5.2 Chronology

A series of ten radiocarbon dates provide an excellent initial temporal understanding of the Woodland occupation of the study area. The samples were neither excavated nor analyzed under the current contract; however, they are indispensible in the continuing investigation of the research questions discussed below. Nine dates were received from the Illinois State Geological Survey and one from the Center for Climatic Research, University of Wisconsin-Madison. Figure 1:5 illustrates these ten dates, each with one standard deviation. Table 1:2 provides basic data on each sample. This information (the only archaeological radiocarbon dates from interior upland west-central Illinois) permits more confident temporal placement of Woodland sites in this area than was previously possible. Such reliable dating in turn enables the preliminary analyses of technology, settlement, and subsistence (discussed below) to be approached in a historical, culture-change framework.

Absolute dating by carbon-14 analysis can be supplemented by relative dating techniques to refine the chronological framework for the study area. As noted earlier, cross-dating of projectile point styles is the primary
Figure 1:5 Woodland Radiocarbon Dates in the Littleton Project Area
<table>
<thead>
<tr>
<th>Lab No.</th>
<th>Site No.</th>
<th>Site Name</th>
<th>Feature</th>
<th>Material</th>
<th>C-14 Age (Uncorrected)</th>
<th>Date A.D. (Uncorrected)</th>
</tr>
</thead>
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<tr>
<td>WIS-918</td>
<td>Sc-357</td>
<td>W. J. Phillips</td>
<td>Str. 1</td>
<td>Nutshell + Charred wood</td>
<td>980±60 BP</td>
<td>970±60 AD</td>
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<td>Sc-359</td>
<td>Flatwoods #1</td>
<td>Fea. 14</td>
<td>Nutshell</td>
<td>1010±75 BP</td>
<td>940±75 AD</td>
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<tr>
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<td>Sc-359</td>
<td>Flatwoods #1</td>
<td>Fea. 5</td>
<td>Charred wood</td>
<td>1180±75 BP</td>
<td>770±75 AD</td>
</tr>
<tr>
<td>ISGS-821</td>
<td>Sc-359</td>
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<td>Fea. 5</td>
<td>Nutshell</td>
<td>1050±75 BP</td>
<td>900±75 AD</td>
</tr>
<tr>
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<td>Sc-360</td>
<td>Flatwoods #2</td>
<td>Fea. 16</td>
<td>Charred wood</td>
<td>1080±75 BP</td>
<td>870±75 AD</td>
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<td>Sc-360</td>
<td>Flatwoods #2</td>
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<td>Charred wood</td>
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<td>650±75 AD</td>
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<td>Sc-87</td>
<td>Bauer Branch</td>
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<td>380±70 AD</td>
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<tr>
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<td>Sc-347</td>
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<td>Fea. 3</td>
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<td>Sc-87</td>
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<td>Fea. 43</td>
<td>Charred wood</td>
<td>1210±70 BP</td>
<td>740–70 AD</td>
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</table>
method of dating upland Archaic sites. This method may apply to Woodland sites, as well. For example, certain projectile point and pottery types suggest a possible Weaver phase or Weaver-related utilization of the area prior to (and/or in the early stages of) intensive Bauer Branch occupation. The early radiocarbon date from Feature 1 at Sc-87 (ISGS-895) supports this suggestion as well as the general utility of such comparative techniques for relative dating. Within the Bauer Branch complex, it is still not possible to reliably use pottery style for division into smaller time units. However, both point styles and variation in pottery may allow such refinement as analysis proceeds and more data is collected.

1.5.3 Technology
Lithics

Information has been obtained on several aspects of Woodland tool-making and tool-using patterns. Stone tools recovered include a variety of knife, scraper, and projectile point forms, as well as less common items such as drills, grinding stones, and celts. Studies of projectile point styles are producing useful data on technological change through time, as mentioned above. The 1981-1982 field work results strongly suggest that early Late Woodland occupations (ca. 400-600 A.D.) can be identified by several diagnostic forms of corner-notched and shallowly side-notched projectile points. The type names Steuben and Ansell have been utilized in this report to refer to these respective hafting modes.* Later Woodland occupations are

*Editorial Note: The Steuben point is a widely recognized late Middle Woodland and early Late Woodland form common in the Illinois Valley (Morse 1963) and its association with Weaver Phase occupations is well known. However, the use of the Ansell point type in this report is a response to
represented by small triangular arrow-points, indicating widespread adoption of the bow and arrow by around 700 A.D. despite the possible persistence of the larger points. This change has implications for settlement and subsistence patterns, as others have noted (e.g., Wray and Mac Neish 1961; Hall 1973). Woodland peoples clearly had knowledge of the bow and arrow by around 300 A.D. (Cooper 1964; Benn 1981) but possibly did not fully incorporate the technique into hunting or raiding patterns until social or other factors led to a perceived advantage for its use (Hall 1973; Benn 1981).

Late Woodland peoples exploited a variety of lithic material sources for their stone tools. Sandstone was obtained from local bedrock outcrops to manufacture abraders (sharpening stones) and heating stones. Glacial till provided grinding stones, hammerstones, and chert nodules. Chert also was obtained from exposures of chert-bearing limestone, such as the St. Louis limestone. Prehistoric quarrying or collection of large quantities of raw chert is indicated west and south of the project area along tributaries of the LaMoine River. This chert was used extensively by Late Woodland peoples (Green 1977:51-57). The 1981 field work and the radiocarbon dates indicate that Woodland-period utilization of this "LaMoine River chert" increased through time as the uplands became the focus of increasingly intensive occupation (see Figure 1:2).

the lack of a clear point type to represent this form as it is expressed in the Littleton Field. Technically, the Ansell point is a larger, better made point than the shallowly side-notched form present here. A trend of size reduction through time has been proposed by White (1968:82) for this late Middle Woodland to early Late Woodland period and it seems probable that these are a "degenerate" form; being as it were, "Ansell-derived." For simplicity, because the Ansell point is poorly defined and our sample is small, that type name has been applied without modification here. D.E.
Ceramics

Ceramic material, consisting of pottery and smoking pipes, is relatively abundant within undisturbed portions of Woodland sites. Most or all pottery was locally made (possibly of shale clay) and was densely tempered with crushed rock of various types. Pottery decoration and shape have been examined in an effort to arrive at cultural inferences. This work suggests that certain decorative elements have distinct spatial distributions which may relate to social group territories. More conclusive correlations must await analyses of large pottery samples from additional sites.

Many pottery vessels can be termed "miniature pots." These vessels generally have no visible tempering agents, although plant fibers occasionally were mixed with the clay. Many miniature pots were made by children, as shown by very small fingernail and fingertip impressions on several such artifacts. This has implications for settlement patterns and site function interpretations, as it implies entire family groups occupied these sites.

Several forms of smoking pipes were used, ranging from simple untempered types to well-made pipes with punctated and engraved designs. A pipe found during the 1979 Haul Road salvage excavations exhibits an engraved rattlesnake design on the stem.
1.5.4 **Settlement Patterns**

Recent field work has provided much new data on Woodland settlement patterns in the project area. Unfunded surveys in 1980 confirmed the existence of several nearby burial mounds reported earlier (Green 1977: 46), implying a relatively long term or intensive occupation of the area. The 1981 work revealed three other important aspects of Woodland settlement patterns in the study area:

1. Habitation sites are situated in floodplain, bluff base, and bluff slope locations as well as in the uplands. Previous work had documented only one non-upland Woodland site. This wider range of site locations may indicate a greater variety of site types and functions, and hence a more complex settlement system, than previously hypothesized.

2. Woodland sites occur in higher densities than previously thought. The coarse, grit-tempered pottery characteristic of the study area dissolves upon prolonged weathering; therefore, recognition of many plowed Woodland sites requires intensive searches under optimal field conditions. Site revisits and controlled surface collections have added substantially to the number of known plowed sites with diagnostic Woodland artifacts. Survey of wooded and overgrown areas also has revealed previously unknown Woodland sites. Increasingly refined site density figures will allow more precise estimations of population size and density, especially as chronology and length of occupation become better understood.

3. Controlled surface collections suggest some consistency in the size of upland habitation units. Several sites contain one or
more artifact clusters that average approximately 35 meters in diameter. However, definition of any "standard" Late Woodland habitation unit size requires further field work, primarily large scale excavations.

1.5.5 Subsistence Economy

Much effort has been devoted to studies of Late Woodland subsistence economy in the project area. "Subsistence economy" is defined as the system(s) used to procure and process plant and animal material for human consumption. Due to acidic soil conditions, few faunal remains have been found, meaning that little knowledge has been gained of Late Woodland exploitation of animal resources. Charred floral remains are well preserved, however, allowing insights into the use of plant resources. Also, it is possible to reconstruct to some degree the prehistoric vegetation of the study area using soil survey data and the 1816 General Land Office survey. This information can be used to infer the types of food resources potentially available to the area's Late Woodland inhabitants. Data on animal and plant remains actually recovered are presented below.

Animal Exploitation

Only one site exhibits good bone preservation. This is the Mata Hari site (Sc-461), one of the earliest Woodland sites in the study area. Apparently, the intensity of occupation and the large quantity of mussel shells brought to the site counteracted the naturally acidic chemistry of the upland forest soil and allowed preservation of numerous bones as well as the shells. These shells and the remains of fish and turtles suggest
intensive collection of riverine and aquatic species early in the local Woodland sequence. Deer, other mammals, and birds also were taken, indicating that a variety of species and habitats was exploited. Faunal remains from later Woodland sites are much less well preserved, consisting primarily of tiny, burnt, unidentifiable bone fragments, and small pieces of mussel shell. A few fish scales (of crappie, caught in early summer) were found at the Flatwoods #1 site (Sc-359). It appears likely that the later Woodland occupants of the study area did not utilize freshwater mussels as intensively as the earlier inhabitants. This may be due to changing subsistence patterns reflecting a more permanent adaptation to the upland environment and its most abundant resources. A long term adaptation involving intensive use of aquatic or riverine resources would seem relatively inefficient in the study area, even granted a more favorable hydrologic situation in prehistory. However, this suggested shift from a mixed economic system including aquatics to a more upland-orientation pattern is based on negative evidence and is difficult to confirm or disprove.

**Plant Exploitation**

Well preserved charred plant remains have been recovered from hundreds of soil samples from Late Woodland sites. The most abundant food remains are those of hickory nut, found in nearly all samples analyzed. Acorns, walnuts, butternuts, and possibly hazelnuts are among other nut remains found. Cultivated plants include corn, squash, and sunflower; possible cultigens are knotweed (*Polygonum* cf. *erectum*), goosefoot (*Chenopodium* sp.), and maygrass (*Phalaris caroliniana*). The maygrass, if confirmed, will be the northernmost reported occurrence of this plant.
The floral analysis suggests that corn was not an important element of the diet until the end of the local Late Woodland sequence. Wild plants and those cultigens requiring little care or protection were emphasized at least until 800 or 900 A.D. and their use certainly continued after corn became important.

1.5.6 Summary

Phase II operations in 1981 and 1982 have contributed greatly in further investigating the Woodland occupations in the Littleton Field. The data base is now well defined and will allow for a meaningful distribution of further efforts towards data recovery.
1.6 Observations on Aboriginal Chert Use in the Littleton Field Area  
by Lawrence A. Conrad

Green (1977:49-58) discussed chert use patterns in the Littleton Field on the basis of his initial survey. With the larger sample now available and the recognition of two additional types of usable chert in the vicinity, a few additional observations are in order.

Esarey (n.d.) has documented outcrops of usable cherts in the Keokuk Limestone along the central LaMoine River approximately 20 km (less than 15 miles) west northwest of the Littleton Field. He describes these cherts as varying from crystalline to microcrystalline with colors including blue gray, gray, whitish gray, grayish white and orange tinted. There is considerable variability in these cherts, but the best grades seem to equate only with the medium and poor grades of Burlington in regard to texture. This is the reason we classify so many specimens as being of Burlington or Keokuk Chert. Many Keokuk Chert specimens have been erroneously called Burlington in the recent past (e.g., Conrad 1981).

The other chert is that which the local lapidaries call Illinois Agate. Esarey describes it as follows: "It is apparently nodular (sometimes appearing concentric) and has a thick, extremely weathered, crust-like cortex, texture can be fine grained, but usually tends towards a rather grainy, even crystalline structure. Colors are generally pink to red, but some pieces grade into white, blue or gray." This material occurs naturally in stream beds in the vicinity of Camden near the lower LaMoine River, approximately 20 km (13 miles) southwest of the Littleton Field.
Figure 1:6 Chert Frequencies in Point/Knife Manufacturing
As Figure 1:6 indicates, our sample suggests Burlington or high quality Keokuk cherts were used almost exclusively for point/knives between 10,000 and 5500 years ago, when LaMoine River Chert and cherts of unknown origin became more common and continued to be until the end of the Helton Phase. The latter two cherts drop out of the picture almost entirely until from perhaps 1500 years ago to perhaps 1000 years ago, during which time all categories appear in moderate quantities.

It seems probable the apparent fluctuations in Figure 1:6 result in most cases from the limited sample representing most of the time involved. Clearly Burlington Chert and Burlington or Keokuk Chert are the favored "types" during all but the Helton and Late Woodland periods. During the Helton period, the Karnak Stemmed knife was manufactured in considerable numbers. In the sample under consideration, 9 of 14, or 64%, were made of LaMoine River Chert while only 1 of 14, 7%, Matanzas points were. Rather than reflecting any real change in preference, it is probable that the higher representation of LaMoine River Chert in the graph is simply an indication of our ability to recognize a common Helton Phase knife form.

There is other evidence of the preference of LaMoine River Chert for tools requiring durability. Two of the 10 Thebes knives in this sample are of this material, the only definitely typable Early Archaic materials from the sample which are. Of two other probable Early Archaic point/knife fragments of this material, one has the sinuous edge seemingly marking it as a knife but the other does not.
2.0 UNTESTED SITES - SURVEY RESULTS (SECTION II)

2.1 Discussion

Within the five year plan boundary there are a total of 16 new sites which have been located in cultivated fields. As discussed in correspondence dated July 17, 1981, the current contract authorized only Phase I work upon these sites. However, in four cases the set of conditions for the sites reported in Chapter 3 of this report have been met, either through the survey data and/or by investigations on uncultivated portions of these sites. The sites which come under this heading are Sc-433, Sc-468, Sc-479, and Sc-480. Survey results are discussed here for the remaining 12 sites and presented in Appendix A and Figure 2:1.

2.2 Site Descriptions

Sc-434 (Homestead 2)

Location: SE 1/4 Littleton 13; UTM N4457250 E706590

Size: 80 meters E/W by 15 meters N/S

A collection carried out under poor conditions (3 inch tall winter wheat) yielded one chert knife, one utilized flake, rough rock, sandstone, and a hammerstone from this sparse site. The scatter may continue into wooded areas to the south and east. No cultural affiliation is assigned.

Sc-435 (Homestead 3)

Location: NE 1/4 Littleton 13; UTM N4457300 E706480

Size: Approximately 30 by 30 meters

Collection carried out under poor conditions (3 inch tall winter wheat) yielded one quartzite core and two glacial cobbles. No cultural affiliation is assigned.
Figure 2:1  Untested Sites
Sc-436 (Homestead 4)

Location: SE¼ Littleton 13; UTM N4457050 E706360

Size: Approximately 100 meters N/S by 40 meters E/W

Collection carried out under poor conditions (3 inch tall winter wheat) yielded two manos, two cracked rocks, and a projectile point fragment. No cultural affiliation is assigned.

Sc-456 (Bare Bones Site)

Location: SE¼ Littleton 12; UTM N4458220 E707140

Size: Approximately 150 meters N/S by 75 meters E/W

Two collections of this site under moderate conditions (corn stubble) yielded 105 items including chert and rock debris, cobbles, sandstone, three manos, two metates, two hammerstones, a pitted stone, a Late Woodland (Klunk-like) point and a small side-notched, Late Archaic (Riverton) point.

Probable Late Woodland and Late Archaic cultural affiliations are suggested for this site.

Figures B:14c, B:20b

Sc-457 (Corner Dozen)

Location: SE¼ Littleton 12, UTM N4458340 E707060

Size: 60 meters N/S by 50 meters E/W

Collection of 25 items on this tightly clustered site under moderate conditions yielded chert debris and rough rock. No cultural affiliation is assigned.
Sc-458 (Escargot)

Location: NE¼ Littleton 13; UTM N4457620-4457800 E707145
Size: 315 meters N/S by 80 meters E/W

Collection of 253 items on this site under good conditions yielded much chertdebitage, rough rock, sandstone, one Ansell-like point base, one untyped Early Archaic point, two untyped point tips, one Late Woodland triangular point/knife, seven bifaces, three cores, retouched chert items, six hammerstones, and one mano. Early Archaic, Late Archaic, and Late Woodland affiliations are assigned.

Figures B:16f, B:20h

Sc-469 (R. Alan)

Location: SE¼ Littleton 12; UTM N4458240-4458340 E706375-706575
Size: 200 meters E/W by 75 meters N/S

A collection on this large sparse site under excellent conditions yielded 114 items including chert debris, cracked rock, cobbles, a core, three manos, four hammerstones, one chert hammerstone and an Archaic side-notched point base. A tentative Archaic affiliation is assigned.

Sc-472 (Charon)

Location: SE¼ Littleton 12; UTM N4458060-4458160 E706715
Size: 30 meters N/S by 20 meters E/W

A collection on this small tightly clustered site under good conditions yielded 119 items including chert and rock debris, a retouched uniface blade, cobbles, an abrader, and sandstone. No cultural affiliation is assigned.
Sc-475 (Deerslayer)

Location: NW¼ Oakland 18; UTM N4457690 E707440

Size: Site size is unknown

A survey under good conditions indicated that a light scatter was present at this site. Only one item was collected, an untyped projectile point fragment. No affiliation is assigned.

Sc-476 (New Tanis)

Location: NE¼ Littleton 13; UTM N4457780 E706815

Size: 160 meters E/W by 80 meters N/S

A collection of this moderately dense site under excellent conditions yielded 114 items including one Dalton point, one Early Archaic point tip, two untyped projectile point fragments, two retouched flakes, one thin biface, two scrapers, chert debris, five hammerstones, two manos, one pitted stone, and cracked rock. An Early Archaic affiliation is assigned to this site.

Figure B:1b

Sc-477 (Indiana Jones)

Location: NE¼ Littleton 13; UTM N4457640 E706865

Size: 150 meters N/S by 60 meters NE/SW

A collection of this site under excellent conditions yielded 101 items including a possible Archaic point fragment, several manos, chert and rock debris. Due to tentative point identification, no affiliation is presently assigned to this site.
**Sc-478 (Marion Ravenswood)**

Location: NE¼ Littleton 13; UTM N4457680 E706550

Size: 120 meters E/W by 80 meters N/S

A collection of this dense scatter under excellent conditions yielded 299 items including one possible Late Archaic side-notched point, one point tip, one possible Late Archaic (Riverton) point, one possible Steuben point base, one adze, two choppers, four retouched flakes, one scraper, one mano, chert and rough rock. Late Archaic and early Late Woodland affiliations are assigned to this site. A portion of this site extending into the woods to the south was apparently very limited and disturbed.

Figures B:12a, B:15d, and B:221
3.0 TESTING RESULTS FOR SITES MEETING CONDITIONS A THROUGH E (SECTION III)

3.1 Discussion

Section III (Figures 3:1, 3:2) sites have been selected from the total number of sites due to the likelihood that they contain intact cultural deposits, or, in the case of those sites in overgrown areas, the presence of substantial cultural scatters which contain information not retrievable by controlled surface means. Likelihood of intact deposits have been judged on the basis of four scaled conditions. That is, if Condition A, which is the best indicator of intact deposits, was met for a certain site, it was not necessarily evaluated for Conditions B, C, and D. Condition E represents a presence/absence evaluation of the likelihood for substantial cultural information for previously plowed overgrown sites. These conditions are discussed below.

**Condition A:**

Condition A pertains to sites or partial sites which are unplowed and otherwise undisturbed (part or all of the site consists of "intact deposits").

**Condition B:**

Condition B pertains to sites where intact deposits (i.e. features) have been verified.

**Condition C:**

Condition C pertains to sites which have produced pottery, although actual intact features have not been observed. The assumption that the presence of pottery indicates intact subsurface deposits is based on the observed rate of deterioration for Late Woodland sherds in the plowzone in the Littleton Field area. Substantial surface scatters of pottery present upon one visit have been observed to be much diminished or totally
Figure 3:1  Section III Late Woodland Sites
Figure 3:2 Other Sites Included in Section III

[Map with legends and annotations]
undetectable upon being revisited the next season (or several seasons later). An example of this is detailed under Sc-273. The converse of this pattern also has frequently occurred, leading to a situation where the Late Woodland occupation for some sites has not been identified until several repeat visits have been carried out (see Sc-253, 257, or 266 [3.2]). The necessary source of pottery on a site's surface then, after years of cultivation, is the intersection of intact subsurface deposits (which in this case are usually pit features) by plowing. For example, Sc-264 yielded no pottery on its first visit. Pieceplotting five years later yielded only two sherds. A block of plowzone removed on a small part of this site exposed four pit features (one of which was shallow and disappeared during scraping) and numerous post molds. Pottery seems to be appearing generally in parts of Late Woodland sites which are actively eroding since modern, minimum tillage practices are not extending so deeply into the soil as annual plowing used to. Stable Late Woodland sites (or portions of sites) not exhibiting large amounts of pottery but containing very heavy non-pottery concentrations (such as the cultivated portion of Sc-265) can probably be counted on to contain large numbers of intact features below the plowzone.

**Condition D:**

Condition D pertains to cultivated sites which have produced two or more non-ceramic Late Woodland diagnostics (projectile points or sandstone slot abraders) but have not produced pottery or direct observation of intact deposits, or non-cultivated sites which have produced a single non-ceramic Late Woodland diagnostic in direct association with a scatter of cultural material but has not produced pottery or direct observation of intact deposits.
Condition E:

Condition E pertains to sites or partial sites which are presently overgrown and which contain artifactual concentrations or overall density comparable to those sites which are being multiple surface collected. Many of these sites have much shallower plow disturbed layers which enhances their information bearing potential and increases the likelihood of intact features, including Archaic period pits.

All sites in cultivated fields were investigated by controlled surface collection means (either pieceplotting by transit, or a controlled grid). Sites in overgrown areas were located by "bulldozer survey" on the upland lobes and cultural material in the resultant transects was plotted directly onto 1:100 scale contour maps. Sites in cultivated fields could be assessed under Conditions B, C, and D, while Conditions A, D, and E could refer to overgrown sites. Table 3:1 contains a list of Section III sites by the highest conditions met. Portions of sites are included here since uncultivated portions of a site could meet Condition E while the remainder of the site was successfully dealt with as a Section IV site. Overgrown sites not meeting Conditions A or E were dropped from consideration. Cultivated sites not meeting Conditions B, C, or D (Section IV sites) will continue to be investigated by return visits only, which will extract all potential plowzone information. A plowzone removal monitoring program would effectively complete work on these cultivated sites (as, in general, plowing has destroyed what shallow subsurface features may have existed on these upland sites). Excavation of the few, if any, subsurface features recovered from these sites would not be likely to cause any scheduling
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problems. Site by site results are presented below for sites meeting Conditions A through E and summary cultural data is compiled in tabular form in Appendix A. A key for the site maps is presented in Table 3:2.

3.2 Site Descriptions and Results of Subsurface Testing

**Sc-236, Sc-237, and Sc-268 (Figure 3:3)**

Location: SW¼ Littleton 12, UTM N4458225-4458360 E704675

Size: A curving linear band approximately 170 m. E/W by 250 m. N/S

Pieceplotting of the cultural material on the plowed portion of these sites make it clear that a linear, Late Woodland scatter is concentrated in a north/south band across the field. Pottery has been located in several discrete clusters while other clusters, not presently yielding pottery, make up the remainder of the scatter. The pottery concentrations are located mostly in the highly erosional portions of the site where features are being actively plowed up. The two clusters at the head of a gully at the north end of the site, yielded ten sherds. A single sherd was found in the south center of the field on the edge of a heavy cluster of materials. The base of a projectile point identified as an Ansell was located near the center of the next cluster north. At the south end of the cultivated portion of this site pieceplotting revealed a large concentration of material which yielded four pieces of pottery in the rapidly eroding crest area and one piece of pottery about 15-20 meters back from the crest (west). Green (1977:78) noted this southern concentration and indicated that one of the two sherds from Sc-268 was recovered here. A casual revisit several months after pieceplotting recovered 19 more sherds in this concentration, including a decorated shoulder sherd. To the south of this, a pasture and wooded
### Table 3:2 Key for Site Maps

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<td>-----</td>
<td>Fence</td>
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<td>★</td>
<td>Pottery Sherd</td>
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<td>------</td>
<td>Railroad</td>
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<td>■</td>
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Figure 3:3 Site Maps for Sc-236, Sc-237, and Sc-268
lobe were investigated by bulldozer transects which revealed a continued very high density of material, including three pieces of pottery, one Ansell point, and several point fragments. Debris scatter continues heavily in a band along the ravine edge, curving to the southwest and then continues nearly to the western end of the wooded lobe. Both the pasture and the wooded lobe have been previously plowed, although the wooded portion of the site has some quite large trees and has not been plowed to a full modern depth. Probes indicate a 17 cm. plowzone as opposed to a probable average of 20 cm. for the pasture and cultivated field. Non-Late Woodland chronological diagnostics present on these three combined sites are listed in Appendix A indicating Early and Late Archaic components, in addition to the predominant Late Woodland occupation. Functional diagnostics listed in Appendix A indicate a wide range of tasks were being carried out at the site, typical of a Late Woodland sedentary occupation.*

Figures 3:11a, B:17b, B:17f, B:19h, B:28b, B:28c, and B:28d
(Also see Green 1977:Plates 11a, 5g, 5h, and 5i)

Sc-240, Sc-267, and Sc-348 (Figure 3:4)
Location: SW¼ Oakland 7; UTM N4458260-4458450 E706275-707370
Size: 398 meters N/S and 192 meters E/W

These three sites have been lumped together as a Late Woodland occupation complex, although a slight discontinuity is present at the head of the ravine to the north of Sc-267. Within the cultivated field, heavy concentrations of material and associated Late Woodland sherds and projectile points occur in an approximately 40 meter wide (east/west) band from the

*Four excavation blocks were opened after the compilation of the draft. (See Appendix E)
Figure 3.4 Site Maps for Sc-348, Sc-240, and Sc-267
north field edge south to just northwest of the head of the ravine north of Sc-267. Southwest of the head of this ravine the Late Woodland scatter is again heavy, and increases to a very dense scatter on the crest of the eastern lobe extension designated Sc-267. A combined total of 21 sherds, three Late Woodland projectile points (two side-notched, triangular arrowpoints and one Steuben point), and two triangular Late Woodland point/knives have been collected from the surface of these sites. A portion of Sc-267 was collected by a controlled grid rather than individual pieceplots due to its density. A raw count of items found in this area is entered on the map.

Sc-348 was one of the three Late Woodland sites chosen for evaluation phase excavations. It was chosen primarily for its dense scatter of Late Woodland artifacts. In spring 1982, two excavation blocks, measuring roughly 35 by 7 meters (for the southwestern one) and 30 by 17 meters (for the northeastern one), were stripped of plowzone using a ten cubic yard pay scraper (Figures 3:5, 3:6).

The northeastern block was placed in an area of only two sherds and a diffuse scatter in order to determine the subsurface correlates of this type situation. At the base of the plowzone was a conspicuous lack of pit features. Present were two elliptical shaped pits and two patterns of post holes making up two structures (Figure 3:5). The two elliptical pits appeared to be burials. Although all bone material had leached away, the eastern one contained a sandstone discoidal, a small chert hammerstone, and a vessel portion at the eastern end of the burial pit. This total lack of bone
Figure 3:5 Sc-348 Northeast Excavation Unit
Figure 3:6 Sc-348 Southwest Excavation Unit
preservation is characteristic of many sites in this area. Post holes in the two structures were cross-sectioned to verify their authenticity.

The southwestern block was placed in a somewhat eroded area which had several sherds and arrowpoints on the surface. There were fourteen pit features and four post holes present in this excavation (Figure 3:6). The features contained much pottery and other material (which was excavated by volunteer labor and is presently being analyzed).

These two excavation blocks represent approximately 6 to 8% of the parts of Sc-348 that would probably have subsurface features, allowing an estimate of 225 to 300 features for this site.

Overgrown lobes from Sc-240, Sc-267, and Sc-348 which were subjected to "bulldozer survey" all produced cultural material but in widely varying amounts. A transect eastward from Sc-267 revealed only a single fire-cracked rock, indicating that the majority of the scatter is in the cultivated field. A transect to the east for the next lobe northward from Sc-267 indicated a substantial hiatus of cultural material with a concentration occurring only at the general end of this lobe. This was designated Branch Site and will be discussed below. Bulldozed transects on wooded lobes east, north, and northwest of Sc-348 all recovered material, but only the tip of the north lobe exhibited a scatter consistent with a continuation of the heavy scatter to the south. The eastern and northwestern extensions of Sc-348 consisted of only a few fire-cracked rocks. Probes indicate that all three of these lobes have a full, modern depth plowzone.
In addition to the extensive Late Woodland occupation on Sc-240, Sc-267, and Sc-348, Early Archaic, and probably Late Archaic, minor components have been noted. A large number and variety of functional diagnostics indicate a wide range of tasks were being carried out at this site complex, typical of a Late Woodland sedentary occupation.

Figures B:5d, B:9c, B:15b, B:15c, B:15d, B:18f, B:19c, B:19e, B:19f, and B:19n (Also see Green 1977:Plates 1a, 1g, 2d, 2w, 12g, 12k)

**Sc-253 (Figure 3:7)**

**Location:** SE\% Littleton 12; UTM N4458425 E706725

**Size:** 25 meters N/S and 80+ meters E/W

Pieceplotting of cultural material on the cultivated portion of this narrow lobe revealed that Sc-253 consists of a series of tightly spaced clusters of material. A single sherd was located near the center of the westernmost cluster and the easternmost cluster apparently continues onto the wooded portion of the lobe. (No bulldozer trench was carried out onto this lobe though, since the extension of the site was obvious and the wooded lobe end was of limited size.) A return to the site in spring of 1982 yielded a small probable Late Woodland arrowpoint tip from very near the sherd found previously. A number of functionally diagnostic items (percussion, and crushing/grinding tools, as well as retouched flakes) have been collected, which reinforce viewing Sc-253 as a small, sedentary, Late Woodland occupation. Although no Late Woodland material has been found on Sc-252, which is immediately west and separated by only about 25 meters, a light scatter of material there has produced a problematic
sandstone item with a cylindrical hole (drilled?, natural?) through it.

**Sc-255 (Figure 3:8)**

Location: SE 1/4 Littleton 12; UTM N4458325 E706700

Size: 75 meters N/S by 165 meters E/W

Pieceplotting on Sc-255 revealed that, although clearly defined clusters of material are not obvious, the majority of material is concentrated in the center of the field, with a clear break at the eastern field edge. A single sherd was recovered from the center of the field. No other temporally diagnostic items have been recovered from Sc-255. Functional diagnostics included percussion, crushing/grinding and woodworking tools, in addition to retouched flakes.

**Sc-257 (CIN #8)(Figure 3:9)**

Location: NE 1/4 Littleton 13, UTM N4457725 E707000

Size: ca. 175 meters N/S by 55 meters E/W

Sc-257 consists of a very heavy scatter of materials along the crest of a narrow upland lobe. Green (1977:76) made only a small collection, but pieceplotting of all cultural debris yielded over 500 items, most of which was situated in two distinct linear clusters. Temporal diagnostics were lacking from these visits, although two untypeable point tips were recovered. Green recovered two chert cores, while pieceplotting recovered eight manos, one metate, and two hammerstones. Other material consisted of chert debris, a few unmodified cobbles and much cracked rock and sandstone. A revisit of this site in the spring of 1982 recovered and pieceplotted a Late Woodland sherd, two projectile points, a chert drill and another untypeable point tip.
The sherd was located in the densest portion of the northwestern linear scatter, indicating that this is a Late Woodland cluster. The drill is not strictly typeable but is probably Archaic. One point is a Middle to Late Archaic side-notched point, while the other is a corner-notched point which is not specifically typed, although it is certainly Archaic. All three of these Archaic tools were located in the lighter, "background" scatter, rather than on either of the two intensive occupations. This makes it seem likely that the southeastern cluster of the two may well also be of Late Woodland affiliation.

Figures B:8e, B:12f, and B:14b

Sc-259 South
Location and Size: A 40 meter N/S by 30 meter E/W extension off of the cultivated portion of Sc-259

Bulldozer survey and pieceplotting of cultural material on this densely overgrown upland lobe end revealed two cracked rocks and a single chert flake within 40 meters of trench. This portion of the site has a 20 cm. plowzone and is covered with a very dense underbrush and small tree growth.

Sc-262 (Figure 3:10)
Location: NW% Oakland 18; UTM N4457375 E707560
Size: 75 meters NW/SE by 95 meters NE/SW

Sc-262 consists of a small, squared, field extension onto a bifurcate-ended lobe. Pieceplotting of cultural material in the cultivated portion of this lobe indicates that Sc-262 is separated from Sc-264 by approximately a
Figure 3:10 Site Maps for Sc-264, Sc-262, and Sc-263
20 meter gap representing a slight dissection. Sc-262 exhibits a large, dense cluster of material with a smaller cluster at the southwest field edge continuing onto the overgrown southwest lobe end. A bulldozer transect to the southeast lobe end resulted in the location of a third cluster of material at the extreme end of this lobe, containing three sherds, many small charred nutshell and wood fragments, several pieces of daub, fire-cracked rocks, and chert flakes. The large, dense cluster in the cultivated portion of the site also yielded a piece of pottery (a shoulder sherd, Figure B:28a). Sc-262 has not yielded functional diagnostic material on the scale of other Late Woodland sites, yet the occurrence of pottery on two of the three clusters indicates the presence of intact subsurface deposits. Probes indicate that the overgrown lobes may have been only minimally plowed, but this is not conclusive. It is probable that they have been plowed at least once.

Figure B:28a

Sc-263 (Figure 3:10)

Location: NW¼ Oakland 18, UTM N4457425 E707625

Site: 198 meters NW/SE by 58 meters NE/SW

Sc-263 consists of occupational debris on the small lobe directly northeast of Sc-262. Pieceplotting in the cultivated portion of this field revealed a general scatter of material with a small, intense concentration of rocks in the extreme southeastern corner of the field. Probing in this approximately five by ten meter concentration indicated a pit feature below the plowzone with at least 8 cm. of burned fill. This feature is
approximately 1.5 meters across and exhibits burned sterile soil surrounding it, indicating that it was formerly more extensive, albeit shallow. A single projectile point, typed as Manker corner-notched-like was recovered from the center of the cultivated portion of the scatter on a revisit to the site. Much of the lobe on which Sc-263 is located is overgrown. This overgrown portion extends approximately another 100 meters southeast from the location of the feature. Bulldozer transects on this overgrown lobe indicate a continued moderate scatter with a slight hiatus near the center of the lobe with another concentration at the lobe's end. Probes indicate a moderate depth plowzone (ca. 12 cm.). Although this lobe has been plowed, it has not been plowed to modern depths. A Middle Woodland or early Late Woodland affiliation has been assigned to this site. Functionally diagnostic material was very sparse.

Figure B:18d

Sc-264 (Figure 3:10)

Location: NW¼ Oakland 18, UTM N4457400 E707500

Size: 138 meters NE/SW by 50 meters NW/SE

Sc-264 is on an upland lobe with a cultivated field presently occupying its northeast corner. Uncultivated/overgrown areas lie to the south and west of the cultivated corner. Piecereplotting in the cultivated portion of the lobe revealed a large, circular, and moderately dense cluster of materials contained entirely within the field. A bulldozer transect south from the cultivated corner indicates another cluster at the lobe's end. A pattern of 20-25 probes spaced at approximately one meter intervals on the west portion of the lobe revealed no evidence of materials or features, but a
bulldozer path running down the northern edge of this lobe contained a Late Woodland side-notched arrowpoint. The portion of the site in the cultivated field yielded two sherds. It was in this area that Green (1977:77) noted the occurrence of a plowed-out pit feature. The cluster located at the south lobe end of Sc-264 yielded no temporally diagnostic material. Similar to Sc-262 and Sc-263, functional diagnostics are scarce at Sc-264. Probes indicate that, although most of the overgrown portion of the lobe had been plowed, the extreme southern lobe end (which contains a large portion of the southern cluster) has apparently not been plowed. A relict fenceline, matching the south cultivated boundary of Sc-262 appears to form the boundary between this unplowed area and the overgrown, but previously plowed, areas.

Sc-264 was one of the three Late Woodland sites chosen for evaluation phase excavations. It was chosen because it exhibited a light but clear cluster and had only two sherds on the surface. In the spring of 1982, an excavation block approximately 45 by 6 meters and oriented in a northwest by southeast direction was stripped of plowzone using a 10 cubic yard pay scraper. Evident at the base of the plowzone were three pit features and nine post holes (Figure 3:11). Another feature was noticed at the far southeastern end of the block (next to Feature 3) but it was apparently very shallow (due to erosion in the slight dissection between Sc-262 and 264) and disappeared during scraping. Although features and post holes were excavated (by volunteer labor), the predominant function of these tests was simply to verify their presence and distinguish what types of sites could be expected to contain them.
Two of the three features were pits while Feature 2 turned out to be a deep post hole with a large opening. All the other post holes were unusually deep also (23 to 65 cm. below plowzone). Feature 3 contained a ceramic elbow pipe with a punctuated decoration.

Based on these results, a total of only approximately twelve to fifteen features (not including post holes) might be expected on a light cluster like this one although a more intensive Late Woodland occupation could have as many as forty or fifty features within the same area.

Figure B:19m

**Sc-265 (Figure 3:12)**

Location: NW¼ Oakland 18, UTM N4457375 E707230

Size: 185 meters N/S by 105 meters E/W and extending heavily out onto southern and eastern lobes

Sc-265 consists of heavy occupational debris at the southern end of a large upland lobe. Pieceplotting on the cultivated portions of this lobe revealed a very heavy concentration of materials, with at least three heavy clusters at the south end of the site. One sherd was located in the southermost of these three clusters. Green (1977:78) reports two sherds from cultivated portions of this site. Only one point was recovered from the pieceplotting visit. An Ansell point was present at the northern, less dense, portion of the scatter. Subsequent visits (three) recovered a Steuben-like point (from the head of the gully between the east and northeast lobes), a contracting stemmed point (found just outside the bulldozed entrance to the east lobe), and a Steuben point base of probable Dongola
chert (found within the northernmost of the three heavy clusters of material at the south end of the field). Other, non-Late Woodland points recovered (all on site revisits) are a large Early Archaic probable Hardin point and a Jakie Stemmed point (both found at the extreme end of the site in areas of lighter surface scatter).

Bulldozing for drilling crews revealed occupation extending heavily into the southern and eastern overgrown lobes, with a heavy to moderate amount of material on the northeastern lobe and lesser occupational debris to the west and northwest of the western field edge. The northwestern lobe, which was not pieceplotted, produced much broken rock (especially sandstone), chert, and a single sherd. On the eastern lobe, an initial uncontrolled collection recovered 26 sherds, and a subsequent pieceplotting of the bulldozed area recovered five more sherds. A single sherd found in a restricted cleared area at the extreme east end of this lobe indicates continued occupation east of the clearing. A steep bulldozer path had cut into the head of a gully separating the east and south lobes of Sc-265. Two sherds were recovered here, along with 16 other pieces of cultural debris (not on map). The bulldozer cut onto the south lobe revealed continued very heavy occupation south from the cultivated field. An initial uncontrolled collection recovered eight sherds, a biface, and a sandstone abrader. Subsequent pieceplotting recovered twelve more sherds along with a heavy scatter of additional debris. Later visits to the site recovered a total of twelve more sherds, an end scraper, and a large reamer-like bifacial tool. A large portion of this southern lobe, to the west of the bulldozer cut, is flat and probably contains a similar site extension.
Figure 3:12 Site Map for Sc-265
To the west of the western field edge is another large lobe which had a large ratio of visibility due to its use as a logging station. A few items were found in this area, including a bifacial knife, but density of material is quite sparse compared with the rest of Sc-265. All extensions of Sc-265 into overgrown areas appear to have been plowed previously, with the possible exception of the northeast lobe, which seems to have either minimal disturbance or only heavy humic development a total of 8-11 cm. below the surface. A wide range of functional diagnostics were present at Sc-265.

Figures B:6b, B:8b, B:15f, B:15g, B:17d, and B:18b

Sc-266 (CIN #12)(Figure 3:13)

Location: NW¼ Oakland 18; UTM N4457690 E707780

Size: ca. 85 meters SE/NW and 50 meters SW/NE

Sc-266 is a light scatter of material at the head of two small gullies. Green's survey (1977:78) collected several tools, rocks, and a flake. The limited pieceplotting of all cultural material yielded 23 items in a light linear scatter. No temporal diagnostics were recovered. A revisit in the spring of 1982 yielded one sherd and a sandstone abrader, as well as several functional diagnostics, three scrapers, one thick biface, one blank, one battered chert nodule, one pitted stone, two hammerstones, and six manos. Other associated material on the site consisted of several other possible manos, some cracked rock and sandstone, and five chert flakes. A Late Woodland affiliation can be assigned, as well as a possible food processing function of some type, due to the high proportion of cobble tools and the low occurrence of chert debris.
Sc-273, 276, and 279 (Figure 3:14)

Location: SE1/4 Littleton 12; UTM N4458680-4458750 E706700-706925

Size: Variable clustering in a fairly continuous scatter 300 meters E/W by up to 80 meters N/S.

These three sites represent distinct clusterings of occupational debris along approximately 250 meters of an east/west trending upland lobe, with a continuous intervening light scatter. Each site has yielded Late Woodland pottery, and two of the sites have yielded Late Woodland arrow points. All are discussed together for clarity.

Green (1977:81) reported Sc-273 (the middle site) as having "a dense well defined concentration of Late Woodland pottery, . . . collected within a small, roughly oval, dark stain which may be a midden deposit, possible associated with a structure. The area of the stain is about 30 by 40 feet." Green collected 49 sherds and associated debris from this stained area. Plotsplotting of Sc-273 under poor conditions (fall disced corn stubble) recovered one sherd and one small, unnotched, triangular arrowpoint in an area 50 meters west of the stain location. The actual location of the stain (no longer visible) and the 49 sherds yielded only an untypeable midsection of a projectile point and a light clustering of material.

Possibly, under better conditions, a greater density of materials would have been observable, but more likely, the stain and large number of sherds represent the destruction of a subsurface feature after which the sherds disintegrated. This latter possibility was supported by a revisit to Sc-273 in the spring of 1982 after weathering down all winter. Despite good (50%-70%) visibility and a well weathered surface, no diagnostics were collected from this area.
Sc-276 yielded two side-notched, triangular arrow-points and two sherds on Green's initial survey, as well as a small, stemmed projectile point that may or may not be of Woodland affiliation. Pieceplotting under poor conditions yielded only a light cluster of material with another Late Woodland, side-notched, triangular arrow-point near the northeastern field edge. On a casual revisit to the site, a sherd was recovered near the approximate location of this point. A revisit for diagnostics in the spring recovered two more sherds from the site. A three-quarter grooved axe and a biface were also found on Sc-276 by Amax employees doing a soils study in 1980. Bulldozing on the overgrown lobe extending from the eastern end of the cultivated field revealed continued heavy occupation with seven pottery bearing locations being pieceplotted (containing a total of 23 sherds and one small, Late Woodland notched arrow-point). All but one sherd of this collection was concentrated in the easternmost 50 meters of the bulldozer cut. One sherd was found towards the presently cultivated portion of the site. Sc-276 apparently consists of two pottery bearing clusters. The overgrown eastern area of Sc-276 has been previously plowed (17-20 cm. of disturbance).

Sc-279 also exhibited a concentration of Late Woodland material during Green's initial survey (Green 1977:82). Nine sherds were recovered from "a concentrated area about 30 feet in diameter, located approximately 75 feet from the southern edge of the cultivated field and 125 feet from the eastern edge." Pieceplotting under poor conditions (fall disced corn stubble) failed to relocate this cluster. (The approximate location of this cluster is indicated on the site map of Sc-279 as a dotted circle.) South of this,
Green noted another concentration, consisting mostly of sandstone, which extended into an overgrown area. Pieceplotting, likewise, did not relocate this scatter. Approximately 50 meters north of Green's pottery bearing concentration, pieceplotting revealed another cluster of material which yielded three sherds.

A return visit to Sc-279 in spring of 1982 recovered two more sherds in this northern part of the site, and an Archaic point, typed as a faint side notched Matanzas along the field edge approximately 100 meters to the west.

It is emphasized that all three of these Late Woodland sites were collected under poor conditions during the pieceplotting phase of the work, resulting in inconsistent and apparently incomplete recovery. Although a visit for diagnostics supported the pieceplot data, it did not provide correlation debris density data. As it now stands, the three sites apparently have a total of seven general clusters of material, six of which have been confirmed as being of Late Woodland affiliation. Although "bulldozer survey" to the north of Sc-279 revealed no occupation, a southern extension of Sc-279, and an eastern extension of Sc-276 into overgrown areas, are indicated.

Figures B:10c, B:19j, B:20a, B:20e, B:27a, B:27b, and B:27c (Also see Green 1977:Plates 5d, 5k, 5l, 5p, 5q, 12l, 12g, 12r)
**Sc-275 West**

Location and Size: A 25 meter western extension off of the cultivated portion of Sc-275

Bulldozer survey and pieceplotting of cultural material on this overgrown upland lobe revealed two cracked rocks and a chert flake within 25 meters of the field edge. This portion of the site has a 19 cm. plowzone and is wooded with many young trees and little underbrush, except at the field edge.

**Sc-280 (Figure 3:15)**

Location: SE% Littleton 12; UTM N4458700 E706500

Size: 90 meters N/S by 120 meters E/W

Pieceplotting under good conditions supported Green's (1977:82) description of this site as a thin scatter with concentrations in the southeastern and south central portions. The southeastern lobe of the cultivated field yielded three distinct clusters of material, the easternmost probably continuing onto the overgrown lobe end. The northernmost of these three clusters (which Green called the south central concentration) did not yield any temporal diagnostics, but a large unifacial LaMoine River chert scraper was recovered here. The middle cluster yielded a 3/4 grooved axe, a celt and a small, side-notched, triangular arrow-point within a dense scatter. The easternmost cluster yielded no temporally diagnostic material. To the northeast of this area, across a ravine, is a lobe with a small cluster at its eastern field edge, apparently extending onto the overgrown lobe end. It was from this lobe that Green recovered an Early Archaic, subtriangular, flake knife. No further temporal diagnostics were recovered
from this portion of Sc-280. The remainder of Sc-280 consists of a thin, fairly uniform, scatter across the field edge to the west of the four concentrations. A Late Woodland triangular knife, a Late Woodland, sidenotched arrow-point, and a small bifacial adze were recovered from this more ephemeral scatter. Although site extensions onto the southeastern and eastern lobes were not checked by "bulldozer survey", distribution of the materials on these lobes indicate probable continuation. At least the southeastern lobe has been previously plowed. Revisits to the site in spring of 1982 recovered a mano, a pitted stone, a hammerstone, and the midsection of a possible Titterington Horizon point. Temporal affiliations assigned to Sc-280 are Late Woodland, Early Archaic, and possible Late Archaic.

Figures B:19f, B:20c, B:20k, B:24a, and B:24b (Also see Green 1977: Plates 3d and 3e)

Sc-281 (Figure 3:16)

Location: NW ¼ Littleton 12; UTM N4458975 E706200
Size: 240 meters N/S by 110 meters E/W

Green (1977:83) noted material concentrations on Sc-281 in the northern, central, and southern portions of the field, with pottery being recovered from the central and north-central areas. Diagnostics recovered by Green have been typed as an Ansell point, a Late Woodland triangular knife, two Karnak Stemmed blades, and a very thin bifurcate based point. Although it is probable that the bifurcate based point is a LeCroy, or a related Early to Middle Archaic point, it is significant to note that thin

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Figure 3:16 Site Map for Sc-281
bifurcate points have also been found as arrowpoints in the Late Woodland Period (e.g., see Milner 1981:94-95). Pieceplotting of Sc-281 was carried out under moderate conditions in a recently worked field of young corn. Possibly insufficient rain had fallen on the new surface since recovery did not approach Green's, no pottery being recovered. The northern concentration noted by Green is apparent on the pieceplot map as is a central cluster of material. In addition, a cluster of material was mapped on the northeastern lobe of the field. However, none of these clusters yielded chronologically diagnostic material during pieceplotting. A subsequent visit to the site recovered four sherds in the northeast lobe scatter. Bulldozing along the eastern margin of the field revealed additional scatter, especially on this northeastern lobe where a faint side-notched, Late Archaic Matanzas projectile point and a fragment of a Late Woodland arrowpoint (which was subsequently lost) were recovered. Through pieceplotting and Green's original survey information, it appears that Sc-281 has at least three clusters of Late Woodland occupation, one on each northern lobe and one to the south of the northeastern lobe. Each lobe has a small area of continued level ground outside of the present field boundary before sloping off towards the floodplain. Each of these lobes also display apparent terrace remnants along their slope to the floodplain. These level, or gently sloping benches, also have Late Woodland occupations (see Sc-454 and 455 (this section).

Figures B:10b, and B:18g (Also see Green 1977:Plates 2e, 3p, and 12n)
Sc-285 North

Location and Size: A 45 meter northern extension of Sc-285 onto a minimally disturbed lobe end

Bulldozer survey and piec plotting of cultural material on the uncultivated tip of this upland lobe revealed one cracked rock and three pieces of sandstone in a tight cluster at the very tip of the lobe. This portion of the site has a 12-14 cm. shallow plowzone.

Sc-290 (Figure 3:17)

Location: SW¼ Littleton 12; UTM N4458190 E706050

Size: 60 meters N/S by 150 meters E/W

This site is located on the edge of an upland depression that now drains to the northeast. Presumably, this is an ice block depression (or a "buffalo wallow" as they are commonly referred to). Immediately to the north, a portion of this depression is so poorly drained as to often have standing water. Although the "probably Late Woodland point" Green recovered from the site (1977:86 and Plate 12j) has been reclassified here as a Merom Expanding Stemmed point, he did recover two Late Woodland sherds. Piec plotting revealed a roughly linear or elliptical material scatter oriented east/west located south of the depression. A single sherd was recovered from a cluster at the eastern end of the scatter. It is possible that two additional clusters make up the rest of the scatter, although they are less definite. A moderate number of functional diagnostics was recovered from Sc-290 for its size.

Sc-315 (Figure 3:18)

Location: SE¼ Littleton 12; UTM N4458430 E707025
Figure 3:18 Site Map for Sc-315
Size: 90 meters NE/SW by at least 30 meters NW/SE

Green's survey visit to this site indicated a fairly intense occupation with a heavy concentration containing three sherds at the northeastern end of the site. Pieceplotting under very poor conditions (corn stubble and the inclusion of a great deal of wood chippage into the plowzone) recovered only 17 items and yielded only a single sherd. A bulldozer transect on the overgrown lobe to the north of the site yielded no material. A casual revisit to the site following planting recovered an Archaic point reworked into a scraper at the field edge south of the location of the sherd. It is assumed that the location of this sherd roughly corresponds with the location of those collected by Green, although it is clear this pickup represented an inadequate reflection of the site's surface material. Temporary damage to this site's plowzone (the many pieces of wood debris) precludes further surface work at this time.

Figure 8:13d (Also see Green 1977:Plate 5u)

Sc-317 (Figure 3:19)

Location: SW¼ Oakland 7; UTM N4458170 E707800

Size: 105 meters N/S by 225 meters E/W

Poor visibility reported by Green (1977:91) during the initial survey of this site apparently prevented its identification as a heavy Late Woodland occupation. No diagnostic material was recovered by Green, although a beveled, serrated point was reported to have come from the site. Pieceplotting under good conditions revealed a very densely occupied site with Late Woodland material concentrated at the eastern and western ends.
A total of 29 Late Woodland sherds were recovered, including a decorated rim. Two Late Woodland side-notched arrowpoints and a possible Late Woodland triangular knife were also collected. In addition, two stone axes (one full grooved and the other 3/4 grooved) were recovered. The axes in conjunction with an Archaic side-notched point (in the possession of Ike Billingsley of Camden, Illinois) and the point examined by Green substantiate Archaic components for this site. The full grooved axe was located at the western end of the site, far south of the clustered material. The 3/4 grooved axe was located at the eastern end of the site, at the far western end of the material clustered there. Sherds and Late Woodland points are scattered throughout the clusters.

Bulldozing around the field edge for drilling operations revealed continued occupation in the same areas. At the eastern end, the site consists of a large, heavy cluster of material entirely within the field boundaries, and another large cluster immediately to the southeast, which has been partially exposed in the overgrown portion of the lobe. The western end of the site is more uniformly occupied, with an essentially continuous scatter of material (superimposed clusters?) measuring 100 meters NE/SW and 60 meters NW/SE. The distribution apparently continues into the woods along the entire northern edge and onto a lobe to the southeast. There is only a light intervening scatter between the eastern and western portions of the site. Functional diagnostics from the site imply a large range of tasks characteristic of a sedentary Woodland occupation.

Figures B:7a, B:18h, B:20d, B:23a, and B:23b

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Sc-323 (Figure 3:20)

Location: NWx Oakland 18, UTM N4457375 E707825

Size: 240 meters W/S by 100 meters E/W

The original survey of this site produced only two chronologically diagnostic items, a Neuberger point and a Late Woodland sherd. The Neuberger was found to the northeast of the main site cluster near the head of a draw. The sherd was apparently found in the cluster, which piecplotting has substantiated. Although no pottery was recovered during the controlled collection, a small Late Woodland unnotched arrow point, and a Late Woodland Triangular knife were recovered in this large cluster, which measures 50 by 60 meters. A revisit in spring of 1982 recovered a Late Archaic Nebo Hill point from the main cluster also.

Bulldozer survey and plotting of material on the overgrown lobe to the south of this cluster, revealed a slight hiatus and then a continued heavy concentration of material. At the lobe end, three pieces of pottery, a sandstone abrader, and a 3/4 grooved axe were recovered amid a very heavy concentration of broken sandstone, cracked rock, and other material. This southern concentration is approximately 70 meters in width. Probing indicates that the northern portion of this overgrown lobe has a full modern plowzone depth, while the southern part has a shallower (approximately 13-15 cm. deep) plowzone. Sc-323 has a moderate complement of functional diagnostics and an unusually large number of manos.

Figures B:11d, B:19a, B:20g, and B:24c (Also see Green 1977:Plate 2v)
Figure 3:20 Site Map for Sc-323
**Sc-334 East**

Location: NW² Littleton 13; UTM N4457370 E705700

Size: A 45 meter eastern extension of the cultivated portion of Sc-334

Bulldozed survey and pieceplotting of cultural material on the presently uncultivated lobe end east of Sc-334 revealed one cracked rock, one piece of sandstone, and two chert flakes within 60 meters of the trench. Sc-334 is a Late Woodland site on the edge of the flat uplands, which is just out of the five year plan area of study. However, this eastern extension is within that boundary. The eastern extension has a 17-20 cm. plowzone and is now covered in a scrubby pasture growth (i.e., pasture but with some briars and a few small trees). A Late Woodland affiliation cannot be assumed.

**Sc-335 Southeast**

Location and Size: A 120 meter southeastern extension from the cultivated portion of Sc-335 onto an uncultivated upland lobe

Bulldozer survey and pieceplotting of cultural material revealed 22 items in several locations within 350 meters of the trench. This portion of the site has a 14-17 cm. plowzone and is covered in a scrubby pasture which is more heavily grown over on the eastern portion of the lobe. Material consisted of 15 cracked rocks, two pieces of sandstone, one chert flake, two pieces of chert, one cobble and one mano.

**Sc-362 North**

Location: NW² Littleton 13; UTM N4457330 E705650
Size: A 150 meter northern extension of Sc-362 onto an uncultivated upland lobe end

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed a uniformly moderate scatter of eleven items in 165 meters of the trench. Although the cultivated portion of Sc-362 is just outside the five year plan area of study, this northern extension lies within that boundary. This portion of the site has a 20-22 cm. plowzone and is presently covered with an open, scrubby pasture. Material consisted of one chert flake, five cracked rocks, four waterworn pebbles, and a large well made, plano-convex scraper (3.9 by 1.9 cm.). This scraper is probably of Archaic affiliation.

Sc-433 and Sc-479 (Figure 3:21)

Location: NE½ Oakland 18; UTM N4457755 E707955 and NW¼ Oakland 18; UTM N4457700 E707900, respectively

Size: 335 meters NW/SE by 90 meters NE/SW

Although both Sc-433 and Sc-479 had been reported as new sites in cultivated fields, investigations into overgrown areas adjacent to these sites made their nature increasingly clear. The only procedure lacking for a full understanding of the surface distribution of Late Woodland material on these sites is pieceplotting of artifacts within the two fields. Pottery has been recovered in five locations for these two sites by survey, shovel probing, and bulldozer transects. Since this large upland lobe overlooks the juncture of Bauer Branch and the West Branch of Sugar Creek, it is a prime Late Woodland occupational area. A fairly arbitrary site boundary has been developed which associates material to the northeastern
and eastern portions of this lobe with Sc-433 and that from the southwestern portion with Sc-479. The sites are separated at the west end by a gravel road and further east by an apparent paucity of material in the west and of the bulldozer trench just south of the east/west portion of the gravel road.

Although the pasture/hayfield portion of Sc-433 (inside the road's curve) has not been observed under cultivation, much material was visible through the grass cover which burned off during the early spring of 1981. A sample of material was collected and a concentration of pottery (five sherds) was noted southwest of the center of this field. Bulldozer transects to the north and east revealed continued heavy occupation in both directions with two distinct clusters occurring on the long eastern lobe. Pottery (one sherd) was found on the northern transect and pottery (three sherds, including a possible miniature vessel fragment), a heavily reworked, Steuben-like projectile point, and a sandstone abrader, were recovered in the far eastern lobe end cluster. No chronologically diagnostic material was recovered from the intervening cluster. Thus, Sc-433 consists of at least three, and probably four, distinct clusters of Late Woodland material. Both the northern and intermediate eastern extensions have been plowed (18+ cm.) but the far eastern cluster apparently has not been disturbed.

Survey on the small, uncultivated portion of Sc-479 yielded a single Late Woodland sherd and the tip of a probable Late Woodland arrowpoint. A Hardin point was also found northwest of the scatter at the head of a draw.
A revisit to this part of the site in spring 1982 collected one mano, one hammerstone, and a serrated point tip.

A shovel probing grid was carried out on the overgrown lobe to the southeast of the cultivated portion of Sc-479 with 35-50 cm. wide units being excavated to the base of the plowzone at roughly 10 meter intervals. A surprisingly dense pattern of material was encountered with an extent (approximately 60 meters across) matching that of many of the known Late Woodland clusters. Two definite and two probable pit features were encountered and a total of nine pieces of pottery were recovered, with 18 of the 39 probes yielding cultural materials. Apparently, Sc479 consists of two clusters or a single extended cluster of Late Woodland material, only a small portion of which is in the currently cultivated field. This lobe appears to have been previously plowed, with a plowzone of 20-24 cm. although certain areas exhibit much shallower plow depths. To the northeast, between Sc-479 and Sc-433, a large disturbed area has been heavily used as an historic dump, which contains much debris.

Figures B:6c, B:15a, and B:19g

Sc-454 (Mouse's Maze)(Figure 3:22)

Location: NW¼ Littleton 12; UTM N4459330-4459380 E706170

Size: 100 meters N/S by 30 meters E/W

This site is located on an overgrown toeslope terrace or "bench" just above the West Branch of Sugar Creek. There are two such benches on the slope leading off of the northwest lobe of Sc-281, each of which contain
Figure 3:22 Site Maps for Sc-454 and Sc-455
Late Woodland occupational debris. Bulldozing for drilling operations revealed a heavy scatter on Sc-454, including seven sherds, one of which is a decorated shoulder. A transect of soil coring probes was taken within the bulldozer path, and in the scrub alongside, to check for feature fill, resulting in the location of eight probable features. There was some indication that only the darker feature fills were being identified, as an additional four features were located by shovel scraping at the northern end of the transect in an area which had been previously probed. These four features were excavated, two of which yielded additional pottery.

The site subsoil matrix contains small natural chert gravel and sandstone detritus; there is a sandstone outcrop to the immediate west of the site at a level intermediate between Sc-454 and Sc-455 and another bedrock exposure projecting into the stream bed at the toe of Sc-454. On the lobe front slope, the area between Sc-454 and Sc-455 was more gently sloping and contained continued cultural material scatter, including a sherd and a small, side-notched Late Woodland arrowpoint. Although it would seem likely that material on this still relatively steep slope was redeposited by bulldozing from upslope (Sc-455), probes located three more possible features on the slope as well. This issue presently stands unresolved. Although the upslope portion of Sc-454 may have been plowed, the northern lobe end appears not to have been.

Figure B:19k
Sc-455 (Snail) (Figure 3:22)

Location: NW1/4 Littleton 12; UTM N4459310 E706150

Size: 30 meters N/S by 30 meters E/W

This site is located on an overgrown midslope "bench" down the slope from the northwestern lobe of Sc-281. Bulldozing for drilling operations revealed a moderate to heavy scatter of cultural materials including a sherd, a triangular Late Woodland knife, and the base of an Archaic sidenotched point. Three possible features were located by soil core probes, one of which was excavated, yielding a small polyhedral core made of a carmel colored chert gravel, abundant in the site matrix (Grover Gravel?). This apparent degenerative remnant of the blade core technology provides another example of the cultural conservatism which seems to characterize the Bauer Branch assemblage. In addition to the chert gravel, small pieces of sandstone and various pebbles occur naturally in the site's subsoil. As was the case with the slope between Sc-454 and Sc-455, the slope between Sc-455 and the northwestern lobe of Sc-281 contains scattered cultural materials mixed with the till materials which are eroding out here as well. Sc-455 has apparently been previously plowed.

Figures B:7f and B:20j

Sc-457 Northeast

Location and Size: A 55 meter northeastern extension of Sc-457 onto a heavily overgrown upland lobe end

Bulldozer survey and pieceplotting of cultural material on the overgrown upland lobe end revealed four items within 55 meters of the field edge.

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This portion of the site has a 20 centimeter plowzone and is presently covered in a very dense small tree and brush growth. Material consisted of three pieces of sandstone and a single cracked rock.

Sc-461 (Mata Hari) (Figure 3:23)

Location: NW¼ Oakland 18, UTM N4457490 E707360

Size: 105 meters N/S by 35 meters E/W

This site was located in two different bulldozer cuts provided for drilling operations. The northern cut removed the shallow plowzone in a semi-circle in the northern end of the overgrown lobe. In this cut, incredibly dense materials in upland midden deposits were exposed. Over 200 items were pieceplotted in this cluster, measuring 260m$^2$, including mammal, reptile, and fish bone, shell, a great deal of pottery, an Ansell point, several sandstone abraders, and much broken sandstone. Another Ansell point was found further downslope, redeposited by the bulldozer.

A second bulldozer cut, south of the first one, transected another very dense cluster and apparent midden. Unfortunately, the depth of this cut allowed only a profile of the midden (Figure 3:24) as opposed to a horizontal distribution of material which could be pieceplotted. An abundance of material, of the same range described above, was collected from disturbed contexts in this cut, including two Ansell points and a contracting stem point. A profile map was made on the side of the cut's south wall and three features were defined below an approximately 30 cm. deep midden (approximately the top 20 centimeters of this midden had been plowed). Two of these features were excavated yielding additional pottery
Figure 3:23 Site Map for Sc-461
Figure 3:24 Sc-461 South Cut Profile
and bone. An Ansell point was recovered while profiling Feature 2. A large rimsherd (Figure B:25) with exterior vertical rim/lip stamping and interior rim punctates with resultant exterior bosses was recovered from the midden further downslope.

Two factors are of special note for this site. First, this site constitutes the only case of good faunal preservation located to date in the Littleton Field. Preservation at this site is excellent (as the many shell fragments and small fish bones testify), as opposed to almost non-existent faunal remains on all other sites. Secondly, ceramic decoration and variation at this site, as well as the consistent occurrence of Ansell points, reinforce the view that there is temporal depth in the Bauer Branch complex. Design elements expressed in the large rim mentioned above are indicators of Late Middle Woodland (Weaver) contacts or occupation, which Green has postulated may be the source of the Bauer Branch complex. A small portion of Sc-461 extends into the cultivated portion of the lobe, but the majority of the site is in the overgrown section. Probes indicate that the site has an approximately 20 cm. deep plowzone, and that both heavy clusters have substantial midden deposits (ca. 15 cm.) underlying the plowzone, with still deeper pit features. A small complement of functional diagnostics, noticeably lacking in percussion, crushing and grinding tools, is present.

Figures B:16b, B:16c, B:16e, B:16g, B:17c, B:18c, B:25, B:26a, B:26b, B:26c, B:26d, and B:26e
Sc-468

Location: SW¼ Littleton 12; UTM N4458170-4458245 E705830-705940

Size: 30 meters N/S by 50 meters E/W

Although this small site had been reported as a new site in the cultivated fields, enough evidence has been gained from the first collection to indicate the probable presence of subsurface Late Woodland deposits. Two Late Woodland side-notched arrowpoints were recovered from the site, although no pottery was located. A Middle to Late Archaic occupation is indicated by a Table Rock point; four Early Archaic points are present as well. Bulldozer survey and pieceplotting of cultural materials on the adjoining western lobe end verifies an extension of this site. A total of 13 items were located within 75 meters of bulldozed transect in this previously plowed (13 cm.) pasture. Materials consisted of seven cracked rocks, one piece of sandstone, two cobbles, two chert flakes, and one piece of chert shatter.

Figures B:2a, B:5e, B:9g, B:14a, B:14d, B:19o, and B:20f

Sc-470

Location: SE¼ Littleton 12; UTM N4458540 E706750

Size: 75 by 75 meters

Bulldozing for drilling operations revealed a moderately dense scatter on the western portion of this overgrown lobe end. A chert preform or knife, and an Early Archaic Neuberger point were recovered. Sixteen additional items (cracked rock and chert) were pieceplotted. This area has been previously plowed to 21 cm. but is now covered with a dense bushy second growth.
**Sc-480 Quail (Figure 3:25)**

Location: NE¼ Littleton 12; UTM N4459130 E706435

Size: Site size is unknown

A visit to this site under very poor conditions (full grown wheat) yielded two chert flakes along the field edge. A revisit after harvest with poorly rained on, disced wheat stubble indicates a more extensive scatter for this lobe, but no material was collected at this time. A third visit yielded a Late Woodland sherd at the center of the northern field edge in an eroded area, but poor conditions still precluded visibility for additional items. Although it can be assumed that a Late Woodland occupation is present here, a surface collection has yet to be carried out.

**Sc-481 Southeast Site**

Location: NE¼ Oakland 18; UTM N4457505 E708105

Size: At least 30 meters N/S by 15 meters E/W

This site is situated on the end of a very narrow lobe extending outward from Sc-433 and Sc-479. The lobe widens somewhat at its extreme end at which a series of shovel probes at roughly 10 meter intervals indicated an occupation pattern 30 meters long and at least 15 meters across. All but one shovel probe on this widened lobe end recovered cultural material, with one probe containing 32 chert flakes. Five meters to the west of this probe a shallow feature containing charcoal and baked clay was located, using a soil core sampler. No functional or chronological diagnostics were recovered from the site. Although a seldom-used dirt road cuts through the site, it appears otherwise undisturbed.
Figure 3.25 Site Map for Sc-480
**Sc-520 Powerline**

Location: NE\(4\) Littleton 13; UTM N4457480 E706380

Size: Approximately 45 by 45 meters

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed six items within 45 meters of the trench, indicating a moderately dense scatter near the lobe end. This area is presently in a heavily overgrown young timber, and apparently has been plowed only prior to mechanized agricultural. A 12-14 cm. plowzone is present. No diagnostic material was recovered. Material consisted of four cracked rocks, one cobble, and a single chert flake.

**Sc-521 Grandfather**

Location: NW\(4\) Littleton 13; UTM N4457520 E705760

Size: 40 meters N/S by 70 meters E/W

Bulldozer survey and pieceplotting of cultural material on this minor upland lobe revealed 13 items within 115 meters of the trench, indicating a moderately dense scatter. This lobe end is presently in open pasture, but has been previously plowed, with an 18 cm. plowzone being present. No diagnostic material was recovered. Material consisted of six pieces of sandstone, five cracked rocks, one pebble, and a single chert flake.

**Sc-522 Cosmos**

Location: NW\(4\) Littleton 13; UTM N4457550 E705880

Size: 150 meters NW/SE by approximately 75 meters NE/SW

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed 21 items within 150 meters of trench, indicating a moderately
dense scatter. This lobe end is presently in open pasture, but has been previously plowed, with an 18 cm. plowzone being present. No diagnostic material was recovered. Material consisted of eight pieces of sandstone, three cobbles, seven cracked rocks, one chert flake, and two non-flake pieces of chert.

**Sc-523 Big Boulder**

**Location:** NW¼ Littleton 13; UTM N4457740 E706080

**Size:** 40 by 40 meters

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed four items within 50 meters of trench at the extreme southeastern lobe end, indicating a moderate scatter. Although most of this lobe has been previously plowed to approximately modern depths (20-22 cm.), the southeastern lobe end, including the site area, has a more shallow plowzone (11 cm.). A single metate was the only diagnostic item found within the bulldozer trench. The remainder of the material consisted of two cracked rocks and one very large cobble.

**Sc-524 Turnaround**

**Location:** NW¼ Littleton 13; UTM N4457710 E706260

**Size:** 120 meters N/S by 40 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this upland lobe revealed 13 items within approximately 200 meters of trench, as well as a small area containing a very dense concentration of broken sandstone and cracked rock at the southernmost portion of the trench. Although no diagnostic material was recovered, this cluster of sandstone and cracked
rock could possibly represent a feature since only the northern portion of this site has been plowed (13 to 16 cm. plowzone). A major portion of the site is on the apparently undisturbed southern lobe end. The 13 items recovered consisted of four cracked rocks, two cobbles, two pieces of sandstone, four flakes, and one hammerstone.

Sc-525 Land's End

Location: NE¼ Littleton 13; UTM N4457810 E706330 to N4457590 E706450
Size: 350 meters NW/SE by 100 meters

Bulldozer survey and pieceplotting of cultural materials on this overgrown upland lobe revealed 20 items within 400 meters of trench, with a concentration of this material occurring towards the southeastern lobe end where a very dense scatter is indicated. Most or all of this site has been previously plowed (13 to 16 cm. plowzone). The site is divided by a north/south fence line running down the lobe. The west side is forested with larger trees while the east side (which contains most of the archaeological material) is covered in a dense younger tree and scrub growth. One hammerstone, one mano, nine cracked rocks, three pieces of sandstone, four cobbles, one chert flake and one chert chunk were present.

Sc-526 Prairie (Figure 3:26)

Location: SE¼ Oakland 18; UTM N4457245 E708000
Size: 150 meters NW/SE by 60 meters SW/NE

Bulldozer survey and pieceplotting of this upland lobe end (Figure III:26) revealed a very dense concentration of cultural material. Approximately 150 meters of trench were bulldozed in the site area. Pottery
was found in four locations, one of which contained eleven sherds. A 1.5 by 1.5 meter test square in this area recovered more pottery and located an oval shaped pit feature (70 by 45 cm.) which continued to a depth of 34 cm. below the base of the plowzone. The feature was not excavated at this time. Plowzone depth is approximately 15 cm., although this field has probably been plowed only a few times at most (Personal communication with Carol S. Thompson regarding investigation of the floral community established on this lobe end). In addition to pottery, the total of three site visits yielded one Late Woodland triangular knife, one Steuben point base, one abrader, 23 cracked rocks, 29 pieces of sandstone, three cobbles and ten chert flakes were present in the bulldozed trenches.

Figures B:15h and B:201

Sc-527 King Bird (Figure _______)

Location: NW¼ Oakland 18; UTM N4457885 E707890

Size: 60 by 60 meters

Bulldozer survey and pieceplotting of cultural material on this overgrown upland lobe end revealed 16 items within 75 meters of trench. Pottery was found in a single location, where the majority of material was also found. A path bulldozed for drilling operations and having irregular surface visibility was scrutinized immediately to the north of this. This area yielded seven additional items. This lobe has apparently been previously plowed, although not deeply. A 13 cm. plowzone is indicated. A total of ten chert flakes, eight cracked rocks, three sandstone, one cobble fragment, and the two pieces of pottery were present.
Figure 3:27 Site Map for Sc-527
Sc-528 Compression

Location: NW¼ Oakland 18; UTM N4457940 E707800

Size: 35 meters N/S by 60 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this overgrown upland lobe revealed 15 items within 60 meters of trench, indicating a rather dense scatter. Probes indicate an 18 to 20 cm. plowzone. No diagnostics were recovered. Material consisted of nine cracked rocks, two pieces of sandstone, three cobbles, and a chert flake.

Sc-529 Tin Roof

Location: SW¼ Littleton 12; UTM N4458065 E705760

Size: Approximately 45 by 45 meters

Bulldozer survey and pieceplotting of cultural materials on this small upland lobe revealed a moderately dense scatter of nine items within 45 meters of trench. The site has been previously plowed (12 to 14 cm. plowzone) and is in open pasture. There is a substantial amount of historic ceramics and brick present in the plowzone as well. Material consisted of eight cracked rocks and a piece of sandstone.

Sc-530 Argiope

Location: SW¼ Littleton 12 and SW¼ Littleton 11; UTM N4458000

E705480-705720

Size: Up to 60 meters N/S by 230 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed a very dense scatter of 81 items within 260 meters of trench. The site has a 21 cm. plowzone and is contained mostly in what is now open
pasture. Approximately 70 meters of the site is on the wooded lobe west of
the boundary of Sections 11 and 12 and is not as deeply plowed. Material
consisted of 25 cracked rocks, 42 chert flakes, seven pieces of chert, five
pieces of sandstone, one cobble, and one possible metate.

Sc-531 Crow

Location: SE¼ Littleton 11; UTM N4457960 E705060
Size: 15 by 15 meters

Bulldozer survey and pieceplotting of cultural materials on this upland
lobe end revealed six cracked rocks and a chert flake in a concentrated area.
The site is in open scrub/pasture and probably has been previously plowed.

Sc-532 Full Circle

Location: SE¼ Littleton 13; UTM N4458190 E706860
Size: Approximately 75 meters N/S by 60 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this large
upland lobe revealed six cracked rocks within 60 meters of trench indicating
a moderately dense scatter. This site has a 19 cm. plowzone and is presently
in a clearing/pasture surrounded by heavy woods.

Sc-533 Sassafrass

Location: SE¼ Littleton 13; UTM N4457160 E707000
Size: 135 meters NW/SE by 120 meters NE/SW

Bulldozer survey and pieceplotting of cultural material on this large
upland lobe end revealed a dense scatter of 34 items within 165 meters of
trench. The site has a 15 cm. plowzone at its western end, but probes taken
at the eastern end (towards the lobe end) exhibit only a 10 cm. plowzone. The majority of the site is in the same clearing/pasture as the Full Circle Site but the extensions onto the east and southeast lobe ends are covered in dense young trees and scrub. Material consisted of twelve cracked rocks, 15 pieces of sandstone, six chert flakes, and one very crude biface.

**Sc-534 Ruffle Road**

Location: SE4 Littleton 13; UTM N4457170 E706740

Size: 45 meters N/S by 75 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed a fairly dense scatter of 13 items within 75 meters of trench. The site has a 14 to 16 cm. plowzone and is currently in a very scrubby pasture/young woods cover. Material consisted of six cracked rocks, one piece of sandstone, two chert flakes, one chert core, two cobbles, and one piece of chert.

**Sc-535 Logjam**

Location: SE4 Littleton 13; UTM N4456975 E706650

Size: 50 meters N/S by 150 meters E/W

Survey (of haul roads and other disturbed surfaces from logging operations) and pieceplotting of cultural material revealed a sparse scatter of nine items within 150 meters of trench. The site has a 15 cm. plowzone and is grown up in a heavily undergrown woods. Material consisted of three cracked rocks, two chert flakes, one chert shatter, one cobble and two projectile points. One projectile point is an untyped, roughly parallel sided (probably side-notched) blade midsection. The other
projectile point is a very thin, large, basally thinned and corner-notched, Neuburger point of Early Archaic affiliation (see Conrad, 1981).

Figure B:3b

Sc-536 Crosscut

Location: SE¼ Littleton 13; UTM N4456950 E706880

Size: 60 meters N/S by 75 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed eleven items within 75 meters of trench, with clear clustering towards the lobe end. The site has a 14 cm. plowzone and is presently covered by a thickly undergrown young forest. Material consisted of three cracked rocks, one broken cobble, four pieces of sandstone, two pebbles and a small barbed, stemmed point. This point is either a late Woodland arrowpoint or more probably a late Archaic micro-point.

Figure B:14c

Sc-537 Tributary

Location: SE¼ Littleton 13; UTM N4456865 E706860

Size: 25 meters N/S by 90 meters E/W

Bulldozer survey and pieceplotting of cultural material on this very narrow upland lobe end revealed ten items within 90 meters of trench. The site has a 14 cm. plowzone and is presently covered with a growth of young trees and some underbrush. Material consisted of four pieces of sandstone, three cobbles, and three chert flakes.
Sc-538 Rain Dance

Location: SE 1/4 Littleton 13; UTM N4456820 E706840

Size: 60 meters NW/SE by 30 meters NE/SW

Bulldozer survey and pieceplotting of cultural material on this narrow upland lobe end revealed a very dense scatter of 34 items within 55 meters of trench. The site has been plowed but it is difficult to interpret how deeply since the soil was very compact and difficult to penetrate with a probe. Present cover is young trees with little underbrush. Material consisted of 18 cracked rocks, nine pieces of sandstone, three chert flakes, one pebble, a sandstone abrader, and two untyped projectile point fragments (one barb and one midsection). The site has tentatively been assigned a Late Woodland affiliation on the basis of the sandstone abrader and the characteristic localized intensity of materials.

Sc-539 Julie

Location: SE 1/4 Littleton 13; UTM N4456700 E706760

Size: 30 by 30 meters

Bulldozer survey and pieceplotting of cultural material on this narrow upland lobe end revealed a very dense scatter of 24 items within 30 meters of trench. The site has an 18 to 19 cm. plowzone and is covered with a growth of young trees and relatively little underbrush. Material consisted of one cracked rock, eight pieces of sandstone, one cobble, 13 chert flakes, and one piece of chert shatter.

Sc-540 Margin

Location: SE 1/4 Littleton 13; UTM N4456665 E706645

Size: 90 meters NW/SE by 45 meters NE/SW
Bulldozer survey and pieceplotting of cultural materials on this upland lobe end revealed a dense scatter of 27 items within 115 meters of which clustered near the end of the lobe. The site has a 14 cm. plowzone and although the western margin is in an open scrub/pasture, the majority of the site is covered by an overgrown scrub and young woods. Material consisted of nine cracked rocks, 16 pieces of sandstone, one piece of chert, and one chert flake.

**Sc-541 Red Oak**

Location: SE\(^{2}\) Oakland 18; UTM N4457245 E708150

Size: 30 meters N/S by 135 meters E/W

Survey of a bulldozer trench and additional areas of logging disturbances and pieceplotting of cultural material on this low, upland extension into the floodplain of Bauer Branch revealed a moderate scatter of twelve items within 135 meters of trench. The site apparently has never been plowed and has a large growth of older trees as cover. Subsoil is a sandier silt than that of the upland lobes, and small, apparently natural pieces of sandstone and small pebbles are frequent. Materials consisted of four chert flakes, one battered pebble, and seven pieces of angular, broken sandstone which appears to probably be cultural rather than natural.

**Sc-548 Branch**

Location: SW\(^{2}\) Oakland 7; UTM N4458420 E707360 to E707510

Size: 60 meters N/S by 90 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this overgrown upland lobe revealed eight items within 150 meters of trench,
indicating a moderate scatter. Much of this material was concentrated at the lobe end. The site has been previously plowed (21 cm. plowzone) and is presently covered with a dense tree and scrub growth. Material consisted of three cracked rocks, three pieces of sandstone, one cobble, and one possible metate.

Sc-549 Pleasant Clearing

Location: SE¼ Littleton 12; UTM N4458550 E706890
Size: 40 meters N/S by 45 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this upland lobe end revealed twelve items within 45 meters of trench indicating a concentrated dense scatter. Although most of this ridge top has been only more recently allowed to revert to overgrowth and has a 21 cm. plowzone, the extreme eastern end (containing almost all of the Pleasant Clearing Site) has only a 14 to 16 cm. plowzone. No diagnostics were recovered. Material consisted of seven cracked rocks, three pieces of sandstone, one cobble, and a chert flake.

Sc-550 Sapling

Location: NW¼ Littleton 12; UTM N4458820-4458980 E706110
Size: 105 meters N/S by 45 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this narrow upland lobe revealed ten items within 85 meters of trench. This material was concentrated into a distinct cluster at mid-ridge. Although there are large trees and little undergrowth on this lobe, a moderately deep plowzone (16 to 17 cm.) is present. Materials consisted of four cracked rocks, three chert flakes, two pieces of chert shatter, and a pebble.
Sc-551 Daybreak

Location: NE1/4 Littleton 11; UTM N4458850-4458960 E705435-705510

Size: 75 meters by 75 meters

Bulldozer survey and pieceplotting of cultural materials on this upland lobe revealed a evenly distributed moderate scatter (twelve items) within approximately 150 meters of trench. The site has an 18 to 21 cm. plowzone and is covered in a dense scrub growth. Material consisted of five chert flakes, five cracked rocks, and two cobbles.

Sc-552 J. Fard (Figure 3:28)

Location: NE1/4 Littleton 11; UTM N4458880 E705405

Size: 75 meters N/S by 40 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe revealed a very dense scatter consisting of 23 items within 70 meters of trench. The site exhibits some clustering towards the middle to northern lobe end. It has a 13 to 17 cm. plowzone and is covered in heavy, fairly mature woods with only moderate undergrowth. A Madison point was recovered from the most dense portion of the site indicating a probable Late Woodland affiliation for this site. Other material consisted of 16 pieces of chert, four cracked rocks, one core, and one pebble.

Figure B:19b

Sc-553 Surveyor Site

Location: NW1/4 Littleton 11; UTM N4458830 E705350

Size: Approximately 40 meters N/S by 60 meters E/W
Figure 3:28 Site Map for Sc-552
Bulldozer survey and pieceplotting of cultural material on this narrow upland lobe end revealed 16 items within 60 meters of trench indicating a dense scatter which tended to cluster at the lobe end. The site has an approximately 16 to 17 cm. plowzone and is covered in open woods with many smaller trees. Material consisted of four cracked rocks, four pieces of sandstone, four chert flakes, two pieces of chert shatter, and two chert chunks.

Sc-554 Lost Ridge

Location: SE² Littleton 11; UTM N4458750 E705325

Size: Approximately 45 meters N/S by 135 meters E/W

Bulldozer survey and pieceplotting of cultural materials on this narrow upland lobe revealed a very dense scatter along the entire ridge top. Forty-four items were present within 135 meters of trench. This site has been previously plowed, with a 21 cm. plowzone along most of the ridge but only a 17 cm. plowzone on the end. An open woods with many small trees and little underbrush covers the site. Material consisted of 17 cracked rocks, two pieces of sandstone, 19 chert flakes, three pieces of chert, two manos (one pitted), and a metate/anvil stone.

Sc-555 Shortstop

Location: SE² Littleton 11; UTM N4458620 E705370

Size: Approximately 30 meters N/S by less than 45 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed six items in a short length of trench (approximately 25 meters). However, the trench did not continue completely to the lobe end.
Plowzone depth for this site was not checked directly but it has the same cover (open woods with small trees) as the main body of this lobe immediately to the east. A 19 cm. plowzone is present here and probably on the Shortstop Site as well. Material consisted of four cracked rocks, and a mano and metate lying side by side.

**Sc-556 Narrow Run**

Location: SE½ Littleton 11; UTM N4458590 E705345

Size: Single item to date

Bulldozer survey on this upland lobe end located a single humpbacked, unifacial scraper. The site has probably been previously plowed as per Sc-555 and has the same type of cover.

**Sc-557 Gingham**

Location: SE½ Littleton 11; UTM N4458415 E705150

Size: 40 meters N/S by 90 meters E/W

Bulldozer survey and pieceplotting of cultural material on this westernmost extension of a very large wooded upland lobe revealed a dense scatter of 16 items within 90 meters of trench. This scatter covers the small lobe end and extends somewhat back on to the main body of the large upland lobe. The site has an 18 to 21 cm. plowzone and is covered with open woods and many small trees. A rock filled feature was located at the eastern end of this scatter containing two very large pieces of sandstone and a chert chunk in the same hole. Other material consisted of five cracked rocks, five chert flakes, one retouched chert flake (LRC) and one pebble/cobble.
Sc-558 Twin Deer

Location: SE1⁄4 Littleton 11; UTM N4458350 E705160

Size: 30 meters N/S by 75 meters E/W

Bulldozer survey and pieceplotting of cultural material on this narrow extension of a large wooded upland lobe revealed a relatively dense scatter of 19 items in 75 meters of trench. Most of this material clustered towards the lobe end. This site was not checked for previous plowing but the rest of the large upland lobe has a 16 to 21 cm. plowzone and a similar open woods growth with many small trees and a few large trees. Material consisted of six cracked rocks, two pieces of sandstone, one cobble, one piece of chert shatter, seven chert flakes, and a mano and metate.

Sc-559 Dead Fall

Location: SE1⁄4 Littleton 11; UTM N4458285 E705470 to E705550

Size: Two distinct small clusters of 20 by 20 meters each

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed two distinct clusters of four items each approximately 45 meters apart. The cluster at the lobe end contained three cracked rocks and an untyped, expanding stemmed, barbed Late Archaic projectile point. The more eastern cluster consisted of a cracked rock, a chert core, a retouched thick chert "blade", and a portion of an abraded sandstone tablet or thin block. The site has an 18 to 20 cm. plowzone and is presently covered in open woods with many small trees.

Figure B:13g
Sc-560 Blue Racer

Location: SW¾ Littleton 12; UTM N4458200 E705750

Size: Approximately 45 by 45 meters

Bulldozer survey and pieceplotting of cultural materials on this small upland lobe revealed a moderately dense scatter of seven items within approximately 40 meters of trench. The site has a 18 cm. plowzone and is presently in open pasture. Material consisted of three cracked rocks, one cobble, two chert flakes, and one piece of chert shatter.

Sc-561 Separation

Location: SE¾ Littleton 11; UTM N4458160 E705265

Size: Approximately 60 meters NW/SE by 60 or less meters NE/SW

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed a rock filled feature consisting of at least eleven cracked rocks (four of which were fairly large) and a single cracked rock 60 meters northwest at the lobe end. This site has a 13 cm. plowzone only and is covered in an open woods containing mostly young trees, but quite a few large trees.

Sc-562 Bee Sting

Location: SE¾ Littleton 11; UTM N4458120-4458230 E705100

Size: 75 meters N/S by 45 meters E/W

Bulldozer survey and pieceplotting of cultural material on this upland lobe end revealed 16 items within 75 meters of trench. The site apparently does not continue into the woods which cover the extreme northern lobe end. The site is in open scrub/pasture and has probably been previously plowed.
Material consisted of seven cracked rocks, five chert flakes, two pebbles, one chert core, and a mano.

3.3 **Summary**

In summary, Section III contains the testing results for one apparently intact site (undisturbed by plowing), 36 sites (with extensions) judged to contain intact subsurface deposits (features or remnants of features below plow disturbance), and 39 sites which contain artifactual concentrations or overall density indicative of potential for bearing information, but which are in uncultivated areas. A summary of these categorizations can be found in Appendix C.
4.0 FINAL TESTING PHASE RESULTS FOR SITES INVESTIGATED VIA MULTIPLE SURFACE COLLECTION TECHNIQUES (SECTION IV)

4.1 Discussion

Section IV sites are those sites or portions of sites which are in cultivated fields and have not met criteria designed to indicate the presence or likelihood of intact subsurface deposits. The information bearing potential of these sites is somewhat impaired as plowing has disturbed a larger percentage of the contextual/distributional information of the archaeological materials. Nearly the entire depth of archaeological deposits is encompassed in the plowed level on such sites. Lateral displacement does not generally take place to such a degree that the site's distributional data is of no value, although all vertical control is hopelessly lost by mixing of the plowed soil. Information regarding period, function, and internal site structuring in such sites is only available through work carried out on their plowed surfaces. Repeated visits and controlled collections are then the best method for collecting this information, with only minimal attention being necessary for confirming the absence of intact subsurface deposits. Full pieceplots were carried out in the summer of 1981 with return visits occurring during the following fall, winter, and spring. Plowzone information has been recorded and thus these sites require only the above mentioned confirmation. A description of investigations on each site follows and site data is presented in tabular form in Appendix A. The location of all sites is shown in Figure 4:1.

4.2 Site Descriptions

Sc-234 (LN-16) (Figure 4:2)

Location: SE¼ Littleton 12; UTM N4458075 E706580

Size: Approximately 25 meters N/S and 45 meters E/W.
Only a single flake was recovered from Sc-234 by Green (1977) on his initial survey (due apparently to heavy crop cover). A complete piece-plotting of all cultural debris yielded a total of 18 items, most of which were in a cluster near the southern field edge, which is cut by an east/west roadbed. Pieceplotting was completed with very high visibility and after sufficient rain to wash the artifacts. Material consisted of chert, cracked rock, and sandstone. The only tool recovered was a non-retouched, utilized flake blade. Due to the tightly clustered nature of the surface scatter, it is likely that Sc-234 represents a single occupational episode, however, period and function can not be adequately assigned due to the paucity of artifacts.

Sc-235 (LN-1)

Location: SW¼ Littleton 13; UTM N4457000 E706200

Size: Approximately 275 meters N/S and 150 meters E/W

Only the northern extreme of Sc-235 is included within the Five Year Plan area. Green (1977:71) characterized this site as having a thin scatter at the north end and a very thin scatter towards the south. Since only a very few items were found, it was not deemed necessary to pieceplot and collect. This sparsely occupied area represents only a small portion of the site. Neither Green's survey nor the Phase II visit yielded any temporal diagnostics, although Green reported a bifacial scraper, one pitted stone, and two hammerstones. A revisit in spring 1982 recovered no additional material.

Sc-238 (Skowronek #2)(Figure 4:3)

Location: NW¼ Oakland 18; UTM N4457550 E707200

Size: Approximately 225 meters N/S and 100 meters E/W
Figure 4:3 Site Maps for Sc-238 and Sc-260
Sc-238 consists of a sparse scatter of material on the central body of a narrow upland lobe, approximately 200 meters north of Sc-265. Green's (1977:72) survey recovered only a small amount of material and pieceplotting of all cultural material yielded only 25 items randomly scattered throughout the field. Visibility was fairly good in well splashed, disced corn stubble. Green recovered one untypeable projectile point fragment, while pieceplotting recovered a Late Archaic Karnack Stemmed point. Two subsequent visits to the site recovered a large unifacial scraper, an untyped stemmed point and a small Hardin point. Only the Hardin and Karnack are plotted on Figure 4:3. Other material consisted of a mano, a biface, a chert core, other chert debris, four cobbles, cracked rocks and sandstone. The multiple component and scattered nature of the remains indicate a very ephemeral but continued use of the site area during at least the Early and Late Archaic periods.

Figures B:5g, B:9a, and B:22g (Also see Green 1977:Plate 2f)

Sc-241 (CIN #2)(Figure 4:4)

Location SE¼ Littleton 12; UTM N4458400 E706400

Size: Approximately 65 meters N/S and 75 meters E/W

Sc-241 is a small, sparsely occupied site located in the uplands. Green (1977:72) recovered only a small amount of material, while a complete pieceplotting of all cultural materials recovered only a loosely clustered group of 18 additional items. No temporal diagnostics were recovered. Green reported one pitted stone, while functional diagnostics recovered by Phase II work consisted only of a hammerstone and a mano. Other associated material consists of chert, cracked rocks, and a few pieces of sandstone.
Sc-252 (CIN #3) (Figure 4:5)

Location: SE$_{1/4}$ Littleton 12; UTM N4458425 E706650

Size: Approximately 25 meters N/S and 50 meters E/W

Sc-252 is a small sparse scatter at the west end of a very narrow upland lobe. It is quite near Sc-253, a Late Woodland site, but a hiatus in the surface distribution separates the two. Green recovered only a small amount of material; subsequent pieceplotting of all cultural material yielded only 26 items arranged in a loose scatter along the lobe crest. No temporal diagnostics were recovered. Green recovered a mano and a pitted stone while Phase II work recovered a unifacially retouched flake, six manos, and a problematic sandstone item with a hole through it (possibly drilled). Other material consisted of chert, cracked rocks, and cobbles. Distribution of this material is generally along the lobe crest with no definable clustering. No temporal affiliation can be assigned.

Sc-254 (CIN#5) (Figure 4:6)

Location: NW$_{1/4}$ Oakland 18; UTM N4458000 E707500

Size: Approximately 280 meters N/S and 350 meters E/W

Sc-254 is a large, sparse, multicomponent scatter. Green's (1977:76) characterization of a projectile point from this site as an Agate Basin has been reviewed and dropped. Four typeable points recovered during Phase II work indicate Early, Middle, and Late Archaic components as well as Late Woodland. A large number of functional diagnostics are also present indicating repeated, light, task oriented occupations throughout prehistory, with little in the way of sedentary occupation ever taking place on this site.
Figures B:3f, B:8f, B:9b, B:9f, B:19d, and B:22d (Also see Green 1977: Plates 1e and 3g)

Sc-256 (CIN 7)(Figure 4:2)
Location: SE¼ Littleton 12; UTM N4459160 E706640
Size: Approximately 20 meters N/S and 40 meters E/W

Sc-256 is a very small, light scatter on a small upland lobe end. Green (1977:76) collected only a small amount of material while Phase II pieceplotting of all cultural material yielded only 20 items, even though visibility and field conditions were excellent. The material clustered tightly but yielded no temporal diagnostics. Green recovered a chert core while later work recovered a mano and an igneous metate with a very worn, slightly concave surface. Associated material consists only of cracked rock and sandstone as well as two cobbles. No chert was recovered on this visit. The clustered distribution of the material makes it appear that Sc-256 is the result of a single limited occupation. The sole activity indicated is grinding (of plant materials?) with the remainder of material probably representing hearth rock, since neither of the cobbles have pitted or hammered surfaces. The single piece of chert present may well have been a core tool. The site can be assigned confidently as a foodstuff processing site representing perhaps only a single use-incident or a limited number of similarly related uses. No temporal affiliation can be assigned.

Sc-258 (CIN 9)(Figure 4:7)
Location: NE¼ Littleton 13; UTM N4457850 E707050
Size: Approximately 115 meters N/S and 155 meters E/W
Figure 4:7 Site Map for Sc-258
Sc-258 is a very light scatter of material at the head of two upland ravine ends. Green (1977:76) collected only a pitted mano while pieceplotting of all cultural material yielded 60 items. Aside from the pitted mano collected during the original survey, no temporal or functional diagnostics were recovered during pieceplotting. Other material consisted predominately of cracked rocks with lesser amounts of sandstone and chert and a single unmodified cobble. A revisit to this site in spring of 1982 recovered a crude biface, an untypeable point tip and the base of a Middle to Late Archaic Hill-like point.

Figure B:7a

Sc-259 (CIN #10) (Figure 4:8)
Location: NW¼ Oakland 18; UTM N4457650 E707370
Size: Approximately 110 meters N/S and 75 meters E/W

Sc-259 is located on a narrow upland lobe near the head of a large ravine. Part of the site is in a cultivated field while the remainder is on the overgrown lobe end (see Sc-259 South in Chapter 3). Green's (1977: 76-77) survey recovered one chert core and four flakes while a pieceplotting of all cultural material recovered 71 items loosely clustered towards the overgrown end of the lobe. No temporal diagnostics were recovered from these two visits. A subsequent visit recovered an Ansell point and two biface fragments. Green's chert core, one chert hammerstone, and three manos comprise other functional diagnostics at the site. Non-diagnostic material consists of equal amounts of chert debris and cracked rock with a lesser amount of sandstone. Since part of the site is obscured, no distributional remarks are advisable. A Late Woodland affiliation is assigned.
Figure B:17a

Sc-260 (CIN #11)(Figure 4:3)

Location: NW¼ Oakland 18; UTM N4457475 E707260

Size: Approximately 90 meters N/S and 80 meters E/W

Sc-260 consists of very sparse and scattered material on the body of an upland lobe. Green (1977:77) recovered only two chert flakes here, while pieceplotting of all cultural material recovered 46 items. A projectile point base identifiable as a probable Middle to early Late Archaic side-notched form is the only temporal indicator while a chert core remnant, a pitted mano, a hammerstone, and an untypeable projectile point or knife fragment are the functional indicators present. Other material consists mostly of cracked rock with a lesser amount of sandstone, six chert flakes, and two unmodified cobbles. The highly scattered and sparse nature of the site indicates that it was not host to concentrated or frequent occupation. At least a generalized Middle to Late Archaic affiliation can be assigned.

Figure B:8a

Sc-261 (CIN #13)(Figure 4:8)

Location: NW¼ Oakland 18; UTM N4457575 E707525

Size: Approximately 210 meters N/S and 50 meters E/W

Sc-261 is a long, narrow, light scatter along the crest of a slight upland ridge parallel to a large ravine. Green (1977:77) collected several tools from this site, while pieceplotting of all cultural material recovered 73 items thinly scattered along this low ridge. No temporal diagnostics
were recovered. Green recovered one end scraper, two chert cores, and a single pitted stone, while functional diagnostics recovered by Phase II work consists of one chert hammerstone, one cobble hammerstone, and three manos. Other material consisted mostly of cracked rock with lesser amounts of chert debris, sandstone, and a few unmodified cobbles. No temporal affiliation can be assigned to this ephemeral occupation.

**Sc-269 (Sugar Creek Bluffs-I) (Figure 4:9)**

Location: SW½ Littleton 12; UTM N4458675 E705575

Size: Approximately 85 meters N/S and 105 meters E/W

Sc-269 is a light scatter contained almost wholly within a cultivated field on the main body of an upland lobe. (A bulldozer transect off a small southwestern lobe contained a single cobble/mano, but apparently the site does not extend significantly outside the field edge.) Green (1977:79) collected a number of tools and other debris from this site. A pieceplotting of all cultural material yielded 53 items in sparse, linear scatter. No temporal diagnostics were recovered. Functional indicators present consist of two bifaces, an endscraper, two cores, two hammerstones and four manos. Other material consists mostly of cracked rocks with lesser amounts of chert and sandstone. Given the several functions indicated and the generally sparse but coherent scatter, it seems likely that Sc-269 was host only to a limited occupation, perhaps only a single episode. No temporal affiliation can be assigned to this occupation.

**Sc-270 (Sugar Creek Bluffs-C) (Figure 4:10)**

Location: NW¼ Littleton 12; UTM N4458900 E705900

Size: Approximately 360 meters NNW/SSE and 65 meters WNW/ESE
Figure 4:10  Site Map for Sc-270
Sc-270 consists of a large, long, and diffuse scatter on a narrow upland lobe. Green (1977:79), noted a distinct concentration at the southeast end of the site. He recovered a large collection including a Thebes (Early Archaic) point from just northwest of this concentration, although re-examination of the LaMoine River chert, parallel-flaked artifact previously classified as an Agate Basin has concluded that it is not typeable. A pieceplotting of all cultural material yielded 193 items; clearly showing the southeastern concentration with a general light scatter for the rest of the site. A number of temporal diagnostics were recovered from Sc-270 in addition to the Thebes point. A probable Agate Basin (Early Archaic) point was recovered from within the southeastern concentration and a Hardin (Early Archaic) point was recovered to the southeast of this. Further north was a Neuberger (Early Archaic) point and towards the lobe end were an untyped Archaic point and a large, side-notched, Late Woodland arrowpoint. Functional diagnostics consist of four chert cores, three hammerstones, and a pitted mano/hammerstone collected by Green and a chert biface fragment, a chert core, nine manos, five metates, a scraper and several casual unifacial chert tools. Other debris consists of similar amounts of cracked rock, chert, and sandstone. Although evidence of temporal affiliation is generally Early Archaic, five different cultural manifestations are in evidence (Agate Basin, Kirk [Neuberger], Thebes, Hardin, and Late Woodland). The Late Woodland point is atypical in its size and does not appear to be associated with any special cluster of material. Based on this, there probably are not any Late Woodland features on this site; the point rather being a coincidental loss. The preponderance of projectile points and grinding stones and the generally sparse surface scatter make it likely that
this site is a generalized procurement and hunting location rather than a camp site.

Figures B:1c, B:3e, B:5c, B:13f and B:19l (Also see Green 1977:
Plates if and 1r)

**Sc-271 Sugar Creek Bluffs-F** (Figure 4:11)

**Location:** SW¼ Littleton 12; UTM N4459750 E706100

**Size:** Approximately 90 meters by 90 meters

Sc-271 is located on a small upland lobe between the heads of two ravines at the edge of the uplands. Green made a fairly large collection from the site, noting a main scatter in the southeast (towards the uplands) and a light scatter containing two projectile points to the northwest. PiecеТplotting of all cultural material recovered only 35 items, however, the scatter to the southeast was not relocated (perhaps due to heavy corn stubble cover). No further temporal diagnostics were recovered and a re-examination of the two points recovered by Green (1977:Plates 12n and 12o) has reassigned them as Middle to Late Archaic rather than Late Woodland. Functional diagnostics consist of two chert bifaces, eight cores or core fragments, and one battered chert nodule recovered by Green and three manos from the piecеТplotting. Although the two Middle to Late Archaic points were recovered, they both were from the northwest portion and cannot be definitely assured to represent the whole site.

**Sc-274 (Sugar Creek Bluffs-J)**

**Location:** SW¼ Littleton 12; UTM N4458610 E705565

**Size:** Approximately 40 meters N/S and 45 meters E/W
Figure 4:11 Site Map for Sc-271
Sc-274 is a very sparse scatter of material on a small lobe at the edge of the uplands. Green (1977:80 and Plate 20) recovered a Table Rock (Middle to Late Archaic) point, a chert biface, two metates, a chert flake, a cracked rock and broken chert cobble. The first Phase II visit to this site under fairly good conditions recovered no materials. A second visit after the field had been worked and rained on yielded only two chert flakes, which were collected without pieceplotting.

Sc-275 (Sugar Creek Bluffs-I) (Figure 4:12)

Location: SW¼ Littleton 12; UTM N4458520 E705575

Size: Approximately 15 meters N/S and 20 meters E/W

Sc-275 is on level ground just off of a small lobe above two small ravines. Green (1977:81) collected a fairly large amount of material from this site but pieceplotting in disced corn stubble yielded only 16 items in several small loose clusters. The projectile point recovered by Green was found at the approximate location of the central "cluster." Although this point was tentatively assigned a Late Woodland status, a re-examination has reassigned it as a probable Late Archaic (Riverton) stemmed micropoint. A very similar stemmed micropoint was recovered during pieceplotting on the eastern part of the site. A bulldozed transect on the overgrown lobe west of the cultivated part of Sc-275 revealed an extension of the site (see Sc-275 West in Chapter 3) a short distance out of the field. Functional diagnostic material consists of one chert biface, four chert cores, one end-scraper, one mano/hammerstone, and one battered cobble. Other associated material consisted predominantly of chert with a few cracked rocks and one piece of sandstone. It seems likely that most of the material on Sc-275
derives from a Late Archaic occupation. The high proportion of chert
debri s compared to rough stone may indicate an ephemeral (hunting) camp
function as opposed to a base camp occupation.

Figure B:12e (Also see Green 1977:Plate 12p)

Sc-277 (Sugar Creek Bluffs-N)(Figure 4:13)

Location: SW¼ Littleton 12; UTM N4458600 E705950

Size: Approximately 75 meters N/S and 65 meters E/W

Sc-277 is situated on a small lobe near the head of a ravine. Green
(1977:81) made a medium sized collection from this site, noting that material
was concentrated near the field edge. Pieceplotting of all cultural material
yielded 42 items in a fairly compact, well defined scatter near the
northwestern field edge. A Dalton (Early Archaic) point was found in the
northern part of this scatter. Functional diagnostics consist of one
biface fragment, two pitted stones, one possible mano, two possible
hammerstones, and two chert cores collected by Green, and a chert biface
(point fragment) and three manos from pieceplotting. Other material consists
of approximately equal amounts of chert, cracked rock and sandstone. It
cannot be assured that all of this material was deposited as a result of
the Early Archaic occupation, although a general lack of material outside
the clearly defined locus tends to reinforce this.

Figure B:1a
**Sc-278 (Sugar Creek Bluffs-K) (Figure 4:8)**

Location: SW 1/4 Littleton 12; UTM N4458675 E705800

Size: Approximately 100 meters N/S and 70 meters E/W

Sc-278 is situated on an upland lobe between two ravines. Green (1977:82 and Plates 1n and 12c) collected two projectile points and a fairly large amount of other material from this site. Piecemap of all cultural material yielded only 34 items arranged in roughly two general clusters. Although no temporal diagnostics were recovered during Phase II work, the approximate location of the two points recovered by Green have been transferred from aerial photos and each one appears to correspond with one of the scatters. A bulldozer transect on the overgrown lobe end to the north indicates that the site does not continue out of the field. The point associated with the southern cluster appears to be the blade of a Dovetail/St. Charles (Early Archaic) point. The other point is an early Late Woodland Steuben point. The functional diagnostics from the site consist of two chert bifaces and two hammerstones. Other material consists of roughly equal numbers of chert debris, cracked rock, and sandstone with a few unmodified cobbles.

**Sc-285 (LN-2) (Figure 4:14)**

Location: NW 1/4 Littleton 13; UTM N4457250 E706050

Size: Approximately 190 meters N/S and 170 meters E/W

Sc-285 is a fairly large site at the edge of the upland between the heads of two small draws. Green (1977:84) recovered a medium sized collection of material dominated by rough stone. A piecemap of all cultural
material yielded 108 items distributed over a large area. A bulldozer transect on the overgrown lobe end north of the site yielded a few items on the tip of this apparently minimally disturbed part of the site. (See Sc-285 North, Section III). No temporal diagnostics were recovered from the pieceplot visit although a Table Rock point was recovered in the spring of 1982. Functional diagnostics are limited to one chert biface, one scraper, three manos, and one piece of sandstone with an abraded surface. Other associated material conforms to the predominance of cracked rock reflected in Green's collection with lesser amounts of chert and sandstone. At least a Middle to Late Archaic affiliation can be assigned.

Figure B:9e

Sc-313 (Foster #1) (Figure 4:15)

Location: SE¼ Littleton 12; UTM N4458180 E706850

Size: Approximately 45 meters N/S and 35 meters E/W

Sc-313 is a small, concentrated scatter of material on a small lobe on the upland edge. Green (1977:90 and Plates 2h and 21) recovered two projectile points and a small amount of material while pieceplotting of all cultural material yielded 36 items in a tight cluster. No further temporal diagnostics were recovered during the pieceplotting, but a corner-notched Archaic (Riverton) point was recovered on a subsequent visit. Functional diagnostics consist of one large chert biface, one chert core, one battered stone, and one mano. Other material consists of cracked rock, chert and sandstone. The restricted distribution of this material makes it very likely that this site is the result of a single short term occupation. Both projectile points
Figure 4.15 Site Map for Sc-313
reported by Green are side-notched forms which date from the Middle or Late Archaic and the corner-notched point is Late Archaic also.

Figure B:12d

Sc-314 (Foster #2)(Figure 4:16)

Location: SE¼ Littleton 12; UTM N4458380 E706940

Size: Approximately 40 meters N/S and 30 meters E/W

Sc-314 is located on a small lobe above a deep ravine. Green (1977:91) collected four chert flakes and one possible hammerstone from this site. A pieceplot of all cultural materials recovered 61 items in a very tight cluster at the center of the lobe. No temporal diagnostics were found during pieceplotting or on a subsequent visit in spring of 1982. Functional diagnostics consist of two hammerstones, two manos, and two spokeshaves. A small, 2 meter concentration of 15 items was noted in the center of the tight scatter. Although no affiliation can be assigned, the predominance of cracked rock and the distribution make it seem likely that the site is a result of a single occupational episode or repeated very similar occupations.

Sc-318 (Apple 1)(Figure 4:17--318A)(Figure 4:18--318B)

Location: 318A--SW¼ Littleton 12; UTM N4458050 E706250

318B--SW¼ Littleton 12; UTM N4458010 E705910

Size: 318A--Approximately 105 meters N/S and 140 meters E/W

318B--Approximately 80 meters N/S and 90 meters E/W

This site is on the upland edge. It consists of two distinct scatters. One is further on the level upland (Sc-318A) and the other is further west near a dissected area (Sc-318B). The western scatter (Sc-318B) was not
Figure 4:16  Site Map for Sc-314
Figure 4.17  Site Map for Sc-318A
Figure 4:18 Site Map for Sc-318B
noted by Green (1977:92). It contained 77 of the 163 pieceplots from Sc-318 including two Hardin Barbed projectile points. The eastern scatter (Sc-318A) had no temporal diagnostics recovered by either pieceplotting or the initial survey. Functional diagnostics consisted of a large unifacially retouched flake, one hammerstone, and one mano. Other material in both clusters consisted mainly of chert and cracked rocks. A revisit to Sc-318B in spring 1982 recovered an untypeable Early Archaic point tip. An Early Archaic affiliation can be assigned to Sc-318B, but cannot be assigned to Sc-318A.

Figure B:5a and b

Sc-320 (LN-5)(Figure 4:19)

Location: NW 1/4 Littleton 13; UTM N4457350 E705960

Size: Approximately 55 meters N/S and 95 meters E/W

Sc-320 is situated at the upland edge over two small gullies. A small light scatter was present near the border to the presently unplowed part of the site (Sc-320 North, see Chapter 5). On the initial Phase II visit only 13 items were present, including a pitted mano. Since so little material and no temporal diagnostics were present, no pieceplot mapping was done. A revisit in the spring of 1982 revealed more material, including an untypeable projectile point fragment. A total of 70 items make up this scatter which extends only slightly onto the uncultivated lobe to the north (see Sc-320 North, Chapter 5). Functional diagnostics consist of one hammerstone, one hammerstone or mano, one pitted and one regular mano.

Figure B:13e

202
Figure 4.19  Site Map for Sc-320
Sc-335 (Martin 2)
Location: NW½ Littleton 13; UTM N4457650 E705920
Size: Approximately 60 meters by 60 meters

Two intensive visits to this site under good and excellent conditions respectively failed to relocate the small concentration of material noted by Green (1977:96). On each visit, only a very few items were noted for this entire cultivated lobe end, so no piecplotting was carried out.

Sc-349 (Beam)
Location: NE¼ Littleton 12; UTM N4459000 E706375
Size: Approximately 135 meters N/S and 75 meters E/W

Green (1977:101) states that Sc-349 is located at the edge of the dissected uplands. He reported that a quantity of rough rocks were present on the site, but that no diagnostics were collected. This site was in winter wheat and then stubble with little or no visibility for the entire period of the study. A survey of the site in spring of 1982 while it was still covered with disced up wheat stubble managed to recover a Nebo Hill point and a possible Neuberger point, but no other material at all was seen. As of the writing of this report, the site has just been cultivated and will be visited in the near future.

Figures 3:3a and B:11b

Sc-361 (LN-58)(Figure 4:20)
Location: SE¼ Littleton 12; UTM N4458580 E706540
Size: Approximately 45 meters N/S and 70 meters E/W
Figure 4:20  Site Map for Sc-361
Sc-361 is an extremely dense, tightly clustered site on a small upland lobe. Although Green's (1977:101) initial survey noted only a rough stone, a pieceplotting of all cultural materials revealed 88 items in a tight circular cluster. This material consisted of chert flakes, cracked rocks, and sandstone. No temporal diagnostics were recovered, however. Surficially, this cluster closely resembles the clusters found on Late Woodland sites, which it well may be, but a second and third visit to the site the following spring still recovered no temporal diagnostics. Functional diagnostics recovered include six hammerstones, one mano, two unifacially retouched flakes, and one core remnant. Although no cultural affiliation can yet be assigned, the heavy material density and the location indicate that this site may yet yield evidence of Late Woodland occupation and subsurface features.

**Find Spot** (Lot 82-1448)

Location: NW¼ Littleton 13; 100 meters south of the east end of Sc-530

A single untyped projectile point was found while crossing a field. No associated material scatter was present nor was the artifact close enough to any defined site to be incorporated in it.

Figure B:13h
5.0 SITES DROPPED FROM CONSIDERATION DURING TESTING (SECTION V)

5.1 Discussion

In Section V are those sites (11) or partial sites (14) which have not met criteria designed to indicate the presence or likelihood of intact subsurface deposits and which are not likely to yield significant information via the multiple collection technique. The information bearing potential of these sites is impaired due to a very low density of materials. Also, the entire depth of the archaeological deposits can be assumed to be encompassed in the plowed level on such sites. Information regarding period, function, and internal site structuring in such sites (if attainable at all) would be available only through work carried out on their plowed surfaces, but site density and economy make an adequate information return on these sites unlikely. Descriptions of each are given below.

5.2 Site Descriptions

Sc-237 West

Sc-237 West consists of several items found on a bulldozed path immediately outside the field edge west of Sc-237. Since Sc-237 apparently does not extend any distance into the wooded lobe and several of the items are large enough to have been carried or thrown to the fence by farmers, this scatter of cultural material has been dropped from consideration.

Sc-238 West

Sc-238 West consists of a light scatter of material noted in a field road west of Sc-238. Since the scatter is light and unclustered, there would be no point in further consideration for this partial site.
Sc-254 North 1, 2, 3

These three site extensions consist of two or three items each located on bulldozed transects along each of the three overgrown lobes northeast of Sc-254. This very low density requires no further consideration be given to these sites.

Sc-265 West

Sc-265 West consists of a few items noted in a bulldozed field road and largely exposed wooded upland lobe to the west of Sc-265. The lobe had been used as a base for logging operations, resulting in high visibility for any debris present. Very low debris density plus site damage due to bulldozing and erosion in the field road allow that no further consideration is required for this area.

Sc-267 East, 348 East and 348 Northwest

These three site extensions exhibited only a very few items on bulldozer paths or lobe ends off of the respective portions of this large cluster of Late Woodland sites (see Chapter 3). Only the lobe end northward off of Sc-348 contained material enough to merit continued consideration.

Sc-269 West

Sc-269 West consists of a single cobble/mano just inside the entrance to a bulldozed path off an overgrown lobe west of Sc-269. No further consideration is warranted.
Sc-320 North

Sc-320 North consists of a total of only seven items in approximately 340 meters of bulldozed trench on the overgrown lobe end northward off of Sc-320. Due to this sparseness, this portion of the site does not warrant further consideration.

Sc-435 North

Sc-435 North consists of only three items upon a bulldozer trench on an overgrown lobe end north of Sc-435. No further consideration is warranted.

Sc-436 East

Sc-436 East consists of about nine items scattered along a bulldozer transect and adjacent disturbed area east of Sc-436 on the body of a large overgrown lobe. No further consideration is necessary for this portion of the site.

Sc-478 South

Sc-478 South consists of only two cracked rocks and one Steuben point base (Figure B: 15d) found after fairly extensive bulldozing on the lobe end south of Sc-478. Although the Steuben point base was present, it was near the field edge boundary and the lobe end exhibits a large degree of disruption due to an historic occupation. Foundation blocks and several pieces of heavily rusted machinery were located on this small lobe end. No further consideration should be necessary for this portion of Sc-478.
Sc-542 (Homestead 5)

Bulldozer survey and pieceplotting of cultural material on this broad upland lobe revealed the presence of 13 items within 75 meters of trench, indicating a moderately dense scatter. This area is presently an open pasture. It has been plowed minimally, probably prior to mechanized agriculture. A 9-12 cm deep plowzone is present. A crude biface was recovered; other materials include six cracked rocks and six chert flakes. A low artifact density precludes further consideration.

Sc-343 (Tick)

Bulldozer survey and pieceplotting of cultural material on this broad upland lobe revealed the presence of six items clustered within 30 meters of trench with a seventh item located 35 meters away. This area is presently open pasture. It has been plowed only minimally, perhaps prior to mechanized agriculture. A 9-12 cm humic zone or possible plowzone is present. A knife or projectile point tip was recovered. Four pieces of sandstone and two cracked rocks were also present.

Sc-544 (Osage Orange)

This site consists of only one chert flake and one mano on a bulldozed transect on a small, overgrown upland lobe. This site warrants no further consideration.
Sc-545 (Tangle)

This site consists of one cracked rock and one chert flake on a bulldozed transect along an overgrown upland lobe and warrants no further consideration.

Sc-546 (Sparse)

This site consists of a very few items on a small upland lobe extension and warrants no further consideration.

Sc-563 (Locust)

This site consists of two flakes along a bulldozer transect at the north edge of an overgrown upland lobe. Although the lobe probably should have been more intensively investigated, the small amount of material present probably indicates no further consideration is needed for this site.

Sc-564 (Teakettle)

This site consists of six items (four chert flakes and two cracked rocks) in approximately 150 meters of two bulldozer transects on a large upland lobe. There is no indication that this site is worthy of further consideration.

Sc-565 (Sarsaparilla)

This site consists of two cracked rocks and one chert flake on bulldozer transects on a small overgrown upland lobe. This site warrants no further consideration.
**Sc-566 (Drill Rig)**

This site consists of two pieces of chert on a bulldozer transect on this long, very narrow, overgrown ridge top. This site warrants no further consideration.

**Sc-567 (Solution)**

This site consists of nine items, but spread over a very large portion of the body of a large overgrown upland lobe. This extreme sparseness indicates that the site warrants no further consideration.

**Sc-568 (Fatigue)**

This site consists of two cracked rocks in a short section of bulldozer trench midway along an overgrown upland ridge and apparently warrants no further consideration.