



1978

4-Archaeological Survey to Determine Prehistoric Settlement Patterns in Allegan County, Michigan: 1978 Field Season

Elizabeth B. Garland
Western Michigan University

Robert G. Kingsley
Western Michigan University

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Archaeological Survey to Determine Prehistoric
Settlement Patterns in Allegan County, Michigan:
1978 Field Season

Report prepared by:
Elizabeth B. Garland,
and Robert G. Kingsley

Department of Anthropology
Western Michigan University
Kalamazoo, Michigan

Report submitted to:
Michigan History Division
Department of State
Lansing, Michigan

Acknowledgements

This project has been funded through a grant from the United States Department of Interior, National Park Service, under the provisions of the National Historic Preservation Act of 1966, through the Michigan History Division, Michigan Department of State.

The quantity - and the quality - of the archaeological data recovered in the course of the 1978 field season must be attributed in full measure to the outstanding efforts of the survey staff, Robert Kingsley and Deborah Rhead, field supervisors; and Kevin Kincare, John Nass, Lynn Skinner, and James Wojtala, field assistants. Their dedication to the objectives of the project, which frequently meant working under very difficult field conditions, resulted in an average of better than 90% on-ground coverage of the quarter sections selected for survey.

John Nass identified artifacts from the historic sites, and Deborah Rhead provided assistance in numerous ways in the course of report preparation. The assistance of both is gratefully acknowledged.

Elizabeth B. Garland, Ph.D
Project Director

February, 1979

Abstract

The 1978 Settlement Pattern Survey (SPS 78) in Allegan County, Michigan, a total of 242 sites were recorded, which could be further defined as 260 components. 243 of these components are prehistoric; 17 are historic. Of the 243 prehistoric components identified, 139 (57%) are of undetermined cultural affiliation, while 104 (43%) can be placed in cultural/chronological context. This report details the locations, environmental settings, and materials recovered from these sites, and an evaluation of the significance of these data is presented.

Contents

	Page
Abstract	i
Section 1. Previous Research in the Area; Environmental Setting; The Survey Project	1
Section 2. Field and Laboratory Techniques Employed	7
Section 3. Description and Evaluation of Sites Recorded	9
1. Prehistoric sites within the randomly sampled units	12
2. Historic sites within the randomly sampled units	33
3. Sites located outside randomly sampled units	34
Section 4. Catalog of Artifacts Recovered	37
1. Prehistoric sites - In (SPS)	37
2. Prehistoric sites - Out (SPSO)	45
3. Historic sites - (SPSH)	47
Section 5. Maps Showing Locations of All Sites in Survey Area	48
Section 6. Interpretations and Conclusions; Site Densities and Associations; Computer Analysis	59
Section 7. Assessment of National Register Status of Sites in the Survey Area	76
Section 8. Recommendations for Further Research and Management of Cultural Resources	81
References	83

List of Illustrations

	Page
Map A Allegan County in relation to the Kalamazoo Lower and Middle Kalamazoo River Drainage	4
Map 1 Location of Sampling Strata and Sampling Units; 1978 Season	10
2 Laketown Township; sites within sampling unit	49
3 Fillmore Township; sites within sampling unit	50
4 Saugatuck Township; sites within sampling unit	51
5 Manlius Township; sites within sampling unit	52
6 Ganges Township; sites within sampling unit	53
7 Laketown Township; sites outside sampling unit	54
8 Fillmore Township; sites outside sampling unit	55
9 Saugatuck Township; sites outside sampling unit	56
10 Manlius Township; sites outside sampling unit	57
11 Ganges Township; sites outside sampling unit	58
12 Locations of All Known Woodland and Archaic Period Sites in Survey Area in Relation to Water Associations and Soil Types	63
13 Locations of All Known Woodland and Archaic Period Sites in Survey Area in Relation to Surface Geology	69
14 Saugatuck Twp., Sec. 22, NE $\frac{1}{4}$; Site Distributions	70
15 Saugatuck Twp., Sec. 22, NW $\frac{1}{4}$ of NE $\frac{1}{4}$; Detail of Map 14	71
16 Saugatuck Twp., Sec. 1, NE $\frac{1}{4}$; Site Distributions	72
17 Ganges Twp., Sec. 4, South $\frac{1}{2}$; Site Distributions	73
18 The Great Big Site (SPS-126)-Sketch Map Showing Controlled Surface Collection Areas	74
19 Map of proposed Archaeological District on the Lower Kalamazoo	80
Table 1 Description of Soil Types Shown on Map 12	64

Fig. 1 Bifurcate base points found during the 1978 survey

Fig. 2 Paleo-Indian points found during the 1978 survey

(after page 61)

1. Previous Research in the Area; Environmental Setting; the Survey Project

This project was conceived in order to discover sites which could provide a framework for reconstruction of the cultural/historical record and prehistoric patterns of settlement in the Lower Kalamazoo Basin. One of us (Garland) has been involved in this endeavor intermittently since the mid 1960's, and the other (Kingsley) has been working closely with Woodland period prehistory in the Lower Kalamazoo since 1975 (see references).

Initial archaeological efforts in Allegan County go back to the mid 1960's when a number of sites were identified and tested by Garland with the assistance of members of the newly formed Kalamazoo Valley Chapter of the Michigan Archaeological Society. At that time we were working largely with Allegan County site information compiled by Hinsdale and incorporated in the University of Michigan site files. Site relocation proved to be difficult in most cases, but certain sites were relocated, notably in the area just west of New Richmond, where 20 AE 13, named by us the Nordhof site, was found and test excavated. The Holland Rendering Works lies to the east of Nordhof, in Sec. 18 of Manlius Twp., and this property was at that time not accessible to survey. In 1973 we were able to photograph the collection of John Kleis who operates the Rendering Works, and who collects regularly from the sites on this property. In 1976, permission to walk this property was again denied to a WMU survey team. In 1978, however, we were more fortunate; Mr. Kleis cooperated with our survey and we were able to surface collect and record 3 Kleis sites which fell in our sampling units (SPS 78 108, 109, 120) and 7 Kleis sites outside of our units (SPSO 78 1 through 7). Recording these "out" sites is an important addition to the large amount

of data recorded from within our sampling units along the Lower Kalamazoo from New Richmond to Saugatuck, a region which we have long recognized as the most densely occupied portion of the river valley.

Previously recorded sites in the randomly sampled units are so indicated in the site descriptions. Previously recorded sites in the survey area which lie outside of our randomly sampled units are located on maps 7-12. In the site descriptions sites are identified by SPS (Settlement Pattern Survey)-78 (year of survey)-followed by survey number. SPSH refers to historic sites, SPSO to sites outside of the randomly sampled units.

Our knowledge of archaeological sites in the survey area prior to this field season derives from the following previous work:

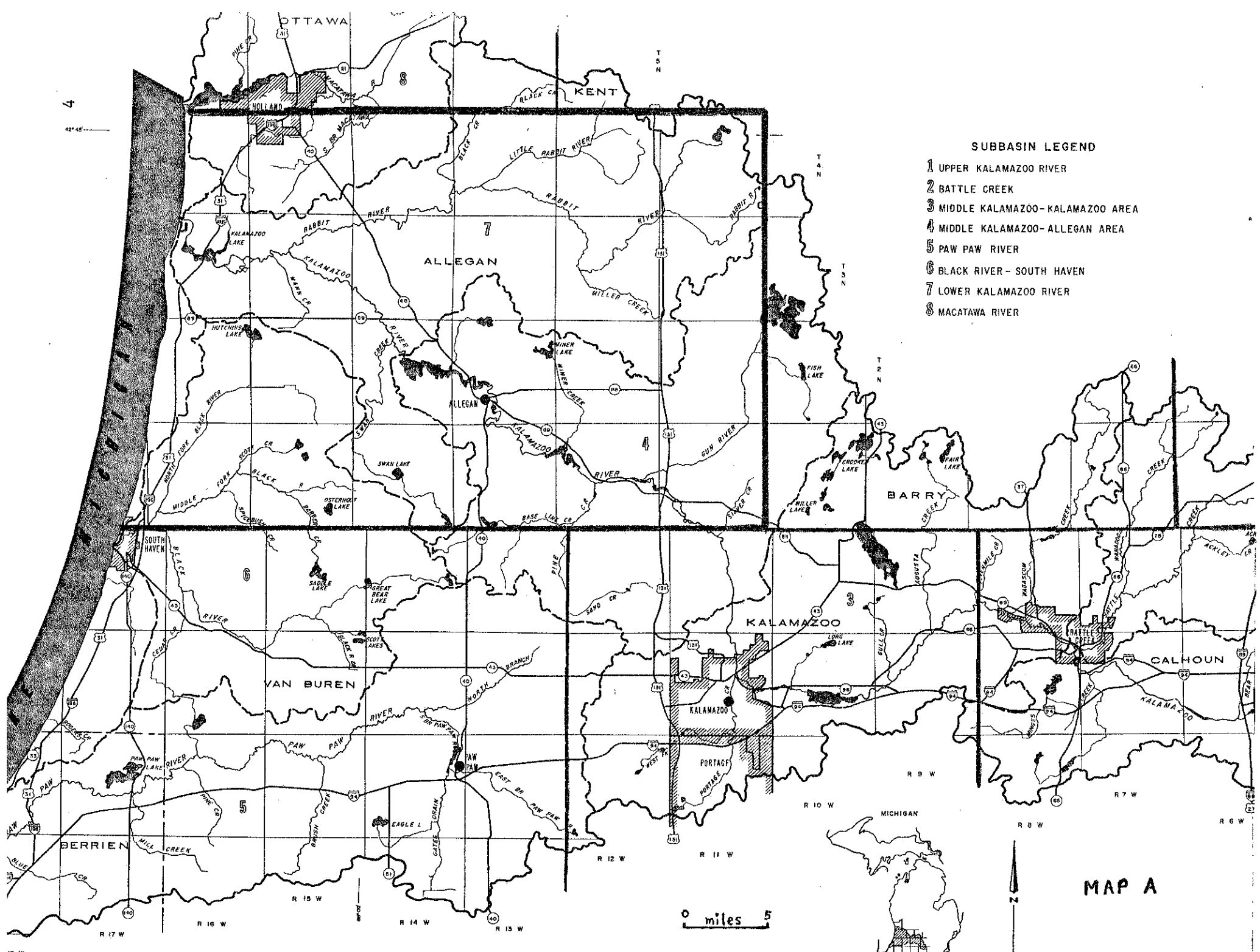
- 1) Compilation by Hinsdale of 18 sites in the 5 townships under study in 1978.
- 2) Test excavation by Garland of several sites (AE 65, AE 13, AE 70 AE 77, AE 617).
- 3) Intensive site excavation by Garland of AE 78 (Hacklander) and AE 18 (Fennville).
- 4) Surface collection by Garland of AE 466.
- 5) Recording during a 1973 site (informant) survey by Garland of 19 new sites and/or collections from sites in the survey area.
- 6) Recording of 24 new sites in Manlius and Saugatuck Twps. in a survey directed by William Cremin. (KBS 1976)
- 7) Excavation of AE 127 (Schwerdt) by William Cremin.
- 8) Two sites (AE 149, AE 191) recorded by William Cremin's 1979 KBS survey.

The environmental setting of the 1978 survey area, and of Allegan County and the Lower Kalamazoo drainage generally, is one of marked environmental diversity. Soil Conservation Service personnel in Allegan have remarked to us that within southern Lower Michigan Allegan County is characterized by a remarkably diversified mosaic of soil types. In view of this, and because of the fact that an intensive soil survey of Allegan County such as that completed for Ottawa County in 1972 is only now getting underway, it was decided not to attempt stratification of the survey universe by soil association. Boundaries on extant maps (Map 12) are too imprecise, and resultant stratification would be so complex as to make meaningful analysis extremely difficult. Furthermore, stream rank order seemed to us to be not a particularly useful criterion for stratification. The Lower Kalamazoo has only one major tributary, the Rabbit River, with the Little Rabbit as a significant "third order" stream (Map A). To rank a minor tributary of, for example, Baseline Creek as "third order", and therefore in some kind of equivalent status to the Little Rabbit seemed to us not useful, and in fact obfuscating, in terms of understanding aboriginal settlement patterns. Consideration was also given to stratification based upon surficial geology landforms (Map 13) but these boundaries seemed far too generalized to be useful for our purposes.

Allegan County was chosen as the survey universe for this project not simply because it provides convenient political boundaries but because it makes sense in terms of drainage, soil types, and known site distributions. Included within the county (Map A) is the Lower Kalamazoo River, virtually the entire Rabbit-Little Rabbit River system, and several smaller southern tributaries. The sandy soils which support oak-pine forest so

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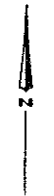


SUBBASIN LEGEND

- 1 UPPER KALAMAZOO RIVER
- 2 BATTLE CREEK
- 3 MIDDLE KALAMAZOO-KALAMAZOO AREA
- 4 MIDDLE KALAMAZOO-ALLEGAN AREA
- 5 PAW PAW RIVER
- 6 BLACK RIVER - SOUTH HAVEN
- 7 LOWER KALAMAZOO RIVER
- 8 MACATAWA RIVER

MAP A

0 miles 5



typical of interior Allegan County from New Richmond eastward have their approximate eastern and southeastern limits where Allegan County meets Barry and Kalamazoo counties. Looking at the County as a whole also affords us an opportunity to compare a portion of the smaller Black River drainage in southwest Allegan County with the major river system.

Allegan County is included within the Carolinian biotic province in Cleland's generalized map of biotic provinces in the Upper Great Lakes (1966:6). However, a southern extension of pine forest typical of the Canadian biotic zone extends down into much of the county, correlated with the sandy soils of interior Allegan County (Kenoyer 1934, Veatch 1953) making the County more transitional in terms of vegetation patterns rather than typical of the Carolinian province. In the 1978 survey area, beech-maple forests are characteristic north and south of the Kalamazoo River Valley in Laketown, Saugautuck, and Ganges townships, with hemlock also present along the Lake Michigan shore line. Low-lying muck soils are present in SE Ganges Twp. Oak-pine is the typical forest cover on soil type 3 (Map 12) in Manlius Township, the western edge of the "pine plains" noted on the USGS topographic map Fennville 15' quadrangle.

In view of these environmental complexities, and from the information available about the distribution and nature of sites in Allegan County, it seemed best to stratify by township and carry out a random sample within township units, leaving detailed soil, water, and landform associations to be determined by subsequent analysis.

A problem, of course, with this mode of sampling is that we might miss completely some particularly significant combination of variables of soil, water, landform, etc. However, we determined that a 20% sample by township, when this distribution was actually laid out on maps before us,

appeared to adequately sample every kind of locational situation which we had any reason to think might be significant. This is to say that a 20% random sample stratified by township was judged by us to be adequate to elucidate prehistoric settlement patterns, given the nature sites known to exist here, and providing that sufficiently intensive survey techniques were employed.

In this endeavor it was deemed very important to carry out an intensive survey. A large region of the lower Kalamazoo drainage became a State Game Area precisely because the land was at best marginal for agriculture. Large cultivated tracts which afford ready observation in surface survey are therefore not characteristic of the region. In order to get what we regarded as adequate coverage of our sampling units we decided to employ shovel probing in areas of poor surface visibility. Cognizant of Lovis' work (1976) we recognized the additional effort and the time factor involved, but we decided that we needed as full coverage of sampling units as possible, so as to be able to state where sites are not, as well as where they are.

A further consideration in determining sampling strategy was the fact that these Allegan County sites are camp-sites. There are no "village sites" as the term is generally employed by archaeologists, or at least none have been identified to date. It follows then that ancillary special purpose localities and activity areas related to these already rather small camp sites are of a size and nature which would require very intensive site survey methods if classification and interpretation of them was to be possible.

2. Field and Laboratory Techniques

The field situation for the 1978 survey was structured so as to produce the maximum amount of field time per day. Survey personnel were housed in rented quarters near Saugautuck for the 7.5 weeks of the field season. Each week two students from the WMU archaeological field school were assigned to the survey on a rotational basis. We thus maintained two survey crews, each composed of 3 staff and 1 student, for the duration of the field school (May 1-June 21 inclusive). All staff members had had prior field experience, and field school students with the most experience were the first to be rotated into the survey. Field work was carried out at a high level of professional competence.

Standard survey procedures were as follows: if surface visibility was good, the 4 person team walked each designated sample unit spaced 25 paces apart, maintaining as straight a compass bearing as possible. At the finish of the first pass the crew was realigned at 25 pace intervals, and the procedure repeated until the unit was covered. If the surface visibility was poor (i.e., less than 50%) shovel probing was employed every 25 paces; the sod was turned with a shovel and searched for cultural material. When sites were located by shovel probing, probing was done at closer intervals of 5 to 10 paces to establish site size. When larger sites were located in areas of good surface visibility, systematic collection was done, i.e. the site was divided to segments for collection, features were noted and mapped etc. Re-collection of large sites or sites otherwise deemed important was done as time permitted. The quality of the data recovered was definitely enhanced by re-collection.

The utility of shovel probing was an important question for us both in the planning stage and during the survey. We estimate now that

approximately 5% of the sites found during the 1978 season were found by this method (could not have been discovered otherwise). Shovel probing was important in establishing site size, and it provided significant information as to where sites were not located. Both field supervisors felt strongly at the end of the season that shovel probing in this Allegan County survey was worthwhile and should be continued in future years.

The period from May 1-June 21 was devoted entirely to recovering and recording field data. Examples of the kinds of inter-and intra^{-site} mapping that was done are included in Section 6.

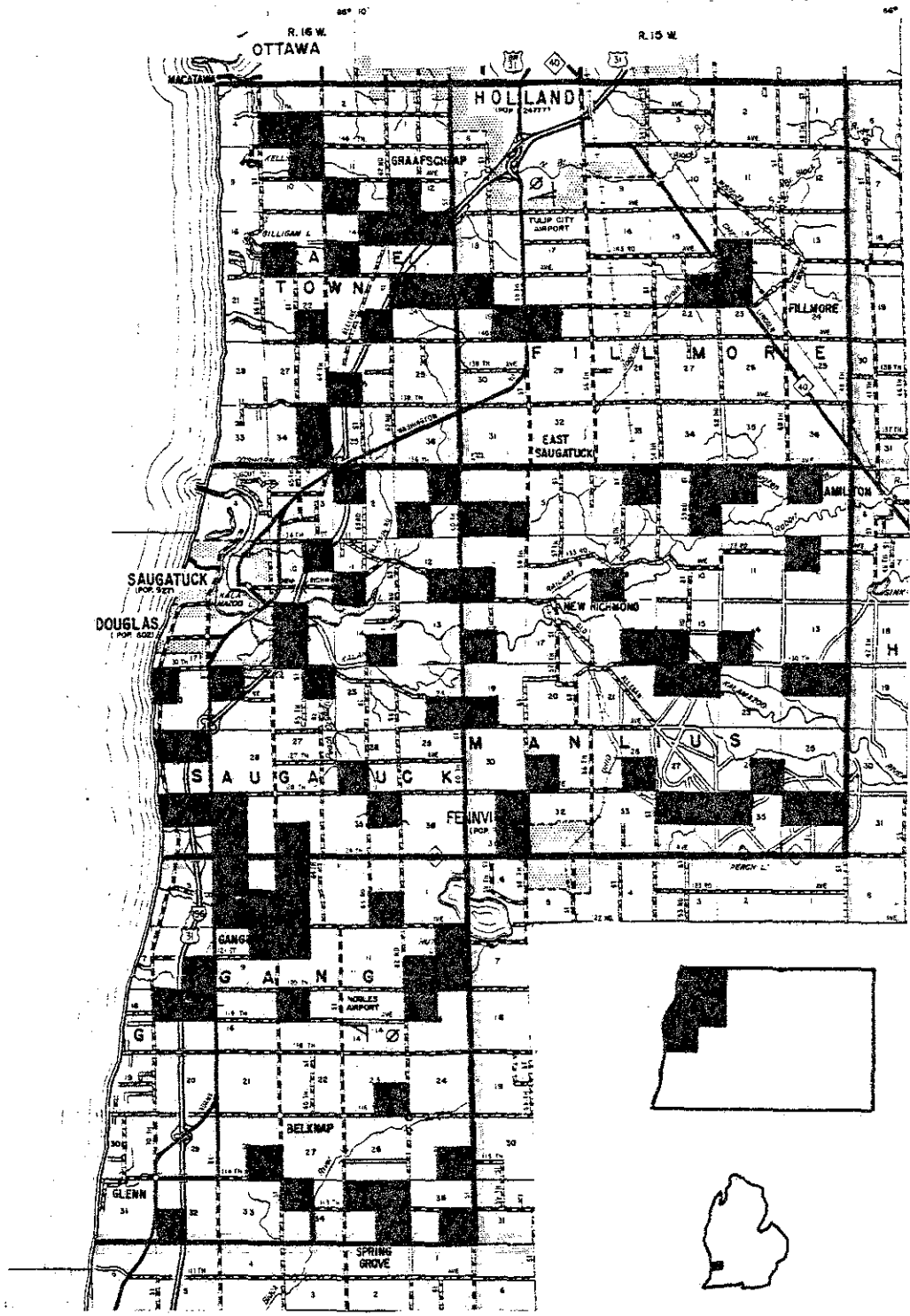
Sites were assigned SPS numbers in the field. During the summer of 1978 laboratory processing was carried out. Materials from each site were washed and catalogued and a state number was assigned to each site. At this time detailed site descriptions were prepared for each site newly discovered or revisited during the survey. Placing the state site number on artifacts recovered was done during the fall term of 1978.

Photographs of 4 collections (Vivekananda, Wollbrink, Ensfield, Woltz) were made. Six other collections were not photographed, for a variety of reasons, but existence of these collections (Fosdick, Valteau, Jager, Haverdink, Ford, Harrington) has been noted and we will attempt to record them as time permits during the 1979 season. All photographs are keyed to the site or sites from which the materials were collected. These records, along with the survey forms, ancillary maps, field notebooks and the collections of artifacts, are housed in the Department of Anthropology, Western Michigan University.

3. Description and Evaluation of Sites Recorded

The site descriptions which follow are grouped into three sections. First are the prehistoric sites within the randomly sampled units. Map 1 shows the location of townships (strata) under study in 1978, and the units (quarter sections) actually surveyed in each. Fillmore Township was not completed, largely because of absentee landlords and resultant difficulties in obtaining permission. We are attempting to resolve this problem currently by means of a mailing sent to all property owners of units we wish to survey in Fillmore Township, including a return post-card giving us permission to survey. Owner addresses were obtained from township tax records. The rate of response has been quite high, and largely favorable. In instances where permission is denied we have the option of designating an alternate unit if we find coverage of that particular quarter section would be inadequate by our standards. A great deal of field time can be saved if such problems can be solved in advance of the field season. Average coverage for all strata in 1978 was over 90% (see Section 6 for further discussion), and we would like to maintain this level of coverage in future seasons.

Following the prehistoric sites recorded in our sampling units, SPSH sites are described. These are historic sites within our survey units. Some of these sites may be of interest to historic archaeologists (see individual descriptions and catalog). John Nass informs us that some of the ceramics recovered from these sites was manufactured during the first half of the 19th century, for example the shell edge pearl ware at SPSH 78 2, and SPSH 78 3, and the sites could have been occupied in that period of time. Mr. Nass further observes that in general the glass recovered



Map 1. Laketown, Fillmore, Saugatuck, Manlius Twps., Allegan Co., locations of sampling strata, and sampling units surveyed in 1978. Fillmore Twp. was not completed.

would seem to date after 1850. These sites have been assigned survey numbers but have not been recorded in the State system.

Finally, SPSO sites are described. Some of these are sites which were found accidentally while on lunch break, or in examination of road cuts etc. Other "out" sites were intentionally investigated; the Kleis sites because of their obvious importance (see Section 1), Hemlock Point (SPSO 78 8) because it should have been there, the Campania Farm sites (SPSO 78 16, 17) because they should not be there. Ridge (SPSO 78 10) and High Bank (SPSO 78 11) were assessed for possible field school attention, but we did not in fact test these sites, or any others in the survey area, due to lack of time.

SITE DESCRIPTIONS

The following are brief descriptions of the sites located in the course of the 1978 survey. The format is: site numbers, site name, site type (Isolated find, Scatter, Component), provenience, cultural affiliation, discussion/comments, and priority status (low, medium, high) for future excavation.

Priority status is determined not simply by size or yield of site, but by the presumed ability of sites to yield information regarding prehistoric systems of settlement, cultural chronology and history, and social organization and patterning.

Citations pertaining to published artifact types will be omitted.

Site dimensions are given when these could be determined; in some cases estimation of site size was not possible.

1. SITES WITHIN THE RANDOMLY SAMPLED UNITS. New and previously known ^{prehistoric} sites are included; previously known sites are indicated.

- SPS 78 1 Veldhuis. Isolated find; SW 1/4, NE 1/4, Laketown Sec. 24;
20 AE 216 undetermined. Single bi-pitted nutting stone found in
 stabilized sand blow-out. Low priority.
- SPS 78 2 Kuipers. Scatter; NE 1/4, NW 1/4, Laketown Sec. 24; undetermined.
20 AE 397 Small scatter of chippage, unknown size. Local informant
 reports burials in general area of site; burials not found by
 crew. High priority.
- SPS 78 3 Weller. Scatter; W 1/2, center of the NE 1/4; Laketown Sec. 24;
20 AE 398 Archaic. Very large, sparse scatter, covering about 20 acres;
 maybe several activity areas. In plowed fields, on sand knolls.
 Medium priority.
- SPS 78 4 Scholten. Isolated find; NE 1/4, NW 1/4, Laketown Sec. 13; Archaic
20 AE 399 Isolated serrated-edge side-notched point, probably Archaic.
 Low priority.
- SPS 78 5 Meyering. Isolated find; NW 1/4, NW 1/4, Laketown Sec. 13; unde-
20 AE 400 termined. Single large flake found in sandy plowed field. Low
 priority.
- SPS 78 6 Bouws. Scatter; E 1/2, NE 1/4, Laketown, Sec. 13; undetermined.
20 AE 401 Small scatter of chippage, on sandy ridge; size unknown. Low
 priority.
- SPS 78 7 Oral I. Scatter; SW 1/4, SW 1/4, Laketown Sec. 14; undetermined.
20 AE 402 Small scatter of chippage, in sand blow overlooking low wet
 area; 352 m². Low priority.
- SPS 78 8 Baker. Scatter; E 1/2, SE 1/4, Laketown Sec. 22; undetermined.
20 AE 403 Sparse chippage in blown-out dunes; size unknown. Low priority.

- SPS 78 9 Van Dam. Scatter; SW 1/4, NE 1/4, Laketown Sec. 34; undetermined.
20 AE 404 Lithic scatter in blown-out dunes, about 1800 m². Medium to
 low priority.
- SPS 78 10 Vermulen. Scatter; NE 1/4, SE 1/4, Laketown Sec. 34; undetermined.
20 AE 405 Moderate size scatter of lithics, about 325 m². A few tools
 present. Medium priority.
- SPS 78 11 Oral II. Scatter; SW 1/4, SW 1/4, Laketown Sec. 14; Woodland.
20 AE 406 Twelve sherds and 4 chips in about 5000 m² blow-out. Sherd/
 chip ratio is unusual for surface sites; maybe Woodland activity
 area of some kind. Water association is upland swamp, which is
 also unusual for Woodland sites. High priority.
- SPS 78 12 Oral III. Scatter; SW 1/4, SW 1/4, Laketown Sec. 14; Archaic. One
20 AE 407 point and 7 chips with a few FCR in 600 m² blow-out. Low to
 medium priority.
- SPS 78 13 Volkers I. Scatter; SE 1/4, SW 1/4, Laketown Sec. 14; undetermined.
20 AE 408 Debitage, pitted nutting stone and mano, in about 150 m² blow-
 out, near small creek. Low to medium priority.
- SPS 78 14 Volkers II. Isolated find; SE 1/4, SW 1/4, Laketown Sec. 14,
20 AE 409 undetermined. Isolated find of mano in sand blow-out. Low
 priority.
- SPS 78 15 Teason. Component; SE 1/4, SW 1/4, Laketown Sec. 14; Archaic and
20 AE 410 Historic. Heavy scatter ofdebitage and lithic artifacts in
 sandy area; FCR and charcoal blown out in sand. Historic
 material also present; total area about 5000 m². Relatively
 heavy concentration of material compared to other sites in area;
 may be some kind of semi-permanent habitation site. High priority.
- SPS 78 16 Kirnbauer. Isolated find; NW 1/4, SW 1/4, Laketown Sec. 11; unde-
20 AE 411 termined. Three isolated chips in sandy area near swamp. Low
 priority.
- SPS 78 17 Weighmink. Scatter; SE 1/4, SW 1/4, Laketown Sec. 11; undetermined.
20 AE 412 Two chips, one uniface and one biface fragment found in wide area
 in plowed field. Low priority.
- SPS 78 18 Drooger. Isolated find; NE 1/4, NE 1/4, Laketown Sec. 10; Archaic.
20 AE 413 Single Snook-kill or Ashtabula-like point found on sand ridge
 overlooking swamp. Low priority.
- SPS 78 19 Brooks. Component; NE 1/4, NW 1/4, Laketown Sec. 10; Late Archaic.
20 AE 414 Small lithic scatter and side-notched point base, bone and FCR
 found in small area; about 3000 m². Area is at base of high
 bluff and sheltered from prevailing wind; may be winter camp.
 High priority.
- SPS 78 20 Tyink. Isolated find; SW 1/4, NE 1/4, Laketown Sec. 10; undetermined.
20 AE 415 Isolated uniface in plowed field. Low priority.
- SPS 78 21 Slager. Scatter; SE 1/4, NE 1/4, Laketown Sec. 10; undetermined.
20 AE 416 Lithic scatter in 900 m² sand blow; most of site destroyed by
 sand mining. Low priority.

- SPS 78 22
20 AE 417 Langworthy. Scatter; NE 1/4, SW 1/4, Laketown Sec. 23; Late Archaic. Chippage, cores, and one Adena-like point fragment found in large area: about 10000 m². Most of site destroyed by sand mining. Low priority.
- SPS 78 23
20 AE 418 Merlin I. Component; NE 1/4, SW 1/4, Saugatuck Sec. 1; Archaic. Heavy debitage, cores, and biface fragment found in stable soil near creek/ravine; about 4500 m². Relatively undisturbed (i.e., not blown-out) site; may be lithic activity area. High priority.
- SPS 78 24
20 AE 419 Merlin II. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 1; undetermined. Heavy FCR scatter with four chips in very small area: 150 m². Maybe isolated hearth(s) area; site is important because it is identical to several others in this area of Saugatuck Twp. (see below). Such sites need to be placed into temporal framework, since they are apparently some kind of specialized activity areas, and thus can elucidate settlement system. High priority.
- SPS 78 25
20 AE 420 Merlin III. Scatter; NE 1/4, SW 1/4, Saugatuck Sec 1; undetermined. Very heavy FCR and one chip in about 150 m² area; site is identical to SPS 78 24 (see). High priority.
- SPS 78 26
20 AE 421 Merlin IV. Component; SE 1/4, SW 1/4, Saugatuck Sec. 1; undetermined. Heavy debitage and two FCR in about 1600 m² area. Probably associated with SPS 78 23, 24, 25, and 40. Relationship of lithic components (23, 26) to FCR scatters (24, 25, 40) is of importance to elucidate settlement system. High priority.
- SPS 78 27
20 AE 422 Valleau I. Scatter; NE 1/4, NW 1/4, Saugatuck Sec. 2; Late Archaic. Debitage in blowout areas, about 30000 m² area; swamps nearby. Late Archaic temporal placement on basis of gorgets in Valleau collection from site. Medium to high priority.
- SPS 78 28
20 AE 423 Valleau II. Scatter; NE 1/4, NW 1/4, Saugatuck Sec. 2; undetermined. Six chips scattered in blowout; about 2800 m². Low priority.
- SPS 78 29
20 AE 424 Jannotta I. Scatter; NW 1/4, NW 1/4, Saugatuck Sec. 2; undetermined. Debitage scatter on sandy ridge bordered by swamp; about 5000 m². Medium priority.
- SPS 78 30
20 AE 425 Jannotta II. Scatter; NW 1/4, NW 1/4, Saugatuck Sec. 2; undetermined. Lithic scatter on sandy ridge bordering swamp, near SPS 78 29. About 250 m²; much denser than former site. Medium priority.
- SPS 78 31
20 AE 426 Jannotta III. Isolated find; NW 1/4, NW 1/4, Saugatuck Sec. 2; undetermined. Three chips found in sand ridge near SPS 78 29 and 30/ Low priority.
- SPS 78 32
20 AE 427 Valleau III. Isolated find; SE 1/4, NW 1/4, Saugatuck Sec. 2; Woodland. One core, one chip, and one sherd found in blow out. This site may be related to similar Woodland sites located off

the main river channel; may be activity area. Medium priority.

- SPS 78 33
20 AE 82
* (previously recorded)
- Brink. Component; NW 1/4, SE 1/4, Manlius Sec. 6; Late Archaic. Very heavy lithic and FCR concentration in 1-2 acre area in plowed field; evidence of fire hearths present. Site is important and unusual in that it is located on a sandy knoll (not much bigger than site itself) on predominantly clay/till soil; indicating aboriginal preference for well drained soil. Further unusual is fact that several sites of probably similar age are located off clay soil to east, about 1/4 mile. Thus this site may be special activity area of some kind. High priority.
- SPS 78 34
20 AE 428
- McNamara I. Component; NE 1/4, SW 1/4, Saugatuck Sec. 15; probably Woodland, also historic. Debitage and artifacts (no pottery) and light FCR found in 8400 m² area south of the Kalamazoo River. Kaolin pipe and notched net-sinker also found. Site has potential and should be tested. High priority.
- SPS 78 35
- McNamara II. Component; NE 1/4, SW 1/4, Saugatuck Sec. 15; Woodland. Debitage, cores, bifaces, and 5 body sherds in 1200 m² area; high density of material. Site located at junction of small stream and Kalamazoo River. High potential. High priority.
- SPS 78 36
20 AE 430
- Alexander. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 29; undetermined. Chippage in small scatter, about 1000 m²; found along sandy edge of ravine. Low priority.
- SPS 78 37
20 AE 431
- Nobody. Scatter; NW 1/4, NW 1/4, Saugatuck Sec. 15; undetermined (Woodland?) Corner-notched biface and small amount of chippage found in 200 m²; across river from SPS 78 34, 35. Kalamazoo River to the south. Probably relates to two sites mentioned. High priority.
- SPS 78 38
20 AE 432
- Saugatuck Twp. I. Scatter; NE 1/4, NW 1/4, Saugatuck Sec. 15; undetermined. Two cores and 9 chips in very small area; about 100 m². Located on high bank above Kalamazoo River; similar location to SPS 78 34, 35, 37; high site density in these units should be further investigated. High priority.
- SPS 78 39
20 AE 433
- Saugatuck Twp. II. Scatter; NW 1/4, SW 1/4, Saugatuck Sec. 15; undetermined. Smalldebitage scatter; about 1200 m². Similar to SPS 78 38. High priority.
- SPS 78 40
20 AE 434
- Merlin V. Scatter; SE 1/4, SW 1/4, Saugatuck Sec. 1; undetermined. Heavy FCR scatter in small concentration, about 7 m². May be isolated fire hearth, though much charcoal not present. Similar to SPS 78 24, 25 (see). High priority.
- SPS 78 41
20 AE 435
- Yates I. Component; SE 1/4, NE 1/4, Saugatuck Sec. 1; Late Archaic. Extremely heavydebitage, few FCR and at least 13 bifacially flaked rejects found in plowed field, about 1500-2000 m². Heavy chippage and cores are common; site appears

to be lithic tool manufacturing area. Chert type is homogeneous. Site is important in that it may be a special task area relating to general habitation sites and FCR scatters located nearby. High priority.

- SPS 78 42 Yates II. Scatter; SE 1/4, NE 1/4, Saugatuck Sec. 1; Paloo -
20 AE 436 Indian, Woodland. Small amount of debitage scattered over
very large area, perhaps 10 acres. Hi-Lo point base and
single large sherd found (within 10 meters) at edge of inter-
mittent creek. Hi-Lo point is probably isolated; should
further investigate site though to determine nature of occupa-
tions. High priority.
- SPS 78 43 Saugatuck Twp. III. Scatter; SE 1/4, SW 1/4, Saugatuck Sec. 15;
20 AE 437 undetermined. One biface and little debitage in scatter of
unknown limits; about 1000 m south of Kalamazoo River.
Medium priority.
- SPS 78 44 McNarara III. Scatter NW 1/4, SW 1/4, Saugatuck Sec. 15;
20 AE 438 Woodland. Five chips and one tiny sherd found over large
area: about 9000 m². Probably relates to other Woodland
sites in this unit. Low to medium priority.
- SPS 78 45 McNamara IV. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 15; undeter-
20 AE 439 mined. Small amount of chippage found in large area, size
unknown, but at least 5 acres. Located about 1000 m south
of Kalamazoo River. Low to medium priority.
- SPS 78 46 McNamara V. Scatter; NW 1/4, SW 1/4, Saugatuck Sec. 15; Wood-
20 AE 440 land. Debitage and one sherd in 200 m² area; found in sand
blow-outs 1500 m south of Kalamazoo River. Relates to other
Woodland sites in unit and area. Medium to high priority.
- SPS 78 47 Wolbrink I. Scatter; E 1/4, NE 1/4, Saugatuck Sec. 22; undeter-
20 AE 441 mined. Moderate lithic scatter in about 520 m² sand blow near
edge of creek/ravine. Part of high site density in unit and
area. Medium to high priority.
- SPS 78 48 Wolbrink II. Scatter; E 1/4, NE 1/4, Saugatuck Sec. 22; undeter-
20 AE 442 mined. Similar in size and nature to previous site; about 1500
m south of Kalamazoo River. Medium to high priority.
- SPS 78 49 Wolbrink III. Scatter; E 1/2, NE 1/4, Saugatuck Sec. 22; unde-
20 AE 443 termined. One core and 3 chips in wide scatter; site size not
applicable. Low priority.
- SPS 78 50 Wightman. Scatter; E 1/2, NE 1/4, Saugatuck Sec. 22; undetermined.
20 AE 444 Two unifaces and moderate chippage found on Kalamazoo River
bluff at Peach Orchard Creek junction; site size undeter-
minable due to vegetation. Site location may indicate importance
of site in elucidating subsistence-settlement system. High
priority.
- SPS 78 51 Kotman Zero. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; unde-
20 AE 445 termined. Medium FCR scatter and one chip in small area in
sand blow-out; about 100 m². May be isolated hearth; similar

to other FCR scatters in area (see SPS 78 24). Medium to high priority.

- SPS 78 52
20 AE 446 Kotman I. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Very heavy FCR scatter and one chip in nearly circular pattern in sand blow-out; about 400 m². Similar to SPS 78 51 (see) and near it. Medium to high priority.
- SPS 78 53
20 AE 447 Kotman II. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Two bifaces, one uniface, and debitage in sand blow-out; about 300 m². Site disturbed by sand mining, partly destroyed. Low priority.
- SPS 78 54
20 AE 448 Kotman III. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Small amount of debitage scattered over about 5-8 acres. Low priority.
- SPS 78 55
20 AE 449 Theo Brink I. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Heavy FCR scatter near two others (SPS 78 56, 57; see); about 100 m². These three sites may be isolated hearths; very similar to other FCR scatter sites in unit and area. These sites are indicating some sort of settlement system; need to be further investigated to determine temporal placement and function. Medium to high priority.
- SPS 78 56
20 AE 450 Theo Brink II. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; Undetermined. Identical to SPS 78 55 (see). Medium to high priority.
- SPS 78 57
20 AE 451 Theo Brink III. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Identical to SPS 78 55 (see). Medium to high priority.
- SPS 78 58
20 AE 452 Yates III. Scatter; NE 1/4, NE 1/4, Saugatuck Sec. 1; Archaic. Heavy debitage scatter, one biface, no FCR in stable soil; about 460 m². Lithic scatter site follows pattern in this area of heavy FCR/no lithics and heavy lithics/no FCR sites; site can elucidate settlement system. High priority.
- SPS 78 59
20 AE 453 Yates IV. Scatter; NE 1/4, NE 1/4, Saugatuck Sec. 1; undetermined. Ten chips found over 1-2 acres. Low priority.
- SPS 78 60
20 AE 454 Lewandowski. Scatter; SE 1/4, SE 1/4, Saugatuck Sec. 12; Woodland. Chippage and sherds found on small sandy ridge in fallow humus; 700 m². Water association is upland swamp; follows pattern of several small Woodland sites in this location in unit and area. May be task specific areas. In general, Woodland sites are not common away from the main river channels. High priority.
- SPS 78 61
20 AE 455 DeJonge I. Scatter; NE 1/4, SE 1/4, Saugatuck Sec. 12; Woodland. Site nearly identical to SPS 78 60 (see); located north of upland swamp, SPS 78 60 located to south of same swamp. High priority.
- SPS 78 62
20 AE 456 DeJonge II. Scatter; NE 1/4, SE 1/4, Saugatuck Sec. 12; Woodland. Again, nearly identical to SPS 78 60 (see) in all respects. High priority.

- SPS 78 63
20 AE 457
Jordan. Scatter; NW 1/4, SE 1/4, Saugatuck Sec. 12; Woodland. Similar to SPS 78 60, 61, 62, but found in long linear scatter along sandy ridge in fallow humus (same ridge as SPS 78 60). Site size undeterminable, but material found within 150 linear m. Probably relates to sites mentioned here. Low priority.
- SPS 78 64
20 AE 120
*(previously recorded)
Johnson. Component; NW 1/4; SE 1/4, Saugatuck Sec. 24; Paleo-Indian, Early Archaic, Late Archaic, Woodland, Historic. Very large multi-component site on bluff above riverine swamp and Kalamazoo River. Total site area covers over 20 acres; density of debris within the site area varies from light to very heavy. Site straddles quarter section boundary line, so part of site in the sampling unit and part is out. All of site is plowed. Bifaces, unifaces, drills, wedges, cores all plentiful (see catalogue). Clovis point found in area out of universe. Site is very important in establishing artifact typologies (mostly Archaic) and in determining settlement system. Late Archaic component very similar to other such sites on Kalamazoo and Rabbit Rivers. Very high priority.
- SPS 78 65
20 AE 75
*(previously recorded)
Valdes I. Scatter; SE 1/4, SE 1/4, Saugatuck Sec. 24; Archaic. Debitage and two biface fragments found in 3800 m² sandy area on bluff overlooking intermittent stream and Kalamazoo River. Site considered very important because of location, which is similar to other Archaic sites in this part of river valley, and proximity to SPS 78 64; probably same Archaic settlement system and culture. High site density, which can elucidate settlement system, in this unit and area. High priority.
- SPS 78 66
20 AE 458
Valdes II. Scatter; SE 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Medium FCR and six chips found in 4500 m² area about 100 m south of SPS 78 65. Sites are probably related. Medium priority.
- SPS 78 67
20 AE 459
Vollink I. Scatter; SE 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Debitage and FCR in blow-out; size is about 800 m², but site is disturbed by road construction. Low priority.
- SPS 78 68
20 AE 460
Vollink II. Component; SE 1/4, SE 1/4, Saugatuck Sec. 24; Archaic. Heavy lithic and FCR scatter, with biface and four unifaces, in 2556 m² sandy ridge. Similar to SPS 78 65 (see). High to medium priority.
- SPS 78 69
20 AE 461
Vollink III. Component, SE 1/4, SE 1/4, Saugatuck Sec. 24; Archaic. Heavydebitage and FCR, one corner-notched biface found near Kalamazoo River on bluff; about 3142 m². Site is in similar location to SPS 78 64, 65, 68. Relatively undisturbed site, not plowed should be tested. Very high priority.
- SPS 78 70
20 AE 462
Decker IV. Scatter; SW 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Lightdebitage and FCR on sand ridge between two

ravines with intermittent streams. Low to medium priority.

- SPS 78 71
20 AE 463 Decker I. Scatter; SE 1/4, SE 1/4, Saugatuck Sec. 24; Late Archaic. Sparse chippage and one Adena-like point on bluff edge east of ravine with intermittent stream. Site is relatively undisturbed. Low to medium priority.
- SPS 78 72
20 AE 464 Decker II. Scatter; SW 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Moderate debitage scattered throughout 800 m² on bluff over ravine/intermittent creek; relatively undisturbed. Low to medium priority.
- SPS 78 73
20 AE 465 Decker III. Scatter; SW 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Light debitage scatter similar to SPS 78 71, 72; generally similar to other scatters in this unit and area. About 2500 m². This site and the sites mentioned here are not so significant in and of themselves, but relationships of sites should be studied to determine settlement pattern. Low to medium priority.
- SPS 78 74
20 AE 109
*(previously recorded) Decker V. Scatter; SW 1/4, SE 1/4, Saugatuck Sec. 24; Archaic. Fairly heavy chippage, unifaces similar to SPS 78 64, two bifaces and medium FCR in 3500 m²; site borders on 'component' class. Linear scatter on sand ridge just south of SPS 78 64; sites are undoubtedly related. High to medium priority.
- SPS 78 75
20 AE 467 Decker VI. Scatter; SW 1/4, SE 1/4, Saugatuck Sec. 24; undetermined. Very light chippage in small area: 400 m²; heavy FCR. Located between and very near SPS 78 64 and 74, probably related to them. Low to medium priority.
- SPS 78 76
20 AE 468 Reimer. Scatter; SE 1/4, NE 1/4, Saugatuck Sec. 20; undetermined. Debitage scatter within 6000 m² in linear sand ridge. Lake Michigan lies 300 m to west. Low priority.
- SPS 78 77
20 AE 469 Jager. Isolated find; NE 1/4, NW 1/4, Saugatuck Sec. 20; undetermined. Three chert cores found in wet area; soil has high clay content. Unusual location. Low priority.
- SPS 78 78
20 AE 470 Wolz I. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 22; undetermined. Debitage found in long linear scatter: about 300 linear m. Site lies across ravine from similar site: SPS 78 79 (see). Medium to low priority.
- SPS 78 79
20 AE 471 Wolz II. Scatter, NW 1/4, NE 1/4, Saugatuck Sec. 22; undetermined. Fairly heavy debitage, two bifaces, three unifaces, and light FCR in 300 m linear scatter east of ravine, across from SPS 78 78. Site borders on 'component' status. Medium priority.
- SPS 78 80
20 AE 472 Wolz III. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 22; Woodland. Chips, one uniface, and one sherd in small overgrown area; site size undeterminable. Located at ravine edge south of SPS 78 79. Medium priority.
- SPS 78 81
20 AE 473 Simmons I. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 22; Archaic. Light chippage scatter, two bifaces in highly disturbed area;

site has been destroyed by artificial pond construction.
Low priority.

- SPS 78 82
20 AE 474
Simmons II. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 22; Archaic. Single biface and ten chips in 35 m² sand blow-out. Low priority.
- SPS 78 83
20 AE 475
Simmons III. Component; SW 1/4, NE 1/4, Saugatuck Sec. 22; undetermined. Very heavy concentration of debitage and FCR in small area: about 400 m². Sand blow-out on bank of small stream. High priority.
- SPS 78 84
20 AE 476
Simmons IV. Scatter; N 1/4, NE 1/4, Saugatuck Sec. 22; undetermined. Single core and four chips in sand blow-out. Low priority.
- SPS 78 85
20 AE 477
Simmons V. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 22; undetermined. Small chippage scatter, undetermined size. Low priority.
- SPS 78 86
20 AE 478
Chase I. Component; SW 1/4, NE 1/4, Saugatuck Sec. 33; undetermined. Very heavy debitage and heavy FCR in 377 m² area; high density of material indicating intensive occupation. Located in sand blow-out west of ravine/creek. High priority.
- SPS 78 87
20 AE 479
Chase II. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 33; undetermined. Chips, two uniface and a biface in wide scatter, undeterminable size. Material found generally in blow-out areas. Low priority.
- SPS 78 88
20 AE 480
Degentano I. Scatter; SE 1/4, NE 1/4, Saugatuck Sec. 33; undetermined. Three unifaces and light chippage in very dispersed scatter, size undeterminable. Unusual location in wet, clayey soil; site should be further investigated to determine nature of occupation. Medium to high priority.
- SPS 78 89
20 AE 481
Degentano II. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 33; Undetermined and historic. Fairly heavy debitage in 800 m² area on creek bank; borders on 'component' status. Medium to high priority.
- SPS 78 90
20 AE 482
Wolbrink IV. Component; E 1/4, NE 1/4, Saugatuck Sec. 22; Late Archaic. Debitage and bifaces, including an expanding stem base and serrated edge tip, with medium FCR in 10000 m² area; concentrations of material noted in site area. Located west of creek/ravine, south of Kalamazoo River. High priority.
- SPS 78 91
20 AE 483
Wolbrink V. Scatter; E 1/2, NE 1/4, Saugatuck Sec. 22; undetermined. Seven chips scattered over fairly wide area; south of SPS 78 90. Low priority.
- SPS 78 92
20 AE 483
Kupres. Scatter; NW 1/2, SW 1/4, Saugatuck Sec. 26; undetermined. Seven chips scattered over fairly wide area: 500 m². Site is located in sand at edge of clay/till soil. Moderate priority.

- SPS 78 93 Sarji. Scatter; NE 1/4, NE 1/4, Saugatuck Sec. 35; undetermined.
20 AE 485 Light scatter on sandy knoll overlooking clay/till damp soil; concentration of material in about 300 m², but a few flakes found scattered over about 10 acre area. Low to medium priority.
- SPS 78 94 Jalving. Scatter; SW 1/4, SW 1/4, Laketown Sec. 15; undetermined.
20 AE 486 Light lithic scatter, about 350 m², in sand blowout leeward of large swampy area. Low priority.
- SPS 78 95 Fenn Valley I. Scatter; SW 1/4, NE 1/4, Ganges Sec. 12; undetermined.
20 AE 487 Unidentifiable biface and light chippage in very wide scatter; size not determinable. Area is about 1/4 mi. SW of Hutchins Lake; several small sites were found in this area (see below), can possibly elucidate aboriginal use of non-riverine inland lake areas. High priority.
- SPS 78 96 Fenn Valley II. Scatter; SW 1/4, NE 1/4, Ganges Sec. 12; Woodland.
20 AE 488 Very light FCR, light chippage and one potsherd found in wide, dispersed scatter; actual size not determinable. Site located on sandy ridge about 150 m SW of SPS 78 95 (see). Site and area in general can assist in determining Woodland period settlement patterns in non-riverine areas; Woodland sites are rare in non-riverine areas. High priority.
- SPS 78 97 Fenn Valley III. Isolated find; SW 1/4, NE 1/4, Ganges Sec. 12;
20 AE 489 undetermined. Single uniface found in vineyard north of SPS 78 96. Low priority.
- SPS 78 98 Sievert I. Scatter; SE 1/4, SE 1/4, Ganges Sec. 2; Woodland.
20 AE 490 One body sherd and nine chips in 650 m² area; this size is probably too small since ground cover was heavy and visibility poor. Located in sandy ridge bordering upland swamp; can determine Woodland settlement systems in non-riverine areas (see SPS 78 96). High priority.
- SPS 78 99 Sievert II. Scatter; SE 1/4, SE 1/4, Ganges Sec. 2; Woodland.
20 AE 491 One sherd and moderate chippage in about 2500 m² area; actual site size probably bigger; surface visibility poor. Like SPS 78 98, this site is important because it is Woodland period located in upland environment. High priority.
- SPS 78 100 Sievert III. Scatter; SE 1/4, SE 1/4, Ganges Sec. 2; undetermined.
20 AE 492 Light lithic and FCR scatter, 400 m²; actual site probably larger (c.f. SPS 78 99, 98). Located on sandy soil in orchard near upland swamp. Medium priority.
- SPS 78 101 Sims I. Scatter; NE 1/4, SE 1/4; Ganges Sec. 2; undetermined.
20 AE 493 Five chips in quite small area; in sand adjacent to swamp. Low priority.
- SPS 78 102 Sims II. Scatter; SE 1/4, SE 1/4, Ganges Sec. 2; undetermined.
20 AE 494 Light lithic scatter in sand ridge above swamp. Medium to low priority.
- SPS 78 103 Plopa. Component; SW 1/4, SE 1/4, Ganges Sec. 2; Late Archaic.
20 AE 495 Bifaces, unifaces, cores and moderate to heavy chippage on

sand knoll/ridge; about 2-3 acre area. Ground and pitted stone found also. Largest site in unit; previous five sites in same unit. Important is fact that diagnostic Late Archaic artifacts present (Brewerton-like point), and this site is very similar to other definite Late Archaic sites in universe, from here up through Rabbit River. This site and these similar sites are very important because they are always large, and can help elucidate Late Archaic settlement systems in Kalamazoo basin. Very high priority.

- SPS 78 104 Breed. Isolated find; SE 1/4, SW 1/4, Ganges Sec. 12; undetermined. Single bi-pitted nutting block found in plowed field two chips found variously over 20 acre area. Low priority.
20 AE 496
- SPS 78 105 Harris I. Isolated find; NW 1/4, SW 1/4, Ganges Sec. 12; Late Archaic. Brewerton Corner-notched point found in plowed field. Low priority.
20 AE 497
- SPS 78 106 Harris II. Scatter; NE 1/4, SW 1/4, Ganges Sec. 12; undetermined. One uniface and three chips on small area, maybe 900 m². Found on sandy area adjacent to swamp. Low priority.
20 AE 498
- SPS 78 107 Staskewicz. Isolated find; SE 1/4, NE 1/4, Ganges Sec. 35; undetermined.
20 AE 499
- SPS 78 108 Kleis I. Component; N 1/3, center; SW 1/4, Manlius Sec. 18, Late Allegan phase, Late Woodland. Very high density of chippage, tools, pottery in linear site, about 7500 m². Located very near Kalamazoo River bank. High site density in this area. Pottery indicates Late Allegan phase temporal placement; site probably represents warm weather site, and fits in with known similar sites. Very high priority.
20 AE 500
- SPS 78 109 Kleis II. Scatter; NW 1/4, SW 1/4, Manlius Sec. 18; probably Woodland. One side-notched biface and light chippage and FCR found in rather small area; actual size not discernable, but probably less than 1000 m². Site is located about 200 yds. east of previously recorded Nordhof site; sites are probably related, as is probably SPS 78 108. Low to medium priority.
20 AE 501
- SPS 78 110 Wolters. Scatter; NE 1/4, NE 1/4, Ganges Sec. 9; undetermined. One core and light chippage, in 1250 m² on sand ridge. Low priority.
20 AE 502
- SPS 78 111 DeZwaan. Scatter; SW 1/4, SW 1/4, Ganges Sec. 4; undetermined. Medium chippage, cores, and single biface fragment found in 4000 m² area on sand ridge. Low to medium priority.
20 AE 503
- SPS 78 112 Voss. Scatter; NE 1/4, SW 1/4, Ganges Sec. 4; undetermined. Biface and chippage in large, highly disturbed area; area of scatter is about 20000 m², but site has been disturbed by gravel pit. Low priority.
20 AE 504

- SPS 78 113
20 AE 100
*(previously recorded)
- Vedanta Site
Vivekananda I. Component; NE 1/4, SW 1/4, Ganges Sec. 4; Late Archaic. Very heavy debitage, two unifaces and one biface in 30000 m² area on sand ridge; small stream to north. Part of high site density in unit and area. Owners have large collection, mostly Late Archaic material. Site is important because it follows pattern of large, dense Late Archaic sites in area. Very high priority.
- SPS 78 114
20 AE 505
- Vivekananda II. Component; NE 1/4, SW 1/4, Ganges Sec. 4; Late Archaic. Near and similar to SPS 78 113, located on same sand ridge. Very heavy debitage and tool density in 600 m²; higher density than SPS 78 113. Site relates to SPS 78 113 (see). Very high priority.
- SPS 78 115
20 AE 506
- Vivekananda III. Scatter; NE 1/4, SW 1/4, Ganges Sec. 4; Archaic. Moderate scatter on same sand ridge as SPS 78 113, 114; about 1000 m². Probably relates to former two sites. Medium priority.
- SPS 78 116
20 AE 507
- Jones I. Component; NW 1/4, SE 1/4, Ganges Sec. 4; Archaic and Historic. Very heavy concentration of debitage and a few tools: 300 m². Fragment of Kaolin pipe found also. Part of high density in unit; very similar site to SPS 78 113, 114. High priority.
- SPS 78 117
20 AE 508
- Jones II. Scatter; NW 1/4, SE 1/4, Ganges Sec. 4; undetermined. Heavy scatter in wide area, 15000 m², in sand blow-out. Part of very high site density in unit; relationship, temporal and spatial, of all these Ganges Sec. 4 sites is needed to determine settlement system. Medium to high priority.
- SPS 78 118
20 AE 509
- Sorensen. Component; NW 1/4, SE 1/4, Ganges Sec. 4; Archaic. Extremely high density of chippage, cores, and fragmented bifaces in 200 m² area on sand ridge; upland swamp and intermittent stream associated. Again, part of high site density in unit. High priority.
- SPS 78 119
20 AE 510
- Speedo. Scatter; SW 1/4, NE 1/4, Ganges Sec. 9; undetermined. Light lithic scatter, 5000 m²; on sand ridge adjacent to upland swamps. Low priority.
- SPS 78 120
20 AE 511
- Kleis III. Scatter; N 1/4, Center; SW 1/4, Manlius Sec. 18; Woodland. Very heavy scatter with one sherd very near SPS 78 108. Material found in 6 m² disturbed area; site obviously is large, very dense overgrowth. Would seem to be related to SPS 78 108. High priority.
- SPS 78 121
20 AE 512
- Schneider. Scatter; SE 1/4, NW 1/4, Saugatuck Sec. 32; undetermined. Chippage and cores in small area, about 70 m², in blown-out dune. Low priority.
- SPS 78 122
20 AE 513
- Rhead's Jeans. Isolated find; NE 1/4, NE 1/4, Saugatuck Sec. 32; Early Archaic. Single bifurcated base point discovered when sat on. Medium priority.
- SPS 78 123
20 AE 514
- Allman. Scatter; NE 1/4, NW 1/4, Saugatuck Sec. 29; undetermined. Few chips in very small area, 120 m². Unreliable in-

formant said people had dug up burials here before. High priority (because of possibility of burials).

- SPS 78 124
20 AE 515 Otta. Component; NE 1/4, SW 1/4, Saugatuck Sec. 29; undetermined. Heavy debitage, unifaces and bifaces, medium FCR in 10000 m² sand ridge, just east of SPS 78 123. Small creek to NW about 150 m. High to medium priority.
- SPS 78 125
20 AE 516 Laksers. Scatter; NE 1/4, NE 1/4, Saugatuck Sec. 29; Archaic. Four unifaces, one biface, cores and debitage found in 3000 m² area on sand ridge. Site is disturbed and partly destroyed by sand mining. Low priority.
- SPS 78 126
20 AE 517 Great Big. Component; SW 1/4, SW 1/4, Manlius Sec. 6; Early Archaic, Late Archaic, and Historic Large site, about 7000 m², in sand blow-outs on sand ridge. This site yielded the highest density of debris of any discovered. Over 4000 chips found; nine bifaces, 29 unifaces, very heavy FCR. Controlled surface collection undertaken at this site, with four collection areas of unequal size. Two probably hearth areas noted. Most of site is blown-out, but one relatively undisturbed area may be worth testing. Site is considered very important because it is a large, dense Late Archaic site, and fits in with similar sites discussed previously and below; site can be instrumental in determination of Late Archaic settlement system. Early Archaic point present also. Very high priority.
- SPS 78 127
20 AE 518 Rigterink I. Component; SW 1/4, SW 1/4, Manlius Sec. 6; Late Allegan phase, Late Woodland. Chippage, bifaces, cores, and two sherds, found at base of knoll in sandy area on sand ridge, on west bank of intermittenng creek/swamp. Part of high site density in unit; rather unusual location for Late Allegan site; thus, site is of importance in determining settlement system, maybe task specific site of some kind. High priority.
- SPS 78 128
20 AE 519 Kool I. Scatter; NW 1/4, SW 1/4, Manlius Sec. 6; undetermined. Medium to heavy FCR scatter with one possible grinding tone; 600 m². Very similar to such sites in this area, most probably all are related. Medium to low priority.
- SPS 78 129
20 AE 520 Kool II. Scatter; NW 1/4, SW 1/4, Manlius Sec. 6; undetermined. Light chippage and FCR, with two biface rejects, in small scatter on sand ridge; about 700 m². May relate to several sites in this unit and area. Medium to low priority.
- SPS 78 130
20 AE 521 Rigterink II. Scatter; SW 1/4, SW 1/4, Manlius Sec. 6; undetermined. Few chips found in wide dispersion; site disturbed by creation of artificial pond. Low priority.
- SPS 78 131
20 AE 522 Rigterink III. Scatter; SW 1/4, SW 1/4, Manlius Sec. 6; undetermined. Medium lithic scatter with medium FCR in blow-out; site disturbed by construction of artificial pond. Low priority.

- SPS 78 132 Fennville Buggy. Scatter; N 1/2, SW 1/4, Manlius Sec. 19;
20 AE 125 Late Archaic. Depressing site; very highly disturbed site
* (previously recorded) (probably several sites, but this is impossible to determine)
in area used for dune buggy and motorcycle racing. Disturbed
area of scatter is at least 1/4 mi. x 1/8 mi., though again,
this was probably several sites. Chippage and much FCR found;
one Late Archaic biface. Site might be worth revisiting to
map in areas of discreet scatter, but whole area is very
badly torn up. Medium to low priority.
- SPS 78 133 Below Buggy. Scatter; NE 1/4, SW 1/4, Manlius Sec. 19; undeter-
20 AE 523 mined. Light lithic scatter, on small terrace above Kalamazoo
River, and below bluff with SPS 78 132. About 1000 m². Low
priority.
- SPS 78 134 Canny. Scatter; SW 1/4, SW 1/4, Manlius Sec. 19; undetermined.
20 AE 524 Very light lithic and FCR scatter in 1800 m² area; area dis-
turbed by house construction, apparently landscaping also.
Located across creek/ravine south of SPS 78 132. Low priority.
- SPS 78 135 Beuscher. Scatter; SE 1/4, SW 1/4, Manlius Sec. 19; undeter-
20 AE 525 mined. Five chips and one FCR in heavily overgrown area;
material dispersed, size of site unknown. It is undoubtable
that there is more material here, but ground cover was heavy.
Located across creek/ravine south of SPS 78 132. Low to
medium priority.
- SPS 78 136 Bouwman. Scatter; SE 1/4, NW 1/4, Fillmore Sec. 19; Archaic.
20 AE 526 Chippage, light FCR and two bifaces in 2500 m² blowout, ad-
jacent to upland swamps. Low to medium priority.
- SPS 78 137 Garvelink. Scatter; NW 1/4, NE 1/4, Fillmore Sec. 22; undeter-
20 AE 527 mined. Light scatter in wide area: about 5000 m². Located
in sandy cultivated field, 100 m E of stream. Low priority.
- SPS 78 138 Cook. Isolated find; NE 1/4, SW 1/4, Fillmore Sec. 14; undeter-
20 AE 528 mined. Three chips in small area long bank of creek. Low
priority.
- SPS 78 139 Becksvoort I. Scatter; SE 1/4, NW 1/4, Fillmore Sec. 19; un-
20 AE 529 determined. Light lithic and FCR scatter in linear area:
1350 m². Runs along sand ridge above upland swamp and inter-
mittent creek. Low priority.
- SPS 78 140 Becksvoort II. Scatter; NE 1/4, NW 1/4, Fillmore Sec. 19; un-
20 AE 530 determined. Heavy FCR scatter with two chips in 450 m²
concentration, may be isolated hearth of some kind. Located
on sand ridge. Low priority.
- SPS 78 141 Hoffmeyer. Scatter; SW 1/4, NW 1/4, Fillmore Sec. 19; undeter-
20 AE 531 mined. Single uniface, light chippage and FCR in linear
scatter; size is about 60 linear m. Located along ridge.
Low priority.

- SPS 78 142 Rigterink IV. Scatter; SW 1/4, SW 1/4, Manlius Sec. 6; unde-
20 AE 532 terminated. Small debitage scatter in sand near swamp; about
500 m². Probably relates, or is ancillary to, SPS 78 126.
Part of very high site density in unit and area. Medium
priority.
- SPS 78 143 Kevin I. Scatter; SW 1/4, SW 1/4, Manlius Sec. 6; Archaic.
20 AE 533 Light chippage, cores; one biface, and heavy FCR in 875 m²
blow-out area. Located about 50 m S of SPS 78 126; two
areas appear to be discreet sites; both are probably related.
Medium priority.
- SPS 78 144 Kevin II. Scatter; SW 1/4, SW 1/4, Manlius Sec. 6; undeter-
20 AE 534 mined. Light chippage and heavy FCR in small blow-out area:
about 400 m². Would seem to relate to similar sites in
this unit and general area. Medium priority.
- SPS 78 145 Kevin III. Component; SW 1/4, SW 1/4, Manlius Sec. 6; Archaic.
20 AE 535 Heavy debitage, and few tools, with medium FCR with con-
centrations in long linear sand blow/ridge overlooking swamp.
Area of scatter is about 120 m; 2400 m². Appears similar
to SSP 78 126 (see), and thus is probably related. Majority
of sites in this unit appear to be Archaic (probably Late),
and thus are important in defining settlement pattern. High
priority.
- SPS 78 146 Kalmink I. Scatter; SW 1/4, SE 1/4, Manlius Sec. 3; Archaic.
20 AE 536 One corner-notched biface, two rejects, unifaces and
chippage in 2500 m² area, on sandy bluff overlooking Rabbit
River. High priority.
- SPS 78 147 Kalmink II. Component; SW 1/4, SE 1/4, Manlius Sec. 3; Late
20 AE 537 Archaic. Late Archaic bifaces and unifaces with surprisingly
little chippage and FCR in 400 m² area; located on bluff
above Rabbit River, N of SPS 78 146. Sites are probably
related. High priority.
- SPS 78 148 Lubbers I. Scatter; SW 1/4, SE 1/4, Manlius Sec. 3; Archaic.
20 AE 538 Light chippage and FCR, with one biface and uniface, on bluff
along Rabbit River N of SPS 78 147; about 250 m². Medium
to low priority.
- SPS 78 149 Lubbers II. Scatter; NW 1/4, SE 1/4, Manlius Sec. 3; undetermined.
20 AE 38 Cores and light chippage in 5 acre field back from Rabbit
* (previously River bluff, near SPS 78 148. Low priority.
recorded)
- SPS 78 150 Martinez I. Scatter; SE 1/4, NW 1/4, Ganges Sec. 35; undetermined.
20 AE 539 Sparse chippage and one large uniface in 250 m² pasture area.
Site has been disturbed. Low priority.
- SPS 78 151 Martinez II. Scatter; SE 1/4, NW 1/4, Ganges Sec. 35; undeter-
20 AE 540 mined. Light chippage in very disturbed, sand mined area;
size of actual site not determinable. Low priority.

- SPS 78 152 Lohman I. Scatter; SW 1/4, NW 1/4, Manlius Sec. 2; undetermined. Light chippage and cores in 600 m² area; at bottom of slight slope adjacent to small stream. Low priority.
20 AE 541
- SPS 78 153 Lohman II. Scatter; SW 1/4, NW 1/4, Manlius Sec. 2; Early Archaic. Light debitage and FCR, with one bifurcated base point in field adjacent to small creek. High priority.
20 AE 98
* (previously recorded)
- SPS 78 154 Belder. Isolated find; SW 1/4, NE 1/4, Manlius Sec. 4; Archaic and Historic. Point, two chips, and Kaolin pipe fragment found near each other (size undetermined) in low clay field. Unusual location for cultural material. Medium to low priority.
20 AE 543
- SPS 78 155 Lampen. Component; NE 1/4, NW 1/4, Manlius Sec. 1; Late Archaic. Little material found during 1978 survey; site identified primarily by large landowner collection. Site is linear (size undeterminable) and reportedly large. Similar in nature and location to other Late Archaic sites in area. High priority.
20 AE 544
- SPS 78 156 Madejczyk. Scatter; SW 1/4, NW 1/4, Ganges Sec. 35; undetermined. Light lithic and FCR scatter in 3600 m² sandy area, within muck field soil (#8); near muck soil/till plain junction. Low to medium priority.
20 AE 545
- SPS 78 157 Phelps Orchard. Component; NW 1/4, SE 1/4, Ganges Sec. 28; Late Archaic. Heavy chippage and biface fragment found in 2000 m² sandy knoll on predominantly clay/till soil. Upland swamp adjacent. High to medium priority.
20 AE 546
- SPS 78 158 Clark. Scatter; NE 1/4, NW 1/4, Ganges Sec. 34; Archaic. Light scatter of chips, cores, and bifacial scraper found on sandy/gravelly knoll in predominantly clay till. Similar to SPS 78 157 (see). High to medium priority.
20 AE 547
- SPS 78 159 Squaw Skin Lodge (upper). Component; NE 1/4, SW 1/4, Manlius Sec. 15; Late Allegan phase, Late Woodland. Large site; linear, about 1/8 mi; about 36000 m². Located on bluff overlooking lower terrace (with SPS 78 160) and Kalamazoo River. Chippage, FCR, tools, pottery found; site relatively undisturbed, should be tested. High priority.
20 AE 216
* (previously recorded)
- SPS 78 160 Squaw Skin Lodge (lower); Component; NE 1/4, SW 1/4, Manlius Sec. 15; Woodland. Located on lower terrace below bluff and SPS 78 159. Debitage, pottery, FCR in 7000 m² area; part of site graded off into river; most still intact. Relationship of this site and SPS 78 159 on bluff should be further investigated. High priority.
20 AE 49
* (previously recorded)
- SPS 78 161 Battaglia. Component. NW 1/4, NW 1/4, Manlius Sec. 12; Late Archaic. Large Late Archaic site, at least 14,000 m². Heavy debitage and FCR, high bifacial and unifacial artifact density. Located on bluff edge overlooking Rabbit River. Fits in well with pattern of large Late Archaic sites on high ground. High priority.
20 AE 149
* (previously recorded)

- SPS 78 162 State I. Scatter; NW 1/4, NW 1/4, Manlius Sec. 34; undetermined.
20 AE 548 Few chips and light FCR in wide scatter, size not determinable.
Low priority.
- SPS 78 163 Joostbern. Isolated find. NW 1/4, NW 1/4, Saugatuck Sec. 12;
20 AE 549 undetermined and historic. Few chips and Kaolin pipe fragment
in small area on sand ridge. Low priority.
- SPS 78 164 Kleinheksel. Scatter; E 1/2, NW 1/4, Manlius Sec. 12; Undetermined.
20 AE 550 Chippage, light FCR, and mano in wide 10000 m² scatter. Found
in sandy field near ravine edge. Low priority.
- SPS 78 165 Jacobs. Component; SE 1/4, SW 1/4, Manlius Sec. 7; Late Allegan
20 AE 65 phase, Late Woodland. Concentration of material in one acre
*(previously recorded) area; dispersed scatter over five acres. Site has been tested.
May be Late Allegan site used for nut collecting/processing.
High priority.
- SPS 78 166 Lynn I. Component; SE 1/4, SW 1/4, Manlius Sec. 7; Woodland and
20 AE 551 Archaic. Heavy chippage and FCR, with concentrations, in
large blown-out area; about 7500 m². Pottery found in small
area at one end of site; site appears to be multi-component.
Site is important because Woodland component probably relates
to SPS 78 165, and Archaic to similar sites in unit and area.
High priority.
- SPS 78 167 Lynn II. Scatter; NE 1/4, SW 1/4, Manlius Sec. 7; undetermined.
20 AE 552 Light FCR concentration within 100 m². May be isolated hearth.
Low priority.
- SPS 78 168 Kuhn I. Component; SE 1/4, SW 1/4, Manlius Sec. 7; Late Allegan
20 AE 553 phase, Late Woodland. Chippage, Late Allegan pottery and Madison
point found in small area: 600 m². Ceramic/lithic ratio is
3:1, possibly indicating task specific site; similar site is
known. High priority.
- SPS 78 169 Kuhn II. Scatter; SE 1/4, SW 1/4, Manlius Sec. 7; Late Allegan
20 AE 554 phase, Late Woodland. Chippage, few sherds, and Madison point
found in 1200 m² fallow sandy field near SPS 78 168; sites are
probably related. This unit contains highest known density of
Late Allegan sites; should be further investigated to determine
relationships and settlement pattern. High priority.
- SPS 78 170 Lynn III. Scatter; SE 1/4, SW 1/4, Manlius Sec. 7; Woodland.
20 AE 555 Light debitage and FCR, five sherds found in 2400 m² sand blow-
out, near SPS 78 166 and 169; part of high Woodland site density
in unit, worth revisiting. High priority.
- SPS 78 171 Kuhn III. Scatter; NE 1/4, SW 1/4, Manlius Sec. 7; undetermined.
20 AE 556 Light chippage scatter with few FCR; within 100 m². Probably
relates to other sites in unit. Low priority.
- SPS 78 172 Lange I. Scatter; SW 1/4, SW 1/4, Manlius Sec. 7; Woodland. Light
20 AE 557 chippage, FCR, sherds in 1200 m² blow-out at edge of small creek;
similar pottery to Late Allegan sites in unit, most probably
related to them. High to medium priority.

- SPS 78 173
20 AE 558 Lange II. Scatter; SW 1/4, SW 1/4, Manlius Sec. 7; Late Allegan phase, Late Woodland. Light scatter of chippage, sherds, FCR in linear scatter on sandy ridge adjacent to creek; about 2100 m². Again, part of Late Allegan settlement pattern in unit and area; should be tested. High priority.
- SPS 78 174
20 AE 559 Lange III. Isolated find; SW 1/4, SW 1/4, Manlius Sec. 7; undetermined. One large core and one large flake within 10 m of each other, on sandy soil in fallow field. Low priority.
- SPS 78 175
20 AE 560 Shuham I. Scatter; NW 1/4, SW 1/4, Manlius Sec. 7; undetermined. Heavy FCR scatter with two chips, on sandy ridge overlooking upland swamps. Very near similar sites (SPS 78 176, 177; see). Sites probably related. Medium priority.
- SPS 78 176
20 AE 561 Shuham II. Scatter; NW 1/4, SW 1/4, Manlius Sec. 7; Woodland and Historic. Heavy debitage and FCR, one sherd and one Kaolin pipe fragment in amorphous sand blow-out; about 1600 m². Located on sand ridge adjacent to swamp, north of SPS 78 175. Medium priority.
- SPS 78 177
20 AE 562 Shuham III. Scatter; NW 1/4, SW 1/4, Manlius Sec. 7; undetermined. Heavy debitage and very heavy FCR in 3600 m² blow-out, on sand ridge north of SPS 78 176. Sites are probably related, probably similar function. Medium priority.
- SPS 78 178
20 AE 563 Godfrey. Scatter; SE 1/4, SE 1/4, Manlius Sec. 16; undetermined. Very light scatter of chippage on bluff overlooking riverine swamp and Kalamazoo River; similar scatter about 200 m south considered same site; both less than 400 m². Bluff edge location is possibly significant, as Woodland winter camp sites have been found in these locations. Site is relatively undisturbed. Medium priority.
- SPS 78 179
20 AE 564 Julian Clark I. Scatter; NW and SW 1/4, SE 1/4, Manlius Sec. 16; Woodland. Long linear scatter along bluff edge, overlooking riverine swamp and Kalamazoo River; about 100 m long, 6000 m². Chippage, biface, one sherd found, also medium FCR with concentrations. Location of site is important; site should be tested. High priority.
- SPS 78 180
20 AE 565 Julian Clark II. Isolated find; NW 1/4, SE 1/4, Manlius Sec. 16; undetermined. Five FCR and two chips in 100 m² area. May be isolated hearth, but FCR density is very low. Located back (about 30 m) from bluff edge. Low priority.
- SPS 78 181
20 AE 566 Julian Clark III. Isolated find; NW 1/4, SE 1/4, Manlius Sec. 16; undetermined. Two chips and one core found together about 30 m back from river bluff. Low priority.
- SPS 78 182
20 AE 567 Wunder I. Scatter; NE 1/4, NE 1/4, Manlius Sec. 22; Late Archaic. Light chippage, one Adena-like point, and five steep-retouch unifaces found over 1/8 mi long scatter; site size not determinable. Site appears to be disturbed, possibly by grading. Site is located in gravelly sand on terrace above Kalamazoo River. This soil type usually does not contain sites; this area of river terrace usually does not contain this type of soil. Area should be investigated further. Medium priority.

- SPS 78 183
20 AE 568 Wunder II. Scatter; NE 1/4, NE 1/4, Manlius Sec. 22; Woodland. Very light debitage, two unifaces, and one biface fragment, with a single sherd, in 3500 m² area on sandy bluff above river terrace and SPS 78 182. Site is disturbed by erosion and road cut. May be associated with SPS 78 182. Medium priority.
- SPS 78 184
20 AE 569 State II. Scatter; SW 1/4, NW 1/4, Manlius Sec. 24; Woodland. Thirteen chips, four FCR, and two sherds found along a path on the bluff edge in the State Forest, distance of about 120 m; site size not known. This is potentially an important site, and heavy ground cover hindered surface collection. Site location is similar to known Woodland winter camps; all Woodland sites on riverine swamp/Kalamazoo River bluffs should be investigated. This site is relatively undisturbed and should be tested. High priority.
- SPS 78 185
20 AE 570 Nally. Scatter; NW 1/4, NS 1/4, Ganges Sec. 10; undetermined. Chippage and FCR in 1125 m² sandy ridge; small creek 300 m south. Low priority.
- SPS 78 186
20 AE 571 Walker. Scatter; SW 1/4, NW 1/4, Ganges Sec. 10; undetermined. Light chippage and cores in sand blow-outs, about 6000 m². Upland swamp adjacent to west. Low priority.
- SPS 78 187
20 AE 572 Harrington I. Scatter; NE 1/4, NW 1/4, Ganges Sec. 4; undetermined. Chippage and cores in sand blow-out adjacent to upland swamp; about 2500 m². Heavy FCR. Low priority.
- SPS 78 188
20 AE 573 Sikora. Scatter; NE 1/4, NW 1/4, Ganges Sec. 10; undetermined. Light chippage and one reject biface, with medium FCR in 575 m² sandy area adjacent to upland swamp. Low priority.
- SPS 78 189
20 AE 574 Pluta. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 11; undetermined. Light chippage and FCR in wide scatter: 10000 m². Low priority.
- SPS 78 190
20 AE 575 Luby I. Scatter; SW 1/4, NW 1/4, Ganges Sec. 17; undetermined. Cores and debitage, medium FCR on sand ridge west of upland swamp and small stream; about 500 m². Near SPS 78 191; probably related. Medium priority.
- SPS 78 191
20 AE 576 Luby II. Component; SW 1/4, NW 1/4, Ganges Sec. 17; Archaic. Heavy chippage and medium FCR, with few artifacts, in 500 m² area on sand ridge south of SPS 78 190. Sites are probably related. Medium to high priority.
- SPS 78 192
20 AE 577 Ensfield. Scatter; NW 1/4, NW 1/4, Ganges Sec. 17; undetermined. Cores and chippage in 5000 m² area on sand ridge, north of SPS 78 90, 91. Sites may be related. Medium priority.
- SPS 78 193
20 AE 578 Harrington II. Scatter; NE 1/4, SW 1/4, Manlius Sec. 26; undetermined. Chippage and burned bone in wide 4000 m² area on bluff south of Rabbit River. Site location has potential. Medium priority.

- SPS 78 194 State III. Scatter; SW 1/4, NW 1/4, Manlius Sec. 22; Woodland.
20 AE 579 Five chips and two sherds in small area: about 2500 m².
Located in forest on Kalamazoo River bluff; material found
about 100 m back from bluff edge, but site is probably
larger - very heavy ground cover. High priority.
- SPS 78 195 State IV. Scatter; NW 1/4, NW 1/4, Manlius Sec. 22; undetermined.
20 AE 580 Five chips and one uniface on low terrace above Kalamazoo
River. Area of terrace covers 5-6 acres; material found all
over. Terrace may flood periodically; site may be silted
under. Medium priority.
- SPS 78 196 State V. Scatter; SW 1/2, NW 1/4, Manlius Sec. 22; undetermined.
20 AE 581 Material found in two-track road along Kalamazoo River bluff
in State Forest, distance about 1/2 mi. Obviously this is
not a 1/2 mi. long site; probably several small scatters on
bluff edge. Ground cover prevented finding of more material
or locating discrete concentrations; only 17 chips and two
unifaces found. This whole bluff edge should be further in-
vestigated, since light debris scatter indicates presence
of sites. High priority.
- SPS 78 197 Voorhees I. Scatter; NE 1/4, SE 1/4, Manlius Sec. 31; undeter-
20 AE 582 mined. Chippage, cores, single biface and uniface in wide
scatter: about 40000 m² area. Located on sandy ridge along
swamp. Medium priority.
- SPS 78 198 Voorhees II. Isolated find; NE 1/4, SE 1/4, Manlius Sec. 31;
20 AE 583 undetermined. Two chips in sand blow-out east of swamp.
Low priority.
- SPS 78 199 Voorhees III. Isolated find; NE 1/4, SE 1/4, Manlius Sec. 31;
20 AE 584 undetermined. Two chips near SPS 78 198. Low priority.
- SPS 78 200 Voorhees IV. Scatter; NE 1/4, NE 1/4, Manlius Sec. 31; undeter-
20 AE 585 mined. Light debitage and single biface fragment in 2000 m²
area on bluff overlooking upland swamp. Low to medium priority.
- SPS 78 201 Voorhees V. Scatter; NE 1/4, NE 1/4, Manlius Sec. 31; unde-
20 AE 586 termined. Light chippage in 200 m² area near SPS 78 200;
located on sand ridge, sites are probably related. Part of
high site density in this unit; site distribution can eluci-
date settlement pattern, if further investigated. Medium
priority.
- SPS 78 202 Wadsworth. Scatter; SW 1/4, SE 1/4, Manlius Sec. 31; undetermined.
20 AE 587 Light chippage in small concentration: 30 m². Small creek
and upland swamp associated. Low priority.
- SPS 78 203 Voorhees VI. Scatter; SW 1/4, NE 1/4, Manlius Sec. 31; undeter-
20 AE 588 mined. Light chippage scatter in 600 m² area, very near
SPS 78 204. Low priority.
- SPS 78 204 Voorhees VII. Isolated find; SW 1/4, NE 1/4, Manlius Sec. 31;
20 AE 589 undetermined. Two cores found near SPS 78 203; does not
appear, from field inspection, to be same site. Low priority.

- SPS 78 205 Sears. Scatter; SW 1/4, NE 1/4, Manlius Sec. 31; undetermined.
20 AE 590 Light chippage and one uniface in 7000 m² dispersed scatter;
in low field adjacent to swamp. Low priority.
- SPS 78 206 Crispy. Scatter; SW 1/4, SE 1/4, Manlius Sec. 28; undetermined.
20 AE 591 Light chippage in small area, about 900 m²; in field above
Mann Creek. Site is important because of apparent low site
density in this unit and area in general. Should be inves-
tigated; may be seasonal or task specific site. High priority.
- SPS 78 207 M.J. Raht. Isolated find; SW 1/4, SE 1/4, Manlius Sec. 6; Late
20 AE 592 Archaic. Single large biface blade in plowed field, south of
SPS 78 33; probably related. Low priority.
- SPS 78 208 Collum I. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 29; Early
20 AE 593 Archaic. Chippage and light FCR with bifurcated bare point,
in sand blow-out overlooking upland swamp. High priority.
- SPS 78 209 Collum II. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 29; undeter-
20 AE 594 mined. Light Chippage and FCR in blow-out, near swamp and
SPS 78 208. Low priority.
- SPS 78 210 Collins. Scatter; SW 1/4, NE 1/4, Saugatuck Sec. 29; undetermined.
20 AE 595 Chippage and light FCR in blow-out near upland swamp. Low
priority.
- SPS 78 211 Nordhof. Component; NW 1/4, SW 1/4, Manlius Sec. 18; Late Allegan
20 AE 13 phase, late Woodland; Upper Mississippian. Site excavated by
*previously WMU field crews, 1968; revisited in 1978 but not collected.
recorded Located at base of bluff near Kalamazoo River; part of high
site density in this area. High priority.
- SPS 78 212 Indian Point. Component; NW 1/4, SE 1/4, Saugatuck Sec. 14;
20 AE 70 Late Allegan phase. Late Woodland. Site tested in 1976; re-
*previously visited in 1978 but not collected. Historic component also
recorded present. Entire Indian Point area has high site/debris density,
should be revisited. High priority.

2. HISTORIC SITES WITHIN THE RANDOMLY SAMPLED UNITS

- SPSH 78 1 Veldhuis. SW 1/4, NE 1/4, Laketown Sec. 24; undetermined age. Small amount of ceramics found in sand blow-out. Size, age, and function of site unknown; no visible structures present. Low priority.
- SPSH 78 2 Weller. W 1/2, center; NE 1/4, Laketown Sec. 24; undetermined age. Historic ceramics found in very wide, dispersed area in sandy soil. No associated structures; nature of site unknown. Low priority.
- SPSH 78 3 Scholten. NE 1/4, NW 1/4, Laketown Sec. 13; undetermined age. Large amount of material exhibiting much variation found in small area associated with foundation structure. Site may be homestead site of early 1800's; worth investigating. High priority.
- SPSH 78 4 Visser. NW 1/4; SW 1/4, Laketown Sec. 14; undetermined age. Material found in sand blow-out; no features or foundation associated. Nature of site unknown. Low priority.
- SPSH 78 5 Nass. SE 1/4, SE 1/4, Saugatuck Sec. 24; probably 1880-1890. Large quantity of material found in apparent pothole on river bank. No foundation associated, but might be buried. Nature of refuse suggests dump area; perfume bottle probably dates to 1880-1890. Worth revisiting. High priority.
- SPSH 78 6 Killer Dog Gentry. NW 1/4, SW 1/4, Laketown Sec. 3; undetermined age. Kaolin pipe fragments and few ceramics found in very small area; no foundations in area, which is plowed. Nature of material is puzzling, seems to be isolated find. Low priority.
- SPSH 78 7 Van Noord. SW 1/4, SW 1/4, Fillmore Sec. 14; undetermined age. Single isolated Kaolin pipe stem, found in plowed field. No associations. Low priority.

3. SITES LOCATED OUTSIDE RANDOMLY SAMPLED UNITS

- SPSO 78 1
20 AE 596 Kleis-out I. Scatter; SE 1/4, NE 1/4, Manlius Sec. 18; undetermined. Chippage and two uniface within 3600 m²; located on low bluff above Kalamazoo River and riverine swamp. Lack of chronologically diagnostic artifacts on this (and all "Kleis-out" sites) due to heavy and regular collection by landowner. Very high site density in this unit and area. Medium priority.
- SPSO 78 2
20 AE 597 Kleis-out II. Scatter; SE 1/4, NE 1/4, Manlius Sec. 18; Late Archaic. Heavy debitage, cores, two uniface, and one Brewerton-like side-notched point in 225 m² area; actual site may be larger. Located on sandy terrace below SPSO 78 1. Medium priority.
- SPSO 78 3
20 AE 598 Kleis-out III. Scatter; NE 1/4, NE 1/4, Manlius Sec. 18; undetermined. Heavy FCR scatter with no chippage or artifacts in small (400 m²) area; may be isolated hearth. Similar to other such FCR scatters in area. Medium priority.
- SPSO 78 4
20 AE 599 Kleis-out IV. Scatter; S 1/4 center, NW 1/4, Manlius Sec. 18; undetermined. Debitage, medium FCR, and two fragmented bifaces in linear scatter on bluff edge overlooking lower terrace (with several sites) and Kalamazoo River; about 6000 m². Part of high site density in area and unit. Medium priority.
- SPSO 78 5
20 AE 600 Kleis-out V. Scatter; NE 1/4, NE 1/4, Manlius Sec. 18; undetermined. Very light chippage scatter in large fallow field; about 5 acres in extent. Does not seem to be intensively occupied site; located in general proximity to other "Kleis-out" sites. Low priority.
- SPSO 78 6
20 AE 601 Kleis-out VI. Scatter; NE 1/4, NE 1/4, Manlius Sec. 18; Woodland. Very light scatter similar to SPSO 78 5; about 5 acres in plowed field on bluff above SPSO 78 5. Single sherd indicates Woodland placement. Low priority.
- SPSO 78 7
20 AE 602 Kleis-out VII. Component; N 1/2, SW 1/4, Manlius Sec. 18; Woodland. This site was identified by the landowner, who is an avid collector. A box of lithic material and four sherds was donated to the crew; the sherds are reportedly definitely from the site location, the rest of the material "may be". Time did not permit the crew to visit the site location, thus size of site is unknown. It is reportedly on a high bluff immediately adjacent to a creek and the Kalamazoo River. Informant is considered very knowledgeable and reliable, and is trusted; this is the only site recorded during this project that was not actually visited. High priority.
- SPSO 78 8
20 AE 603 Hemlock Point. Component; SW 1/4, NW 1/4, Manlius Sec. 26; Woodland. Site is located on a promontory of ~~A~~nd jutting out from high bank into riverine swamp and nearby Kalamazoo River.

Site is located exactly where one would expect to find it. Two sherds, two small side-notched bifaces, debitage, and light FCR found in 3000 m² linear area on promontory. Presence of sherds in association with small side-notched points, with presence of Upper Mercer chert may possibly indicate Early Allegan phase (c.a. A.D. 500-1000) temporal placement. Site definitely should be tested. Very high priority.

- SPSO 78 9 Welder. Scatter; SW 1/4, SW 1/4, Manlius Sec. 32; Woodland.
20 AE 604 Light chippage and FCR, and five sherds found in 9000 m² wide scatter; site is badly disturbed by construction. Site location off main watercourse is unusual for Woodland site; should be investigated before total destruction. Medium priority.
- SPSO 78 10 Ridge site. Scatter; NE 1/4, SW 1/4, Manlius Sec. 24;
20 AE 615 Woodland and Historic. Material found in long (about 150 m) linear scatter along bluff edge in State Forest; site size not determinable, but material found literally "in a 150 m long line". Sherds, tools, debitage found, along with historic materials. Site has high potential and is relatively undisturbed; should be tested. High priority.
- SPSO 78 11 High Bank. Scatter; NE 1/4, SE 1/4, Manlius Sec. 24; Woodland and Archaic
20 AE 614 Site almost identical to SPSO 78 10; similar location and size; actual m² not determinable. Sherds and chippage found; site is in process of destruction from river cutting away high bank. High priority.
- SPSO 78 12 Voss/Bro II. Component; NE 1/4, SW 1/4, Saugatuck Sec. 24; Paleo-
20 AE 76 Indian and Late Archaic. Very heavy density of material in
*(previous- 10 acre plowed field about 1/8 mi. west of SPS 78 64; sites
ly recorded) may be related. Broken Clovis-like point and several definite
Late Archaic forms found, also ground and pitted stone.
Nearby SPS 78 64 also yielded Clovis point; site and whole
area definitely warrants investigation. Very high priority.
- SPSO 78 13 Lewandowski-out. Scatter; NW 1/4, NE 1/4, Saugatuck Sec. 13;
20 AE 605 undetermined. Long, light linear scatter of chippage on
low terrace on north bank of Kalamazoo River; material found
along 300 m terrace, actual m² not calculatable. Site not in-
tensively occupied. Low priority.
- SPSO 78 14 Jennings. Isolated find; NW 1/4, SE 1/4, SE 1/4, Laketown Sec.
20 AE 606 11; undetermined. Two large flakes found on sand ridge.
Area was inspected because of high probability of containing
a site; whole sand ridge seems to be disturbed by mining how-
ever. Low priority.
- SPSO 78 15 Veldhof. Component; SW 1/4, NE 1/4, Manlius Sec. 9; Late
20 AE 607 Archaic. Excellent site, on bluff overlooking Rabbit River.
Scatter of material covers 10 acres; 11 bifaces 10 unifaces,
several cores and ground stone found. Site is important be-
cause it is a large Late Archaic site similar to several other

such sites in the area, and can be instrumental in establishment of typologies and determination of settlement system of Late Archaic peoples. Very high priority.

- SPSO 78 16
20 AE 542 Campania Farm. Scatter; NW 1/4, SW 1/4, Clyde Sec. 19; Undetermined. Site is located out of sampling universe and does not appear on any maps. Site is located within muck soil (#8), and was found accidentally while searching for SPSO 78 17. Location on this soil is unusual. Light scatter found; 5625 m².
Site probably related to exploitation of muck/marsh resources, and is probably activity specific. Definitely worth investigating. High priority.
(Frazer site)
- SPSO 78 17
20 AE 84
(previously recorded) Near Campania Farm. Scatter; SW 1/4, NE 1/4, Clyde Sec. 19; Woodland and Historic. Site located outside sampling universe, does not appear on maps.
Site is located on low sand ridge at edge of muck (#8) soil. Location not as unusual as previous site. Light chippage, one sherd, and kaolin pipe stem found in 2,500 m² area. Site may be related to SPSO 78 16. High priority.
- SPSO 78 18
20 AE 609 Creason. Scatter; SE 1/4, NE 1/4, Manlius Sec. 31; undetermined. Light debitage scatter in 5,000 m² plowed field; probably related to other sites in area. Medium priority.
- SPSO 78 19
20 AE 610 Valleau-out. Scatter; NE 1/4, SW 1/4, Saugatuck Sec. 2; undetermined. Eleven chips in wide scatter; size not applicable. Low priority.
- SPSO 78 20
20 AE 611 Holley. Scatter; NW 1/4, NW 1/4, Saugatuck Sec. 13; Late Archaic and Woodland. Light chippage; two sherds and two Late Archaic points found in sand blow-out; about 500 m². Located on high bank above Kalamazoo River. Found accidentally on lunch break. High priority.
- SPSO 78 21
20 AE 612 Douglas. Scatter; NE 1/4, SE 1/4, Saugatuck Sec. 16; undetermined. Medium debitage and one core in badly disturbed area adjacent to Kalamazoo River and I-96; disturbance is from construction work. Size of site not determinable. Low priority.
- SPSO 78 22
20 AE 542 Ice Cream. Scatter; SE 1/4, SE 1/4, Manlius Sec. 7; Woodland. Site in fallow field; about 500 m². Located across road from SPSO 78 6; sites are probably related. Chips and eight sherds found. Location is on high bank overlooking lower terraces with other sites. High priority.
- SPSO 78 23
20 AE 89 Kleinheksel. Scatter; SW 1/4, NE 1/4, Manlius Sec. 12; undetermined. Light chippage and two unifaces in 700 m² area. Probably related to similar sites nearby. Low priority.

4.

CATALOGUE OF CULTURAL MATERIAL

Settlement Pattern Survey of Allegan County, 1978 Field Season

- SPS 78 1 - Bi-pitted nutting stone: 1
- SPS 78 2 - Debitage: 3; core fragment: 1
- SPS 78 3 - Biface: 1 (side-notched, serrated-edge)
- SPS 78 4 - Debitage: 52; core: 1; uniface: 1; Biface: 1 (fragment); Mano: 1
- SPS 78 5 - Debitage: 1
- SPS 78 6 - Debitage: 7; Core: 1; wedge: 1
- SPS 78 7 - Debitage: 14
- SPS 78 8 - Debitage: 2; Wedge: 1
- SPS 78 9 - Debitage: 31; Cores: 2; uniface: 1
- SPS 78 10 - Debitage: 57; core: 3; wedge: 1; uniface: 1
- SPS 78 11 - Debitage: 3; uniface: 1
- SPS 78 12 - Debitage: 7; biface: 1 (side-notched); worked ground stone: 1
- SPS 78 13 - Debitage: 19; Mano: 1; nutting stone: 1
- SPS 78 14 - Mano: 1 (two fragments)
- SPS 78 15 - Debitage: 164; cores: 2; uniface: 6; biface: 1 (fragment);
mano: 1; wedge: 6; ground stone cylinder: 1; square nail: 1;
china: 2; bead: 1; metal: 1; brick: several
- SPS 78 16 - Debitage: 3
- SPS 78 17 - Debitage: 2; uniface: 1; biface: 1 (fragment)
- SPS 78 18 - Biface: 1 (Ashtabula ^r or Snook-kill)
- SPS 78 19 - Debitage: 31; uniface: 2; biface: 1 (side-notched); teeth: 1
- SPS 78 20 - Uniface: 1
- SPS 78 21 - Debitage: 22; uniface: 1; bone: 1
- SPS 78 22 - Debitage: 20; cores: 2; uniface: 1; biface: 1 (Adena)
- SPS 78 23 - Debitage: 100; cores: 4; biface: 1 (fragment)
- SPS 78 24 - Debitage: 4
- SPS 78 25 - Debitage: 1; mano: 1

- SPS 78 26 - Debitage: 91
- SPS 78 27 - Debitage: 61; biface: 1 (fragment)
- SPS 78 28 - Debitage: 6
- SPS 78 29 - Debitage: 87; bone: 3
- SPS 78 30 - Debitage: 50
- SPS 78 31 - Debitage: 3
- SPS 78 32 - Debitage: 1; core: 1; body sherd: 1
- SPS 78 33 - Debitage: 267; cores: 7; wedge: 1; uniface: 2; Biface: 1 (lozenge/cordiform), 2 unidentifiable
- SPS 78 34 - Debitage: 96; cores: 4; uniface: 1; biface: 3 (rejects); notched net-sinker: 1; Kaolin pipe fragment: 1
- SPS 78 35 - Debitage: 123; cores: 2; wedge: 1; biface: 1 (fragment), 1 (corner-notched); body sherds: 5 (cm/grit)
- SPS 78 36 - Debitage: 6
- SPS 78 37 - Debitage: 8; biface: 1 (corner-notched)
- SPS 78 38 - Debitage: 9; cores: 2
- SPS 78 39 - Debitage: 19
- SPS 78 40 - none (FCR scatter)
- SPS 78 41 - Debitage: 587; cores: 12; biface: 13 (all rejects)
- SPS 78 42 - Debitage: 38; cores: 2; biface: 1 (Hi-Lo)
- SPS 78 43 - Debitage: 16; biface: 1 (reject)
- SPS 78 44 - Debitage: 4; uniface: 1; body sherd: 1
- SPS 78 45 - Debitage: 15
- SPS 78 46 - Debitage: 15; body sherd: 1 (cm/grit)
- SPS 78 47 - Debitage: 33; wedge: 1
- SPS 78 48 - Debitage: 21; core: 1; wedge: 1
- SPS 78 49 - Debitage: 3; core: 1
- SPS 78 50 - Debitage: 23; uniface: 2
- SPS 78 51 - none (FCR scatter)
- SPS 78 52 - Debitage: 1
- SPS 78 53 - Debitage: 80; Biface: 2 (reject and tip); belt buckle: 1

- SPS 78 54 - Debitage: 31; core: 1; teeth: 3
- SPS 78 55 - Debitage: 2
- SPS 78 56 - none (FCR scatter)
- SPS 78 57 - none (FCR scatter)
- SPS 78 58 - Debitage: 237; core: 2; uniface: 1; biface: 1 (tip);
mano: 1; bone: 1
- SPS 78 59 - Debitage: 10
- SPS 78 60 - Debitage: 31; body sherds: 2 (cm/grit)
- SPS 78 61 - Debitage: 37; uniface: 1; biface: 2 (fragments); body
sherds: 9 (cm/grit)
- SPS 78 62 - Debitage: 32; uniface: 1; hammer stone: 1; body sherds:
18 (cm/grit)
- SPS 78 63 - Debitage: 8; body sherds: 2 (cm/grit)
- SPS 78 64 - Debitage: 271; cores: 5; uniface: 7; biface: 10 (1 drill,
2 side-notched, 1 straight stemmed, 6 fragments and rejects);
wedge: 5; metate: 2; mano: 2; hammer stone: 1; ground stone
fragments: 5; shell: 1; bottleneck: 1; ceramic doll: 1;
Kaolin pipe fragment: 1; body sherd: 1 (cm/grit)
- SPS 78 65 - Debitage: 57; wedge: 1; biface: 2 (1 side-notched base, 1
fragment)
- SPS 78 66 - Debitage: 6
- SPS 78 67 - Debitage: 53; core: 1; uniface: 1; biface: 1 (reject);
ground stone sphere: 1
- SPS 78 68 - Debitage: 161; wedge: 5; uniface: 4; biface: 1 (fragment);
mano: 1
- SPS 78 69 - Debitage: 173; biface: 1 (corner-notched)
- SPS 78 70 - Debitage: 17; uniface: 1
- SPS 78 71 - Debitage: 15; biface: 1 (Adena)
- SPS 78 72 - Debitage: 44
- SPS 78 73 - Debitage: 15
- SPS 78 74 - Debitage: 181; cores: 4; wedge: 2; uniface: 7; biface: 2
(1 corner-notched, 1 fragment)
- SPS 78 75 - Debitage: 3; core: 1; wedge: 2
- SPS 78 76 - Debitage: 19; wedge: 1; uniface: 1

- SPS 78 77 - Cores: 3
- SPS 78 78 - Debitage: 59; uniface: 1
- SPS 78 79 - Debitage: 156; core: 1; wedge: 1; uniface: 3;
biface: 2 (rejects)
- SPS 78 80 - Debitage: 23; core: 1; uniface: 1; body sherd:
1 (unident./grit)
- SPS 78 81 - Debitage: 26; core: 1; biface: 2 (1 side-notched
Brewerton-like, 1 unidentified)
- SPS 78 82 - Debitage: 10; biface: 1 (side-notched)
- SPS 78 83 - Debitage: 412; core: 1; uniface: 2
- SPS 78 84 - Debitage: 4; core: 1
- SPS 78 85 - Debitage: 21; core: 1
- SPS 78 86 - Debitage: 436; uniface: 2
- SPS 78 87 - Debitage: 5; core: 1; uniface: 2; mano: 1; biface:
1 (fragment)
- SPS 78 88 - Debitage: 14; core: 3; uniface: 3; mano: 3
- SPS 78 89 - Debitage: 140; cores: 2; uniface: 2; ground stone
cylinder: 1
- SPS 78 90 - Debitage: 206; cores: 7; uniface: 1; biface: 5 (1
serrated tip, 1 reject, 1 expanding-stemmed base,
2 fragments)
- SPS 78 91 - Debitage: 7
- SPS 78 92 - Debitage: 33; core: 1; mano: 1; biface: 1 (reject)
- SPS 78 93 - Debitage: 37; cores: 7; uniface: 2; mano: 2; ground
stone sphere: 1
- SPS 78 94 - Debitage: 14
- SPS 78 95 - Debitage: 23; biface: 1 (reject)
- SPS 78 96 - Debitage: 25; body sherds: 1 (cm/grit)
- SPS 78 97 - Uniface: 1
- SPS 78 98 - Debitage: 9; body sherd: 1 (cm/grit)
- SPS 78 99 - Debitage: 46; body sherd: 1 (cm/grit); teeth: 1
- SPS 78 100 - Debitage: 36
- SPS 78 101 - Debitage: 5

- SPS 78 102 - Debitage: 12
- SPS 78 103 - Debitage: 74; cores: 7; wedge: 1; uniface: 1; biface: 4
(1 side-notched, 1 tip, 2 fragments); mano: 1; bi-pitted
nutting stone: 1
- SPS 78 104 - Debitage: 2; bi-pitted nutting stone: 1
- SPS 78 105 - Biface: 1 (Brewerton Corner-notched)
- SPS 78 106 - Debitage: 3; uniface: 1
- SPS 78 107 - Debitage: 1
- SPS 78 108 - Debitage: 172; cores: 2; wedge: 1; graver: 1; uniface: 1;
biface: 2 (1 drill, 1 side-notched base); mano: 1; shell:
1; body sherds: 10 (cm/grit); rim sherds: 2 (1 Allegan
Undecorated Collared, var. Cordmarked; 1 Allegan Decorated Lip)
- SPS 78 109 - Debitage: 25; biface: 1 (side-notched)
- SPS 78 110 - Debitage: 6; core: 1
- SPS 78 111 - Debitage: 92; cores: 5; biface: 1 (fragment)
- SPS 78 112 - Debitage: 35; uniface: 2; biface: 1 (reject)
- SPS 78 113 - Debitage: 274; core: 1; uniface: 2; biface: 1 (fragment)
- SPS 78 114 - Debitage: 375; cores: 6; uniface: 3; biface: 2 (1 large
tip, 1 fragment)
- SPS 78 115 - Debitage: 67; cores: 3; uniface: 1
- SPS 78 116 - Debitage: 730; core: 1; uniface: 2; biface: 1 (tip);
Kaolin pipe fragment: 1
- SPS 78 117 - Debitage: 274; cores: 2; uniface: 3
- SPS 78 118 - Debitage: 620; cores: 5; wedge: 1; uniface: 2; biface: 4
(3 tips, 1 fragment)
- SPS 78 119 - Debitage: 29; biface: 1 (ovate)
- SPS 78 120 - Debitage: 134; uniface: 2; biface: 1 (fragment); body sherds:
1 (cm/grit)
- SPS 78 121 - Debitage: 50; cores: 3
- SPS 78 122 - Debitage: 2; core: 1; biface: 1 (bifurcated base)
- SPS 78 123 - Debitage: 8; mano: 1
- SPS 78 124 - Debitage: 425; uniface: 8; biface: 2 (1 reject, 1 possible drill)
- SPS 78 125 - Debitage: 71; cores: 4; uniface: 4; biface: 1 (fragment)

- SPS 78 126 - Collection Area A:
 Debitage: 934; core: 1; wedge: 1; uniface: 7; biface:
 6 (3 rejects, 2 side-notched bases, 1 bifurcate base);
 mano: 1
- Collection Area B:
 Debitage: 750; cores: 2; uniface: 9; biface: 1 (square base)
- Collection Area C:
 Debitage: 1145; core: 1; uniface: 7; bone: 2; Kaolin Pipe
 Fragment: 1
- Collection Area D:
 Debitage: 1848; Cores: 6; wedge: 2; uniface: 6; biface: 2
 (1 side-notched base, 1 fragment); mano: 1; ground slate: 1
- TOTALS:
 Debitage: 4677; cores: 10; wedge: 3; uniface: 29; biface: 9;
 bone: 2; mano: 2; ground slate: 1; Kaolin Pipe fragment: 1
- SPS 78 127 - Debitage: 44; cores: 2; wedge: 1; biface: 3 (2 Madison-like,
 1 tip); body sherds: 1 (cm/grit); rim sherds: 1 (Allegan
 Decorated Collared, var. Corded-punctate)
- SPS 78 128 - Mano: 1
- SPS 78 129 - Debitage: 21; core: 1; biface: 2 (rejects)
- SPS 78 130 - Debitage: 14; core: 1; biface: 2 (fragments)
- SPS 78 131 - Debitage: 50
- SPS 78 132 - Debitage: 123; cores: 4; uniface: 4; biface: 1 (corner-notched)
- SPS 78 133 - Debitage: 19
- SPS 78 134 - Debitage: 7
- SPS 78 135 - Debitage: 5
- SPS 78 136 - Debitage: 87; core: 1; uniface: 4; biface: 2 (1 cordiform, 1
 tip); mano: 1
- SPS 78 137 - Debitage: 6; cores: 3; wedge: 1; uniface: 1
- SPS 78 138 - Debitage: 2; wedge: 1
- SPS 78 139 - Debitage: 12
- SPS 78 140 - Debitage: 2
- SPS 78 141 - Debitage: 5; uniface: 1
- SPS 78 142 - Debitage: 30
- SPS 78 143 - Debitage: 25; cores: 2; biface: 1 (corner-notched)
- SPS 78 144 - Debitage: 27; wedge: 1

- SPS 78 145 - Debitage: 269; wedge: 1; uniface: 2; biface: 1 (fragment); shell: 1; bone: 10
- SPS 78 146 - Debitage: 34; cores: 2; wedge: 1; uniface: 3; biface: 4 (1 drill, 1 corner-notched, 2 rejects)
- SPS 78 147 - Debitage: 39; cores: 2; wedge: 1; uniface: 4; biface: 4 (2 corner-notched "bevels", 1 lanceolate unnotched, 1 fragment); mano: 1
- SPS 78 148 - Debitage: 14; cores: 2; uniface: 1; biface: 1 (preform(?))
- SPS 78 149 - Debitage: 30; cores: 11; uniface: 2
- SPS 78 150 - Debitage: 7; biface: 1 (bifacial scraper)
- SPS 78 151 - Debitage: 10; uniface: 1
- SPS 78 152 - Debitage: 21; cores: 3
- SPS 78 153 - Debitage: 17; biface: 1 (bifurcated base)
- SPS 78 154 - Debitage: 2; biface: 1 (side-notched); Kaolin Pipe fragment: 1
- SPS 78 155 - Debitage: 2; uniface: 1; biface: 1 (fragment)
- SPS 78 156 - Debitage: 14; shell: 2
- SPS 78 157 - Debitage: 118; cores: 6; wedge: 1; biface: 1 (fragment); ground stone sphere: 1
- SPS 78 158 - Debitage: 29; cores: 4; wedge: 1; uniface: 1; biface: 1 (bifacial scraper, spatulate)
- SPS 78 159 - Debitage: 124; core: 1; uniface: 1; biface: 2 (1 drill, 1 corner-notched); bone: 5; body sherds: 11 (9 cm/grit, 1 int/ext cm/grit, 1 sm/grit); rim sherds: 2 (1 Allegan Undecorated Collared, var. Fabric-impressed, 1 unidentifiable)
- SPS 78 160 - Debitage: 72; uniface: 2; biface: 1 (Madison base); body sherds: 3 (1 cm/grit, 2 unident./grit)
- SPS 78 161 - Debitage: 105; cores: 6; wedge: 1; uniface: 6; biface: 8 (1 drill, 2 fragments, 3 side-notched, 1 corner-notched, 1 tip)
- SPS 78 162 - Debitage: 5
- SPS 78 163 - Debitage: 1; uniface: 1; Kaolin Pipe fragment: 1
- SPS 78 164 - Debitage: 10; mano: 1
- SPS 78 165 - Debitage: 607; wedge: 3; uniface: 4; biface: 10 (2 fragments, 3 side-notched bases, 2 straight bases, 1 corner-notched, 1 tip, 1 straight stemmed); body sherds: 83 (60 cm/grit, 22 FI/grit, 1 possible zoned-incised); rim sherds: 1 (Allegan Undecorated Collared, var. Fabric-impressed)

- SPS 78 166 - Debitage: 413; core: 1; wedge: 2; uniface: 1; body sherds: 11 (cm/grit)
- SPS 78 167 - none (FCR scatter)
- SPS 78 168 - Debitage: 15; core: 1; wedge: 1; biface: 1 (Madison base); body sherds: 44 (25 cm/grit, 19 FI/grit); rim sherds: 2 (Allegan Undecorated Collared, var. Fabric-impressed)
- SPS 78 169 - Debitage: 35; core: 1; wedge: 1; biface: 2 (1 Madison-like, 1 reject); body sherds: 7 (cm/grit); shell: 3; ground slate: 1
- SPS 78 170 - Debitage: 18; cores: 2; uniface: 1; bone: 1; body sherds: 5 (cm/grit)
- SPS 78 171 - Debitage: 6
- SPS 78 172 - Debitage: 17; body sherds: 7 (cm/grit)
- SPS 78 173 - Debitage: 10; uniface: 1; body sherds: 6 (5 cm/grit, 1 temperless); rim sherds: 1 (Allegan Undecorated Collared, var. Cordmarked)
- SPS 78 174 - Debitage: 1; core: 1
- SPS 78 175 - Debitage: 2
- SPS 78 176 - Debitage: 69; core: 2; body sherds: 1 (cm/grit); Kaolin Pipe fragment: 1; square nail: 1
- SPS 78 177 - Debitage: 52
- SPS 78 178 - Debitage: 1; wedge: 1; bone: 1
- SPS 78 179 - Debitage: 52; wedge: 1; biface: 1 (corner-notched fragment); body sherds: 1 (cm/grit)
- SPS 78 180 - Debitage: 2
- SPS 78 181 - Debitage: 2; core: 1
- SPS 78 182 - Debitage: 22; uniface: 5; biface: 2 (1 Adena-like, 1 fragment)
- SPS 78 183 - Debitage: 7; uniface: 2; biface: 1 (fragment); body sherds: 1 (cm/grit)
- SPS 78 184 - Debitage: 13; wedge: 1; body sherds: 2 (cm/grit)
- SPS 78 185 - Debitage: 58; uniface: 1
- SPS 78 186 - Debitage: 31; cores: 2; shell: 1
- SPS 78 187 - Debitage: 72; cores: 3; wedge: 1
- SPS 78 188 - Debitage: 5; biface: 1 (reject)
- SPS 78 189 - Debitage: 4

SPS 78 190 - Debitage: 69; core: 3

SPS 78 191 - Debitage: 200; cores: 2; wedge: 1; uniface: 1; biface:
1 (reject)

SPS 78 192 - Debitage: 54; cores: 4

SPS 78 193 - Debitage: 32; bone: 5

SPS 78 194 - Debitage: 5; body sherds: 2 (cm/grit)

SPS 78 195 - Debitage: 5; uniface: 1

SPS 78 196 - Debitage: 17; uniface: 2

SPS 78 197 - Debitage: 16; cores: 2; uniface: 1; biface: 1 (tip)

SPS 78 198 - Debitage: 2

SPS 78 199 - Debitage: 2

SPS 78 200 - Debitage: 10; biface: 1 (fragment)

SPS 78 201 - Debitage: 13; cores: 2; uniface: 1

SPS 78 202 - Debitage: 11

SPS 78 203 - Debitage: 19; uniface: 1

SPS 78 204 - cores: 2

SPS 78 205 - Debitage: 29; uniface: 1

SPS 78 206 - Debitage: 14

SPS 78 207 - Biface: 1 (tip)

SPS 78 208 - Debitage: 31; biface: 1 (bifurcated base)

SPS 78 209 - Debitage: 54; uniface: 1

SPS 78 210 - Debitage: 6; core: 1

SPS 78 211 - none (not recollected)

SPS 78 212 - none (not recollected)

SPSO 78 1 - Debitage: 84; uniface: 2; mano: 1

SPSO 78 2 - Debitage: 70; cores: 2; uniface: 2; biface: 1 (side-notched)

SPSO 78 3 - none (FCR scatter)

SPSO 78 4 - Debitage: 83; biface: 2 (fragments)

- SPSO 78 5 - Debitage: 17
- SPSO 78 6 - Debitage: 59; core: 1; wedge: 2; uniface: 1; biface: 1 (side-notched); drilled stone: 1; body sherds: 1 (cm/grit)
- SPSO 78 7 - Debitage: 210; cores: 29; wedges: 8; uniface: 18; biface: 8 (fragments); chipped stone quadruped effigy: 1 (probably fake); body sherds: 4 (cm/grit); Kaolin Pipe fragment: 1
- SPSO 78 8 - Debitage: 51; core: 1; biface: 2 (side-notched); body sherds: 2 (cm/grit)
- SPSO 78 9 - Debitage: 28; body sherds: 5 (1 cm/grit/incised, 4 cm/grit); uniface: 1
- SPSO 78 10 - Debitage: 76; wedge: 2; uniface: 1; body sherds: 4 (cm/grit); bottle fragments (same bottle): 18; decorated historic ceramic: 3; crockery: 1; white china: 1
- SPSO 78 11 - Debitage: 36; core: 1; uniface: 1; bone: 5; body sherd: 1 (unident/grit)
- SPSO 78 12 - Debitage: 158; cores: 9; wedge: 1; uniface: 8; biface: 9 (1 Clovis-like base, 1 Adena-like base, 2 side-notched/expanding stemmed, 1 large unnotched lanceolate, 4 fragments); mano: 2; nutting stone: 1
- SPSO 78 13 - Debitage: 37; core: 1; wedge: 1; bone: 2
- SPSO 78 14 - Debitage: 2
- SPSO 78 15 - Debitage: 213; cores: 8; wedge: 6; uniface: 10; biface: 11 (2 corner-notched, 2 unnotched long triangular, 1 side-notched, 1 bifacial scraper, 5 fragments); hammer stone: 3; mano: 2; nutting stone: 1
- SPSO 78 16 - Debitage: 12; ground slate: 1; "chopper": 1; nutting stone: 1
- SPSO 78 17 - Debitage: 31; uniface: 1; body sherd: 1 (cm/grit); Kaolin Pipe stem: 1
- SPSO 78 18 - Debitage: 58
- SPSO 78 19 - Debitage: 11
- SPSO 78 20 - Debitage: 37; biface: 2 (side-notched, one with beveled blade); body sherds: 2 (cm/grit)
- SPSO 78 21 - Debitage: 60; core: 1
- SPSO 78 22 - Debitage: 20; body sherds: 8 (unident/grit)
- SPSO 78 23 - Debitage: 35; uniface: 2
- SPS 78 64 - (Portion of site located outside sampling unit).
Debitage: 250; cores: 20; wedge: 6; uniface: 8; biface: 11 (1 Clovis, 1 drill, 2 unnotched long triangular, 2 side-notched, 1 unnotched base, 4 fragments); bone: 1; ground stone disk: 1; mano: 5; body sherds: 1 (cm/grit)

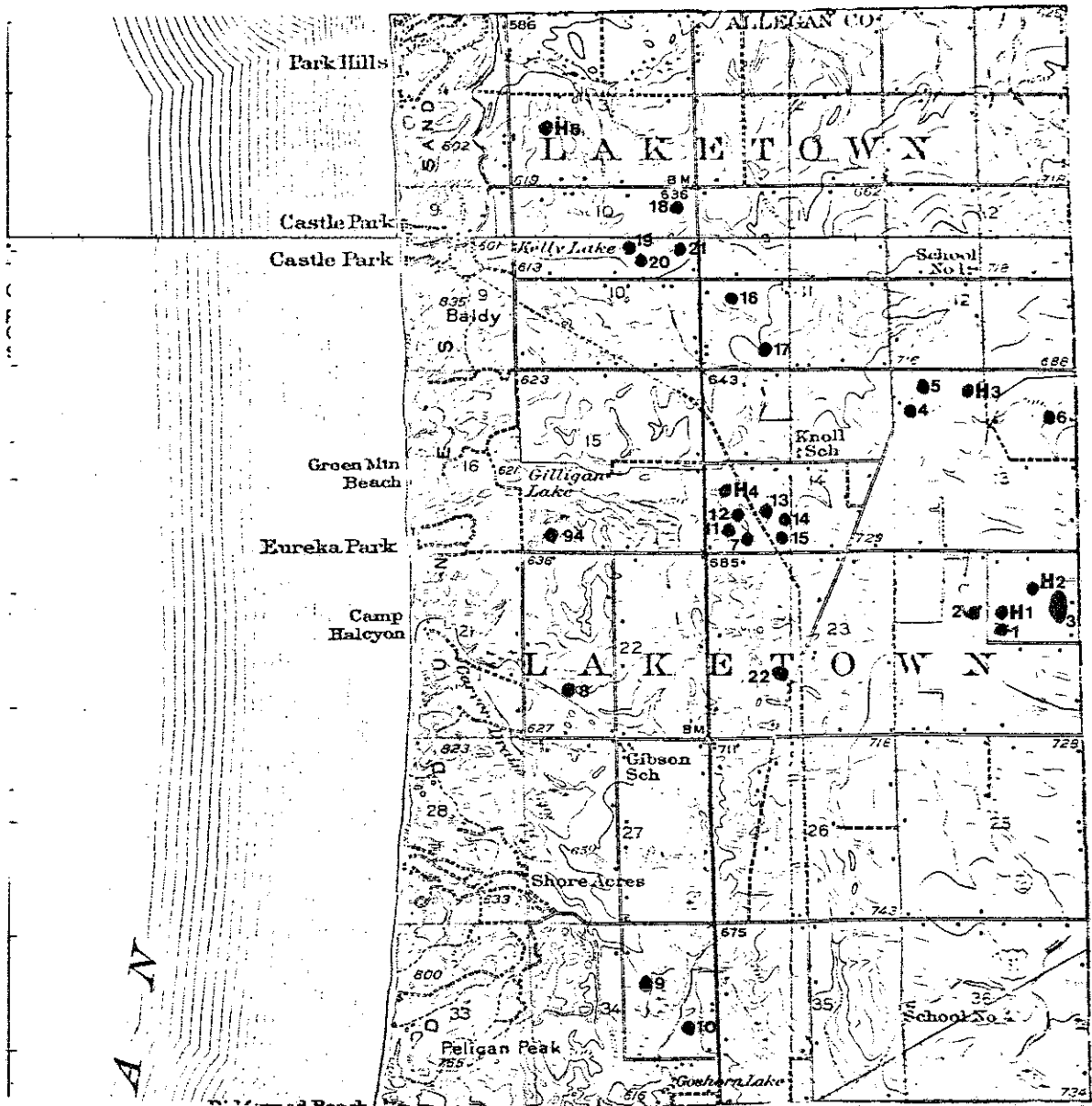
Historic Sites

- SPSH 78 1 - Ceramics: Ironstone: 1; Banded Ware: 2; Old Blue: 1
- SPSH 78 2 - Ceramics: Yellow Ware: 1; Stoneware: 3; Gaudy Dutch: 1; Pearl Ware: 1; Blue Shell Edge Pearl Ware: 4
- SPSH 78 3 - Ceramics: Blue Shell Edge Pearl Ware: 1; Green Stipple Transfer Print: 1; Blue Transfer Print: 1; Blue Transfer Print Pearl Ware: 2; Gaudy Dutch: 1; Blue Banded Ware: 1; Ironstone: 41; Glazed Stoneware: 4; Porcelain figurine: 1; Hand painted Porcelain: 2; Plain Porcelain: 10; Molded Pattern: 1
Glass: Embossed: 1; Milk glass: 4; Mason jar: 2; bottle glass: 7
Kaolin pipe fragment: 1
- SPSH 78 4 - Ceramics: Stoneware: 5; Blue Banded Porcelain: 3; Green Stipple Transfer Print: 1; Unidentified: 4
Glass: Cod Liver Oil bottle: 1; Medicine Bottle: 1; Bottle Bases: 2; Bottle neck: 1; Jar: 1; Milk Glass: 1; purple glass: 3
- SPSH 78 5 - Ceramics: Child's Plate (Ironstone): 1; Porcelain Bead: 1; Patterned Medicine Bottle: 1; Perfume Bottle: 1
- SPSH 78 6 - Ceramics: Ironstone: 1; Yellow Glazed Stoneware: 3. Kaolin Pipe fragments: 2; bone: 2
- SPSH 78 7 - Kaolin Pipe Fragment: 1

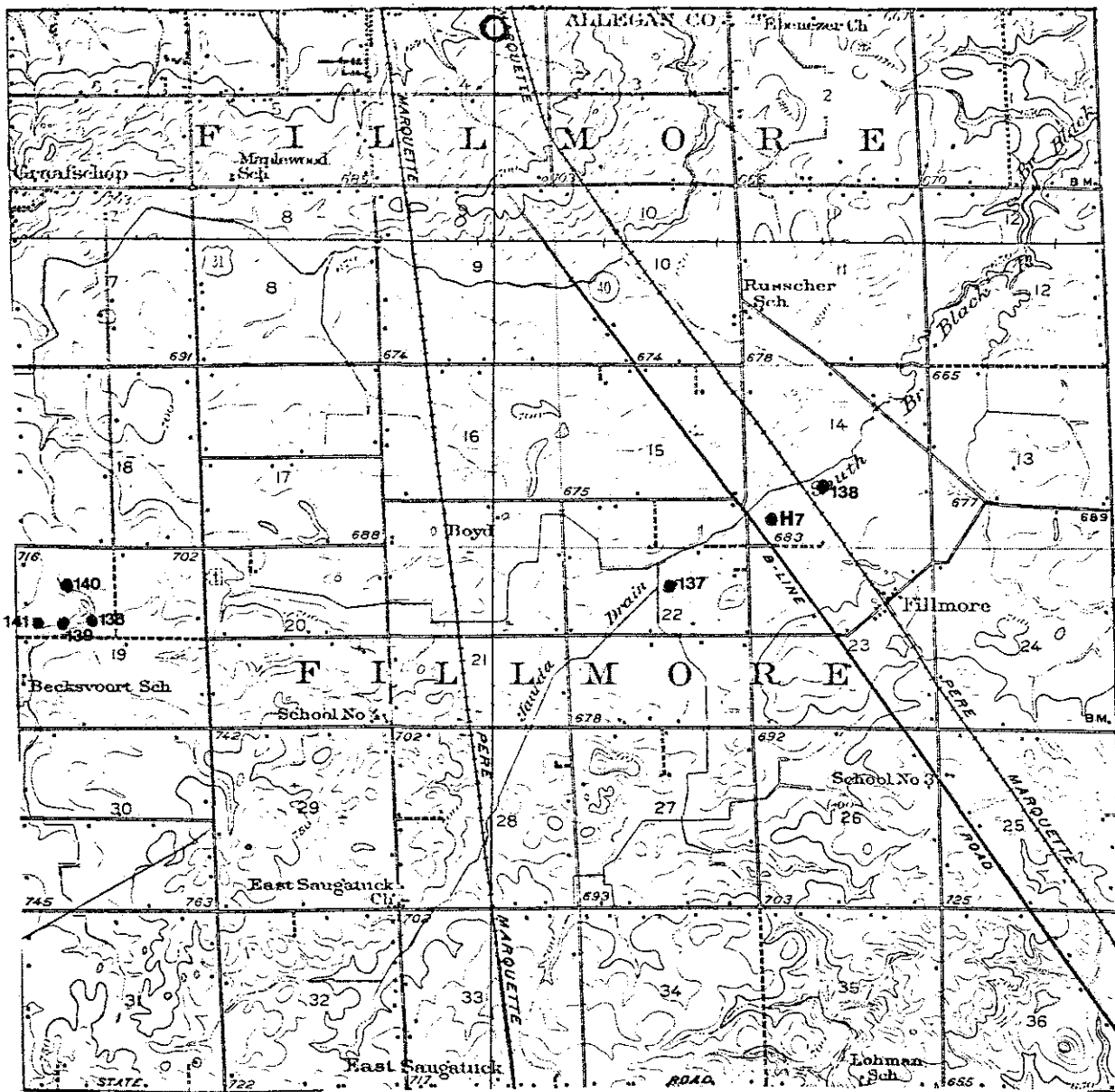
5. Maps Showing Location of All Sites in the Survey Area

Maps 2-6 provide locations of all sites within our sampling units, by townships.

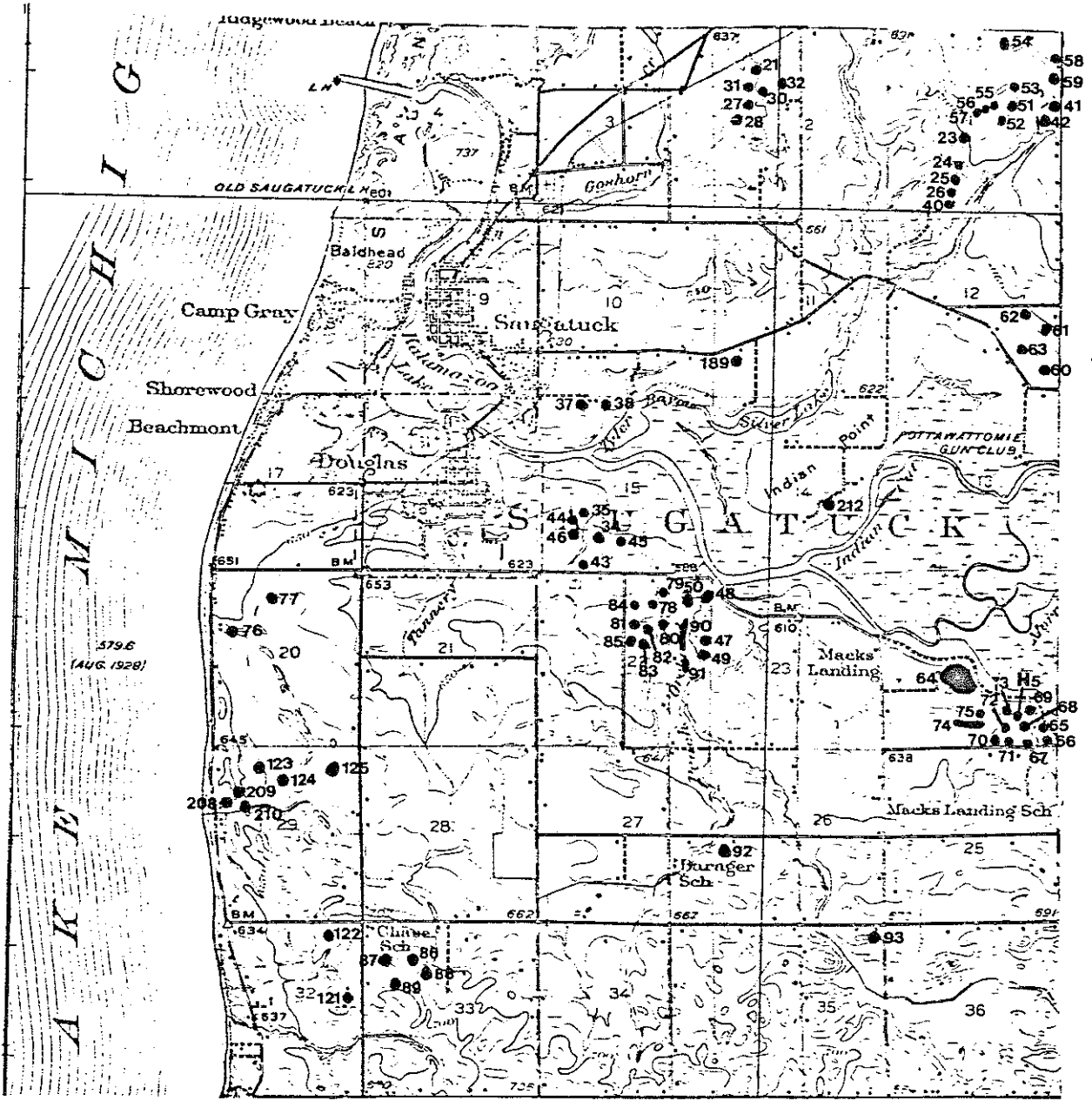
Maps 7-12 record sites outside of the sampling units, also by township. This set of maps includes all previously recorded sites as well as "out" sites visited by the 1978 survey.



Map 2. Laketown Township; sites within sampling units, identified by SPS number ("H" indicates historic site).



Map 3. Fillmore Township; sites within sampling units, identified by SPS number ("H" indicates historic site).



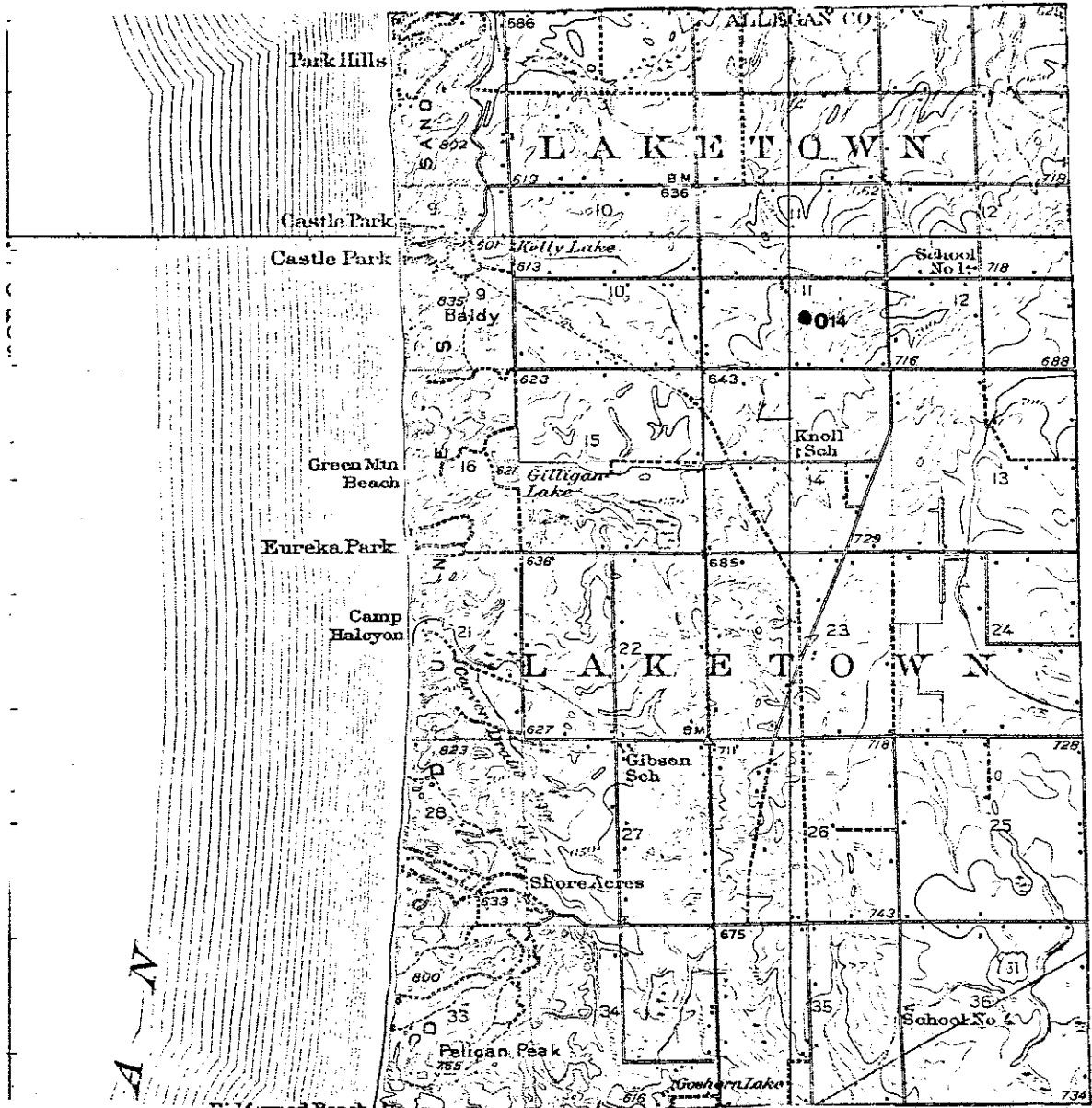
Map 4. Saugatuck Township; sites within sampling units, identified by SPS number ("H" indicates historic site).



Map 5. Manlius Township; sites within sampling units, identified by SPS number.

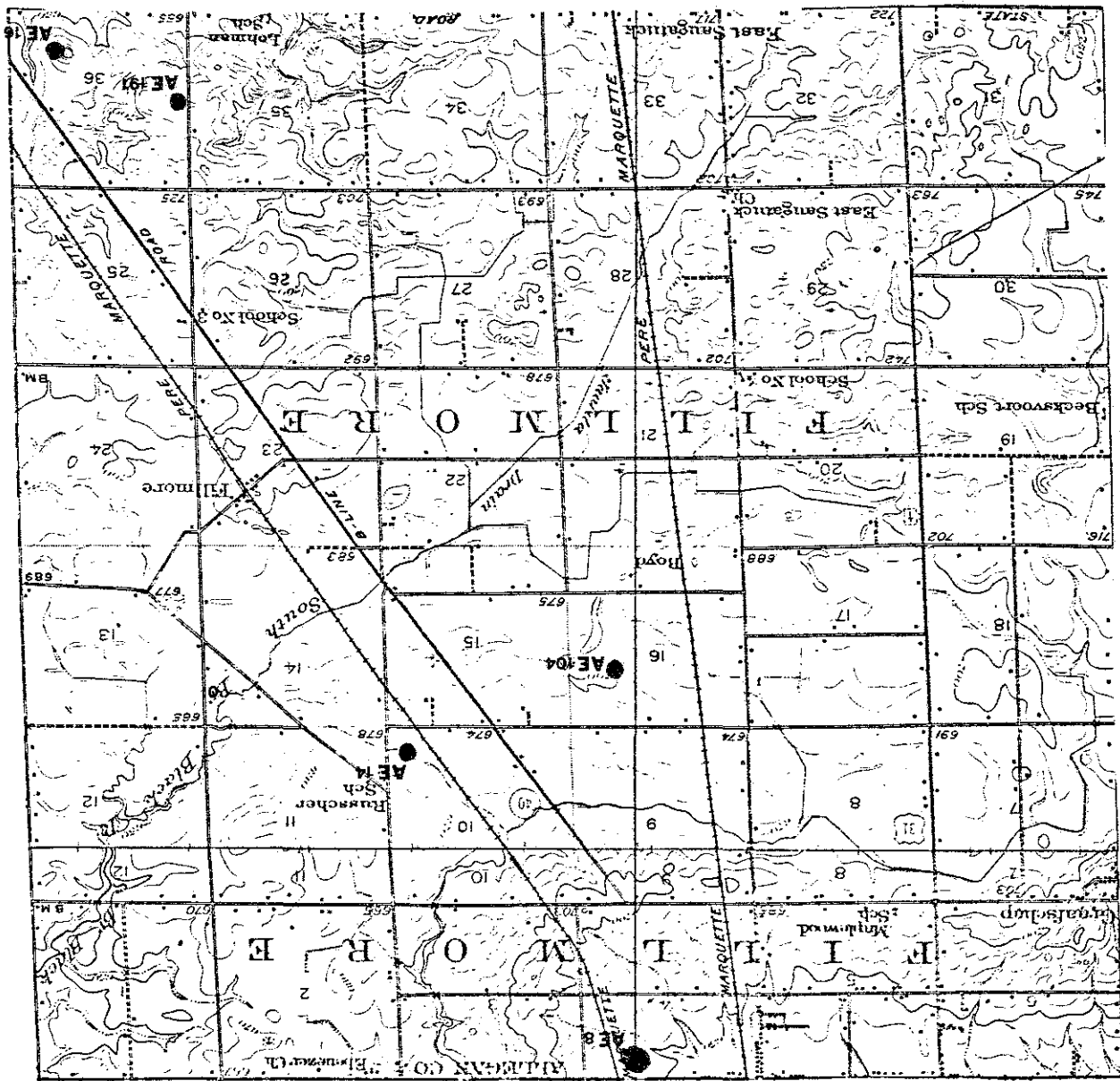


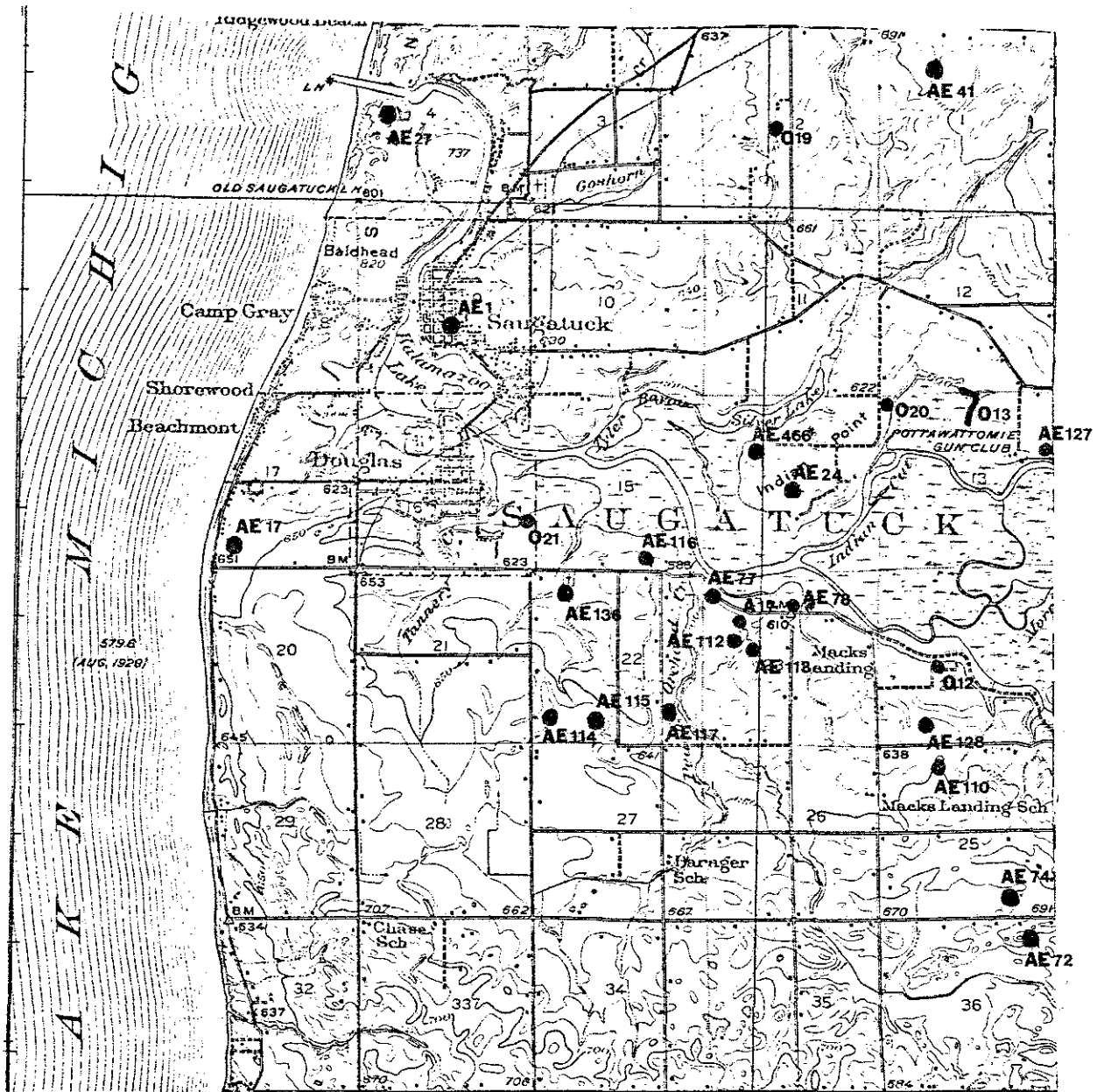
Map 6. Ganges Township; sites within sampling units, identified by SPS number.



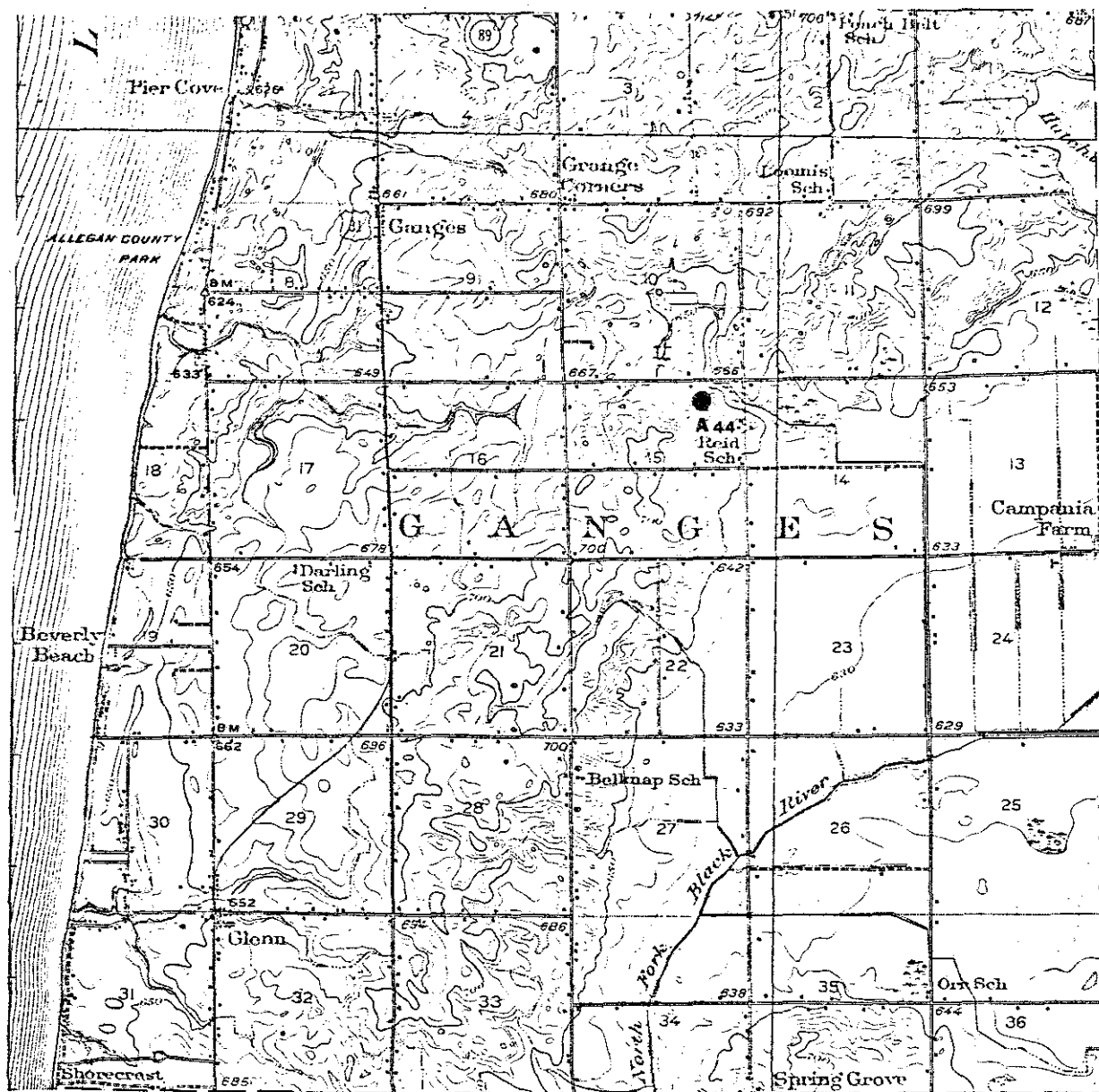
Map 7. Laketown Township; sites outside sampling units. ("0" indicates site visited/recorded by 1978 survey).

Map 8. Fillmore Township; sites outside sampling units. ("AE" indicates state site number).





Map 9. Saugatuck Township; sites outside sampling units. ("O" indicates site visited/recorded by 1978 survey; "AE" indicates state site number). "A 17" in NW $\frac{1}{4}$ of Sec. 23 is 20 AE 617.



Map 11. Ganges Township; sites outside sampling units.
 "A 44" is 20 AE 96.

6. Interpretations and Conclusions, Computer Analysis, Site Densities and Associations

The 1978 SPS survey did not discover any agricultural villages, nor did we expect to. No such sites, nor any evidence of cultigens, has been found to date in the Lower Kalamazoo or elsewhere in Allegan County. While it is possible that during the Late Woodland period some groups who were in our area seasonally were practicing horticulture elsewhere (this is especially likely for Upper Mississippian groups), we are quite certain that while in our area they were engaged in hunting/fishing/gathering activities. Thus the sites we are dealing with are frequently quite small, and they reflect the activities of food collectors in a highly diversified environment.

Our objectives are to determine settlement patterns, i.e. the geographic relationships of sites within a single culture, and ultimately to reconstruct the settlement system, the functional relationships among sites within a single culture (Winters 1969:110). We are convinced that in order to reconstruct changing settlement systems through time in an area like ours that intensive survey techniques are required. As a first step, one must be able to place sites, or a significant percentage of them, in a cultural/chronological framework. Following this, test excavation must be done to acquire the seasonality/activity data required for more fine-grained settlement system analysis. We feel that the 1978 SPS survey has been a good first step.

The 1978 SPS survey recorded a total of 242 sites, all but one of which (SPSO 78 7) were actually visited by a survey team. Informant information was always recorded on a survey form, but informant sites are not included in this analysis unless actually visited. The break down by

site type is as follows.

Isolated find	26	
Scatter	169	
"Component"	40	
	<u>235</u>	Total prehistoric sites
	7	Historic sites
	<u>242</u>	Total sites recorded

Of the total prehistoric sites recorded, 18 were previously known (14 in the randomly sampled units; 4 outside of the sampling units). The survey recorded 198 new sites in the sampling units; 19 new sites were found outside of the sampling units.

The term "component" is used above and in the site descriptions (Section 3) to refer in most instances to a fairly large site with a high density of cultural material; a few sites with an extensive but rather sparse distribution are also described as components. Some of these sites are in fact multi-component in the standard archaeological usage of that term. Therefore, in assessing the cultural affiliations of the occupations on sites recorded by the survey, the total is greater than the total number of sites.

Cultural Affiliations of Components (Occupations)

from all sites recorded by the SPS 78 survey

Paleo-Indian	3	
Early Archaic	5	
Late Archaic	25	
Unidentified Archaic	26	
Late Woodland (Late Allegan Phase)	8	
Unidentified Woodland	36	
Mississippian	1	
Historic	17	
Undetermined	<u>139</u>	
	260	Total components
	243	Total prehistoric

Of the 243 prehistoric components, 104 (43%) are identified, 139 (57%) are unidentifiable as to cultural affiliation. The basis on which cultural affiliation was established requires clarification. For the sites identified

as Archaic all are supported by biface typology except for the following:

SPS 78 27, Saugatuck, Sec. 2, blow out/swamp location.

Gorgets reported in Valleau collection from site; informant considered reliable.

SPS 78 166, Manlius, Sec. 7, blow out.

Judgment based on presence of similar Archaic sites in unit and area.

Lithic scatters with non-diagnostic artifacts were simply recorded as unidentified. If Early and Middle Woodland sites were more common on the Lower Kalamazoo (they are very rare) then Archaic placement of a ceramic sites based upon biface typology alone might be subject to perhaps significant error. Distinguishing Archaic lithic tools from Late Woodland lithics is less difficult, although mis-identifications, particularly with small amounts of cultural material, can of course occur. Overall we have been reasonably conservative in assigning Archaic placement. It should be noted that five of the Archaic sites on Maps 12 and 13 are isolated finds, these are SPS 78 18, 105, 122, 154, and 207.

Within the Archaic, Late Archaic placement is based principally on the presence of various types of projectile points assigned to this period by Ritchie (1961).

Our designation of 5 sites as Early Archaic is based on the presence of a single bifurcate-base point (Fig. 1) at each site. One is an isolated find (SPS 78 122). None can be said to be "classic" Early Archaic types but two are Le Croy-like (Fig. 1, A&B; Bell 1970:32) and one bears some resemblance to Kanawha Stemmed (Fig. 1, C; Broyles 1971:58). The other two points (Fig. 1, D&E) are not closely similar to Early Archaic types known to us, but are included because of the distinctive basal treatment.

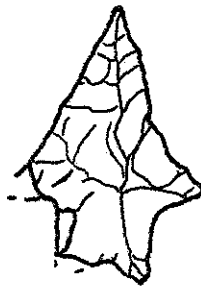
Evidence of Paleo-Indian in the survey area is limited to 3 points (Fig. 2). SPS 78 12 is near the large multi-component Johnson site



A



B



C



D

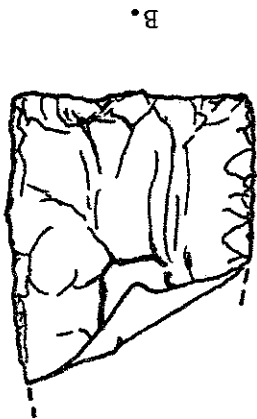
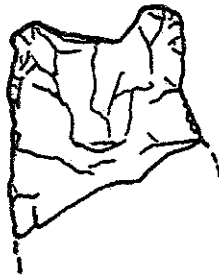


E

BIFURCATE BASE POINTS

- A. SPS 78 517 (20 AE 517)
- B. SPS 78 122 (20 AE 513)
- C. SPS 78 208 (20 AE 593) stem is laterally ground
- D. SPS 78 153 (20 AE 98)
- E. SPS 78 64 (20 AE 120)

- A. SPS 78 64 (20 AE 109)
- B. SPS 78 12 (20 AE 76)
- C. SPS 78 42 (20 AE 436)



(The Johnson Clovis point is from the "out" part of this site, i.e. Dyker, AE10 (SPS 78 611), and recovery of one Clovis point from each site suggests that further work in this area might be rewarding. The other Paleo-Indian artifact is a Hi-Lo point from SPS 78 42.

Identification of Woodland period sites is based on the presence of ceramics in all but two cases:

SPS 78 34, Saugatuck, Sec. 15, south of Kalamazoo River.

Judgment based on presence of notched net sinker & close proximity to other Woodland sites.

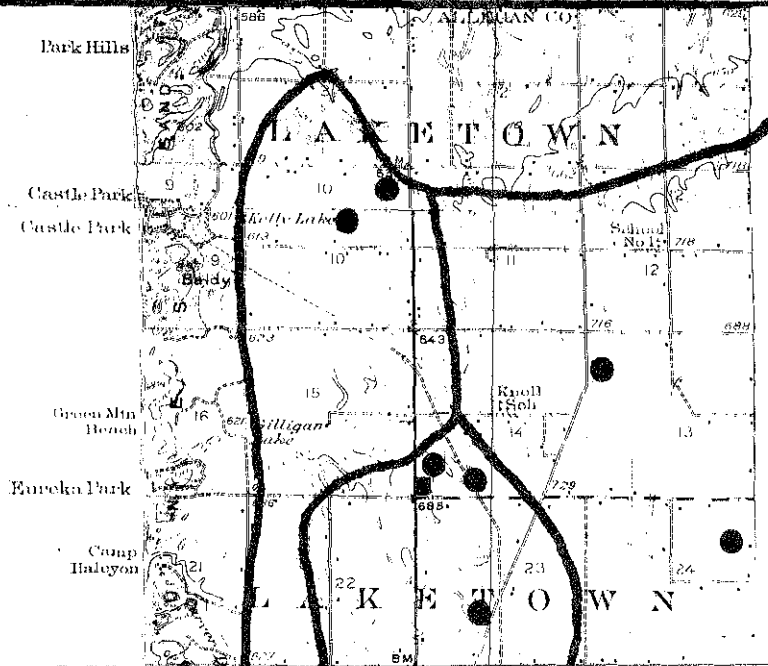
SPS 78 109, Manlius, Sec. 18.

Judgment based on probable relationship to known Woodland site, Nordhof (SPS 78 211), which lies 200 yds. to the east. This site is at bluff base.

Most of the Unidentified Woodland sites in the survey area probably belong to the Late Woodland; at least no demonstrably earlier ceramics were noted. It is likely that some of this pottery is Early Allegan phase, particularly in view of the large Early Allegan component at the Hacklander site (Kingsley 1977). However, change within the Allegan tradition is largely seen in shifting frequencies of attributes within a notably conservative tradition. Thus it is often difficult to "phase" Allegan tradition sites, especially with only small samples of ceramics. The clearest ceramic innovation, and one that most readily defines the Late Allegan phase, is collaring. The identification of 8 Late Allegan phase sites is thus largely based on the presence of collared ceramics.

The single Mississippian site is the previously known Nordhof site (SPS 78 211) where shell tempered ceramics have been previously identified.

Map 12 shows the location of all known sites within 4 townships of the 1978 survey area which can be identified as either Woodland or Archaic. A few verified sites which were not visited by the 1978 survey are included. Fillmore township is not included because survey was only begun here and only 1 (Woodland) site is identifiable in the township. We show all known



SOIL ASSOCIATIONS

- 1 BLOUNT-MORLEY
- 3 OAKVILLE-SPINKS-OSHTEMO
- 4 KALAMAZOO-OSHTEMO
- 7 OAKVILLE
- 8 ADRIAN-HOUGHTON

Table 12

Description of Soil Associations in the Survey Area

(Primary Sources: Map of Soil Associations, Kalamazoo, Black, Mactawa and Paw Paw Rivers Basin, USDA, 1976

Native species & woodland suitability data from
Soil Survey of Ottawa County, Michigan, USDA, 1972:81-86.)

- (1) Blount-Morley Association. Medium textured soils that lie on nearly level to gently sloping topography; developed in predominantly clay, clay loam and silty clay glacial till. Internal drainage varies but all have low permeability rates. Native species for Blount soils are white oak, red oak, basswood, soft maple, white ash and cottonwood; for Morley soils, sugar maple, red oak, basswood, black cherry, and black walnut. Potential productivity for Blount soils is low to medium for oak and mixed hardwoods; for Morley soils productivity is very high for mixed hardwoods, high for oak.
- (3) Oakville-Spinks-Oshtemo Association. Coarse textured soils of the "pine plains". These soils occur on nearly level to steep topography; developed in sand, sandy loam, and stratified sand and gravel. They are well drained with high permeability. For Spinks soils native species are white pine, red oak, white oak, aspen and beech. Potential productivity is high to very high for pine, medium for oak, and low to medium for mixed hardwoods. For Oshtemo soils native soils are oak, sugar maple, basswood and beech; potential productivity is low to medium for oak and mixed hardwoods, and medium to high for pine.
- (4) Kalamazoo-Oshtemo Association. Coarse textured soils on level to gently rolling topography; developed in sandy clay loam, sandy loam, and clay loam overlying stratified sand and gravel. Well drained, with medium to high permeability. For Oshtemo soils native species are oak, sugar maple, basswood and beech. Potential productivity is low to medium for oak and mixed hardwoods and medium to high for pine. In the Middle Kalamazoo Valley climax oak-hickory forest occurs on Kalamazoo-Oshtemo soils, together with black walnut ash and poplar; potential productivity of these soils is reported to be very high (Cremin and Marek 1978:15).
- (7) Oakville Association. Coarse textured soils lying on steep topography; developed in sand or loamy sand dunes and outwash material. Well drained soils. Beech, maple and hemlock are adapted native forest species along the Lake Michigan shoreline (Neusius 1978:13). Beech may occur on outwash and other poor soils near Lake Michigan because of increased humidity (pers. comm., Ted Piwovar, Allegan Co. Soil Conservation Office).

- (8) Adrian-Houghton Association. Organic soils developed on muck over peat. They are level to depressional soils with very poor drainage; the water table is at or near surface most of the year. Native species are soft maple, white cedar and willow.
- (11) Granby-Au Gres Association. Coarse textured soils developed in deep outwash sands. They are level to depressional and poorly drained. Native species for Granby soils are soft maple, white ash, pin oak, white birch. Potential productivity is low to very low for mixed hardwoods. Native species for Au Gres soils are aspen, soft maple, white pine, white birch, and pin oak; productivity is very low for oak and mixed hardwoods.

sites rather than the randomly drawn sample (although this would not significantly alter observed patterns of distribution) in order to maximize frequencies. 112 components, 56 Woodland and 56 Archaic, are shown on Map 12 in these 4 townships; the sampled units contain 87 identified components.

For purposes of this report we do not intend to enter into rigorous analysis of the randomly drawn sample. At the present writing these data have been entered into the PDP-10 computer at Western Michigan University where they are currently undergoing analysis by Deborah Rhead who is preparing her Master's thesis on the 1978 SPS results. A copy of this thesis, and any other reports or papers based on these data, will be forwarded to the Michigan History Division.

The following observations, based upon examination of Map 12, are among the correlations and hypotheses which will be tested in the course of Rhead's analysis.

There is definite indication of a change in settlement pattern from the Archaic to the Woodland period. The majority of Archaic sites are found on tributary streams ^{or} and near upland swamps. Some of these sites are large and may reflect upland winter population aggregations. A smaller proportion of the Archaic sites are located on the bluffs of the Kalamazoo and Rabbit rivers. In the Woodland period there is a very strong correlation of sites with riverine and riverine swamp locations along the Kalamazoo, while upland off-river sites are less numerous. An intriguing exception to this the strong cluster of Woodland sites northwest of New Richmond associated with soil group 4 and adjacent #1 soils. While most of these Woodland sites are within 1/2 to 1 mile of the river, their location is definitely not riverine. It may be that relatively rich forest resources related to the Kalamazoo-Oshtemo and Morley soils (see Table 12), including

several nut bearing species of trees, are significant in the observed site distribution. When the Allegan County soil survey is completed more detailed analysis along these lines will be possible, in conjunction with further testing of sites.

Low site densities in southeast and eastern Ganges township reflect the presence of the poorly drained muck soils (#8) and doubtless also are related to distance from the main river system. Similar sparse site distribution is observed to the north in Laketown township, and here distance from the river would appear to be ^{the variable;} ~~Primary~~ correlations with soils in Laketown are of less significance. This suggests that in general the Woodland people were hunting and gathering in off-river locations only at convenient distances from the river, which in turn implies that there was little population pressure on resources.

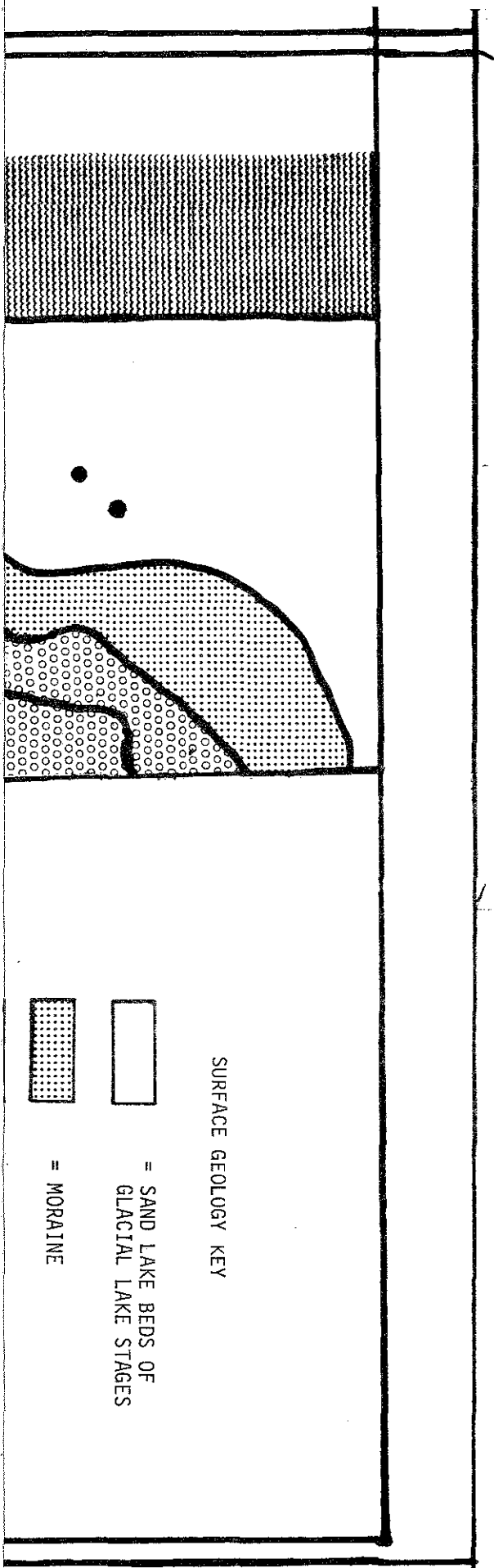
Another observation that is quite striking is the near absence of identified sites on the pine plains (#3 soils) ^{north & south of the Kalamazoo River,} ~~The~~ oak-pine forests here would have had few resources to offer the prehistoric inhabitants, and virtually all sites here are riverine oriented (see also Maps 5 and 10). In general the some 130 unidentified sites in these 4 townships seem to exhibit the same distributional and density patterns as the identified sites. It is hoped that interpolation of these small sites into probabilistic statements about settlement patterns will emerge from Rhead's analysis.

Perhaps the most striking single observation about Map 12 is the "pull" of the major river system as a determinant of site location. When establishing our sampling design we were cognizant of an intensive riverine orientation based upon 1973 (Garland) and 1976 (Cremin) survey data. We believed that stratification by township was the best way to sample, as long as the random sample was itself large enough. Although analysis is far from complete at this writing, we think that the empirical results of our survey indicate that our sampling design was an effective one.

Map 13 shows the same site distribution as Map 12 plotted in relation to surface geology (Martin 1957). Certain kinds of soil development are correlated with these diverse geological formations, hence the observed similarities between the two maps. Generally, the moraines north & south of the Kalamazoo Valley correspond with soil associations #1 and #4, and the interior lake bed formations with soil associations #1 and #8. Looking at site distributions compared to 4 geological formations produces for the most part a more generalized set of relationships than does the soils map with 7 associations. There are exceptions however. For example the correlation of some off-river sites northwest of New Richmond looks stronger in relation to differing moraine formations than to soil group variables. Also the moraine-edge location of the 3 sites in southeastern Ganges Twp. is clearer on the geological map than on the soils map. These correlations may prove to be useful in interpreting the complete data set from the sampling units in later stages of analysis.

Considerable care and attention was given to careful site recording and description during this survey. The quality of the data recorded is obviously essential to meaningful analysis. Maps 14-17 are included in this report to illustrate the kinds of site relationships recorded in the field in sampling units where high site densities were recorded. These ink drawings were recopied in essentially unmodified form from field sketches showing sites by survey number (SPS 78 omitted). These maps should be examined in conjunction with the site descriptions in Section 3. Site forms for each individual site were routinely filled out. Also included here is a sketch of The Great Big Site (SPS 78 126) showing collection areas (Map 18).

Another aspect of survey which we deemed essential to attaining meaningful results was adequate coverage of the quarter-sections selected for



SURFACE GEOLOGY KEY



= SAND LAKE BEDS OF
GLACIAL LAKE STAGES

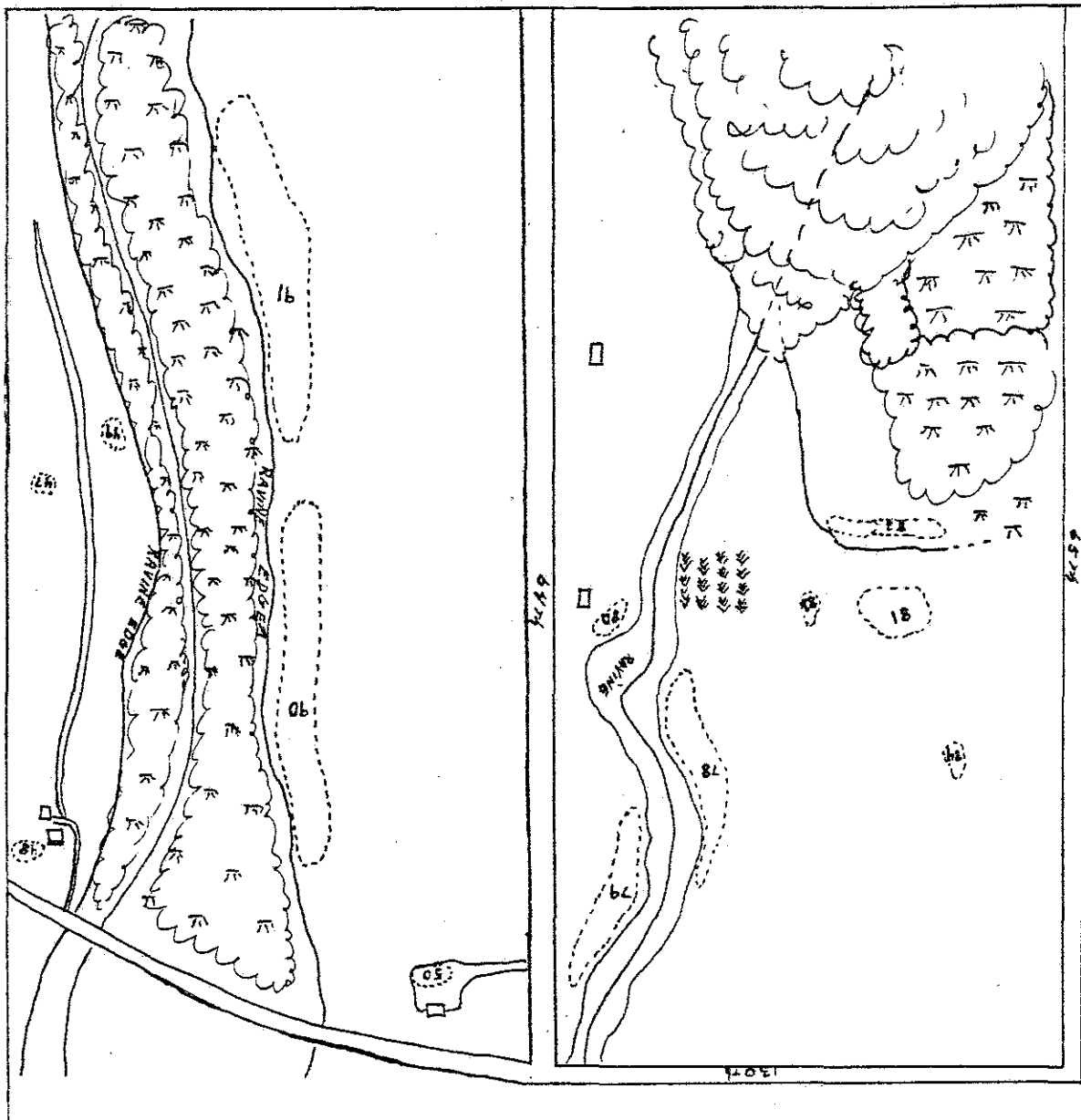


= MORaine

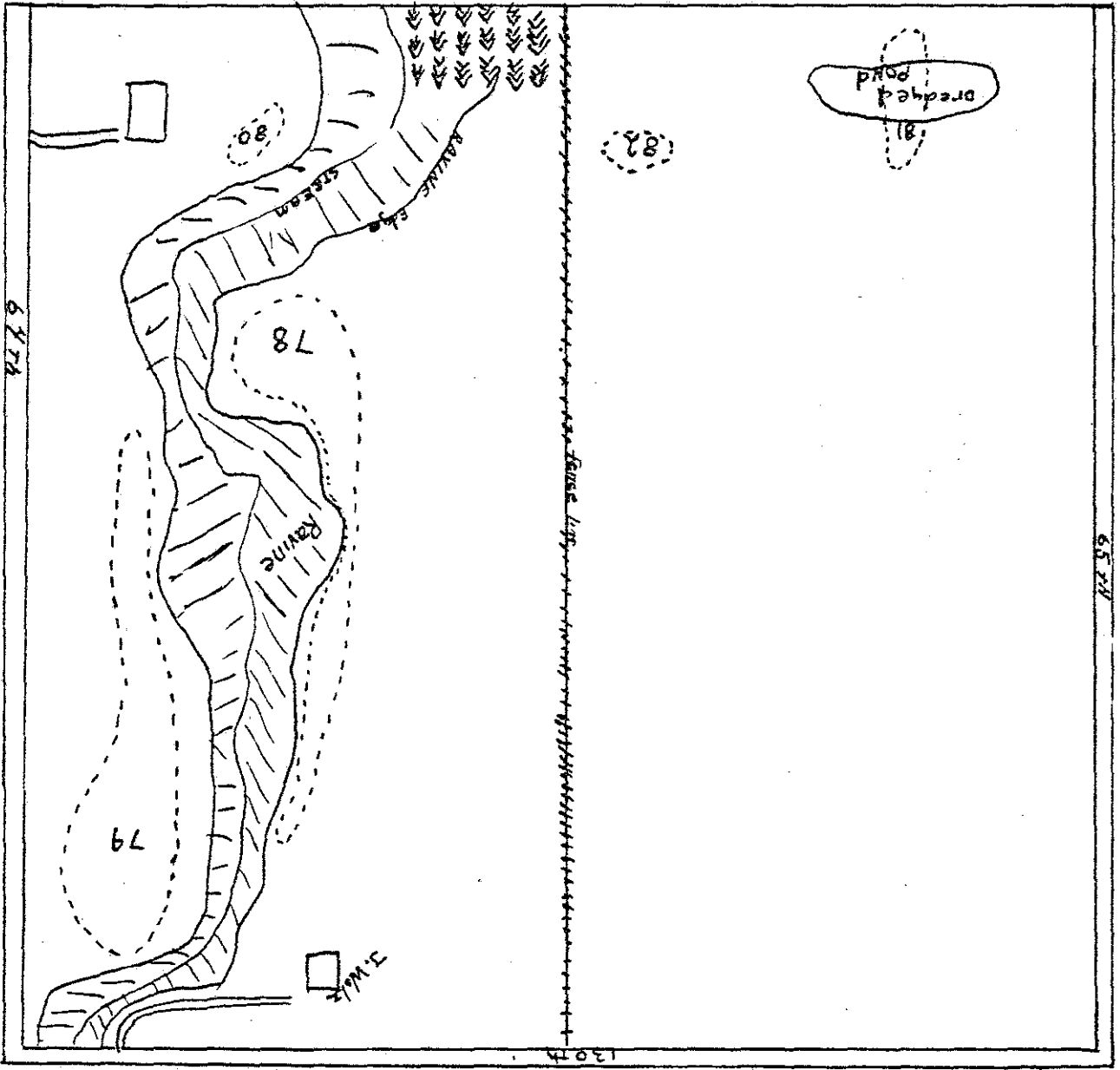
NE 1/4 of Section 22 - Saugatuck Twp.

○ = site

↑ N

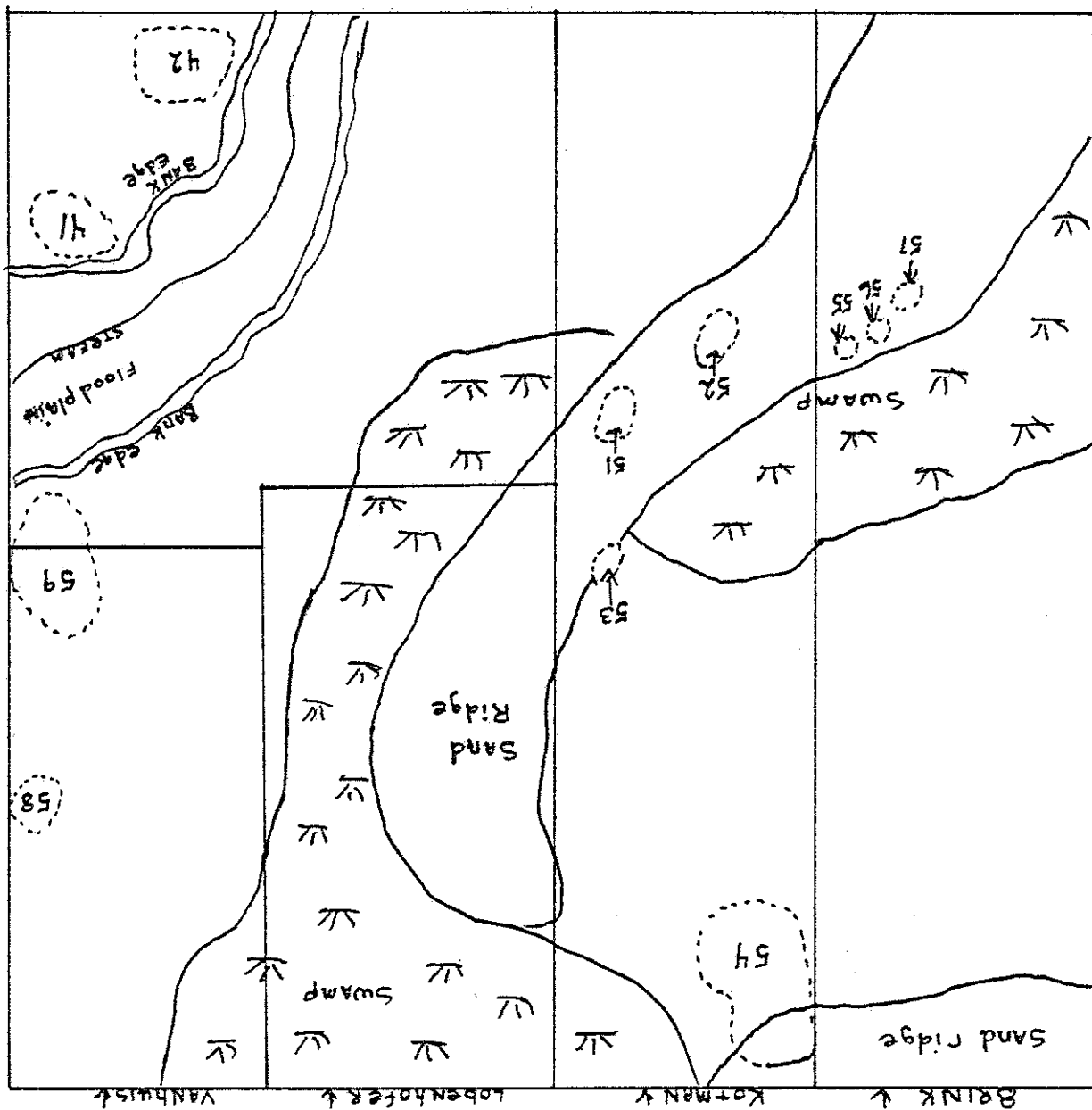


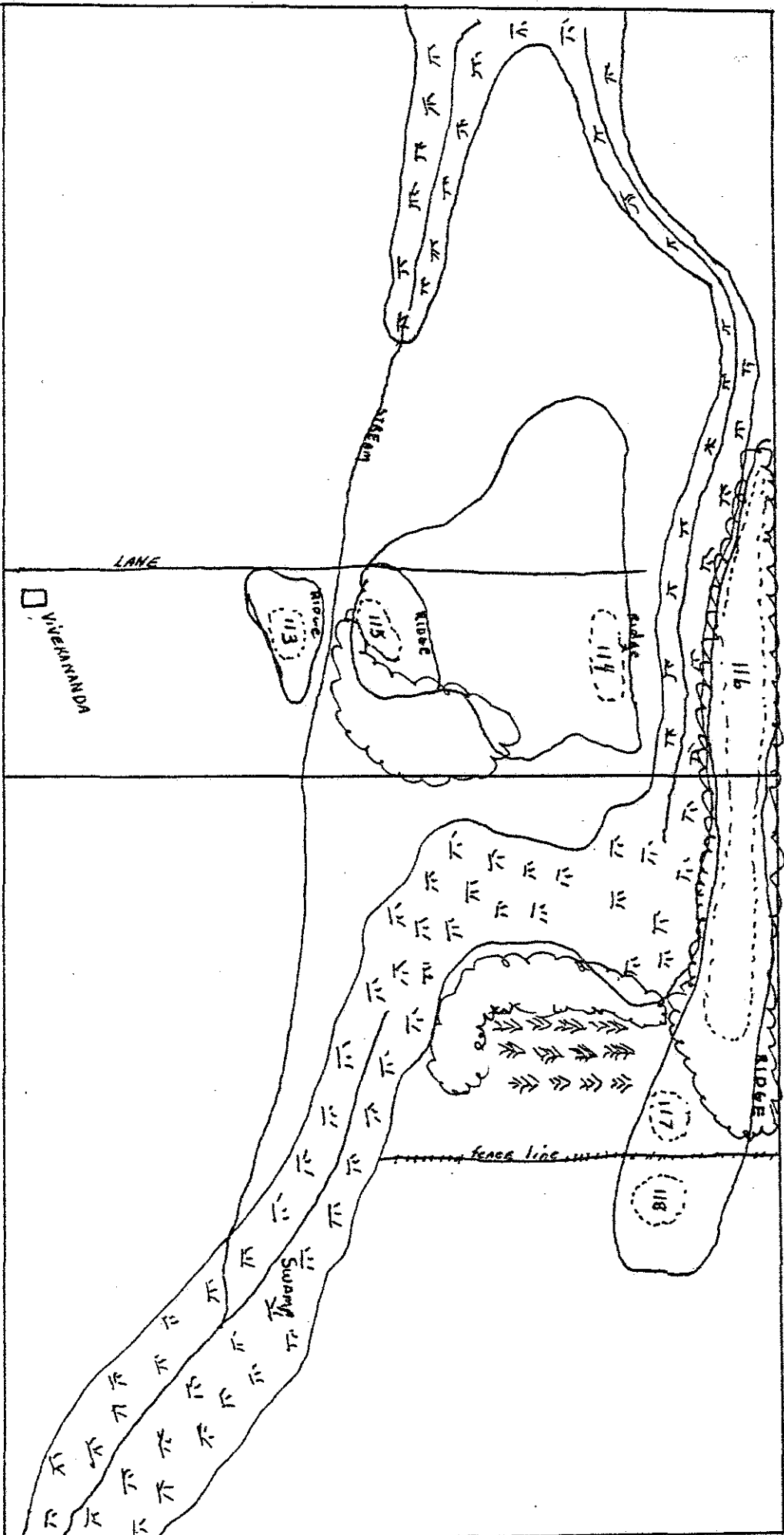
Map 14



NW 1/4 of NE 1/4 Section 22
 SAUGATUCK ↓ N
 See also map on SPS-81
 Map 15

Section 1, NE 1/4 Saugatuck Twp
↓ N = Site



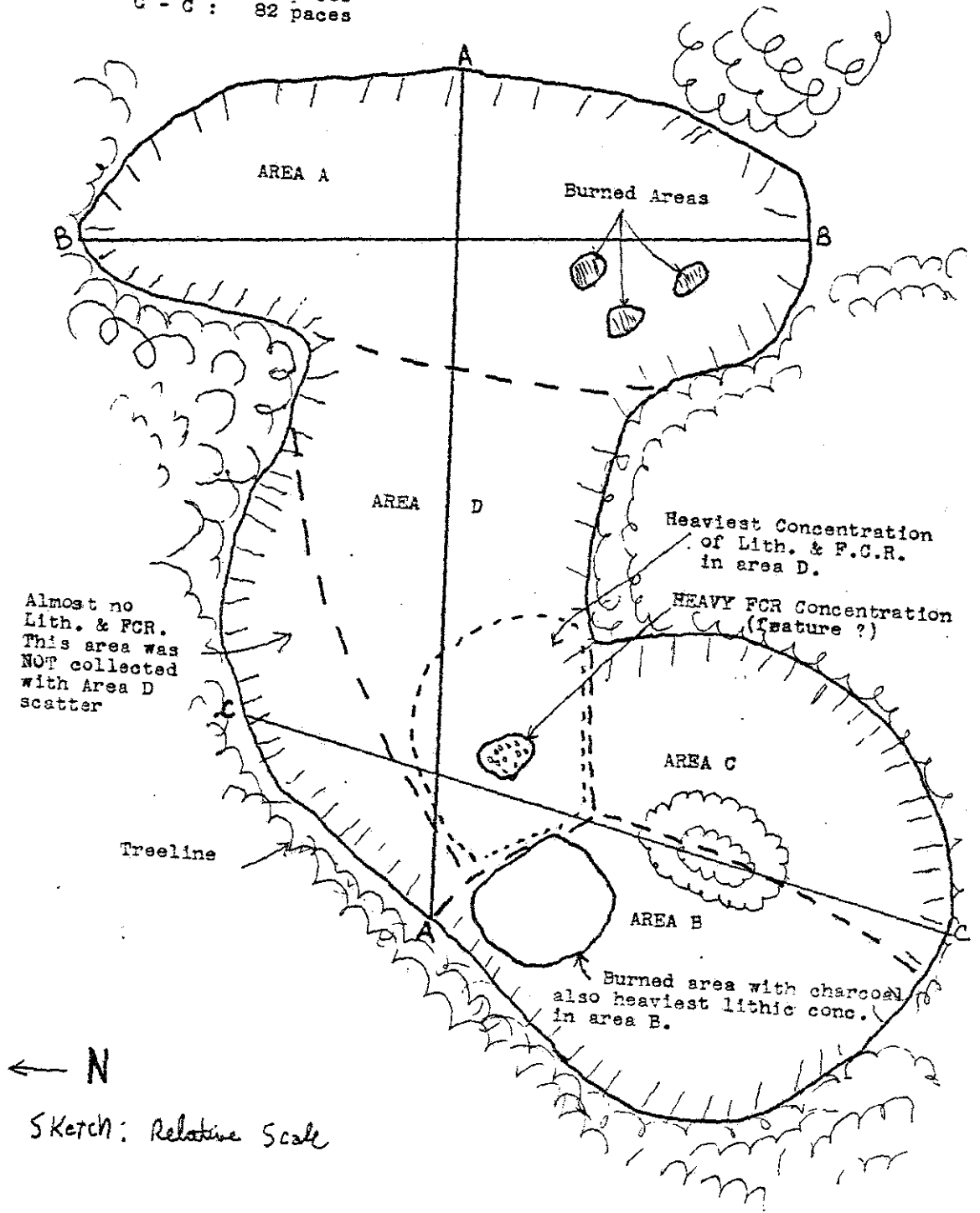


Section 4 South 1/2 = 320 Acres
 Ganges Twp North ↑ ○ = Site

Map 17

Sketch Map of "The Great Big Site" (SPS-126)
Controlled surface collections (A-D) are marked by -----

- Distances
 A - A : 100 paces
 B - B : 70 paces
 C - C : 82 paces



survey. If 80% coverage could not be obtained because access was denied we selected another unit. A summary of coverage percentages follows. Note that percentages reflect coverage of land available to survey in the units. That is, if a unit had a lake or marsh over 25% of its surface, and we surveyed all of the available 75%, we would count this as 100% coverage for that unit.

SPS 78 Coverage Percentages by Stratum

Township:

Laketown	(17 units)	87%
Saugatuck	(22 units)	95%
Manlius	(29 units)	100%
Ganges	(25 units)	91%
Fillmore	(29 units; 6 completed)	83%

Coverage total for completed strata, 93%
Coverage total for all strata, 91%

In summary it seems to us that continued intensive site survey, coupled with excavation of key sites that will help us to test hypotheses about the nature of the settlement systems as these change through time, will be the most rewarding directions for future research in our area.

7. Assessment of National Register Status of Prehistoric Sites in the Survey Area

All site information recorded during the 1978 survey relates to camp sites or to special activity sites other than burial mounds or earthworks. Without actual test excavation it is very difficult to determine the real significance of these "featureless" sites. We hoped to test SPS-78-128 after the 1978 survey, however time did not permit this. We have requested permission for this season, and may be able to put in one or two test pits in conjunction with the survey planned in Fillmore Township.

It is assumed by definition that isolated finds of artifacts are not eligible for National Register nomination. Sites designated as scatters would for the most part not be considered eligible, however some scatters may have potential significance in elucidating the regional settlement system, even though they may be small and/or exhibit a sparse distribution of cultural material. The real significance of these unprepossessing sites cannot truly be assessed until the settlement system in the Lower Kalamazoo is better understood than it is at present. Ideally one would like to have placed on the National Register examples of villages (if any) seasonal camps, and special activity sites such as sugaring camps, nut harvesting localities, quarry sites etc. as these may exist for various prehistoric temporal/cultural periods. At present it must be said that we have insufficient data to make a National Register determination for any of the sites listed here as scatters.

Some of the 40 sites listed as components very probably are eligible for National Register nomination; of these SPS 78 128 and SPS 78 64 stand out. Other components may be of equal or greater importance, but as with the scatters, until these sites are tested it would be difficult to make

a good case for nomination.

In the following listing I will omit all isolated finds and comment only on scatters and components, using a three-fold assessment: no, not eligible; i.d., insufficient data; and i.d.-test, meaning that there is a possibility for nomination after testing is done. Testing of at least some of these sites is planned for the 1980 field season.

SPS 78	2	i.d.	SPS 78	50	i.d.-test (close to DeGroot 20 AE 77)
	3	i.d.		53	no
	6	no		54	no
	7	no		55	i.d.
	8	no		56	i.d.
	9	no		57	i.d.
	10	no		58	i.d.-test
	11	i.d.-test		59	no
	12	i.d.		60	i.d.]
	13	i.d.		61	i.d.] test 1 of these
	15	i.d.-test		62	i.d.]
	17	no		63	no
	19	i.d.-test		64	i.d.]
	21	no		65	i.d.]
	22	no		*68	i.d.]
	23	i.d.]		*69	i.d.] test
	24	i.d.]		*74	i.d.]
	25	i.d.]		*75	i.d.]
	26	i.d.]		66	i.d.]
	*40	i.d.]		67	no
	*51	i.d.]		70	i.d.]
	*52	i.d.]		71	i.d.]
	27	i.d.]		72	i.d.]
	28	no		73	i.d.]
	29	no		76	no
	30	i.d.]		78	i.d.]
	33	i.d.-test		79	i.d.]
	34	i.d.]		80	i.d.]
	35	i.d.]		81	no
	36	no		82	no
	37	i.d.]		83	i.d.]
	38	i.d.]		84	no
	39	i.d.]		85	no
	41	i.d.-test		86	i.d.]
	42	i.d.]		87	no
	43	no		88	no
	44	no		89	i.d.]
	45	no		90	i.d.-test
	46	i.d.]		91	no
	47	i.d.]			*site treated out of sequence because of
	48	i.d.]			geographical/cultural placement with
	49	no			previous sites.

SPS 78 92	no	SPS 78 151	no	<u>"Out" Sites</u>
93	no	152	no	SPSO 1
94	no	153	no	2
95	i.d.	155	i.d.-test	3
96	i.d.	156	i.d.	4
98	i.d.-test	157	i.d.	5
99	i.d.	158	i.d.	6
100	i.d.	159	i.d.-test	7
101	no	160	i.d.-test	8
102	no	161	i.d.	9
103	i.d.-test	162	no	10
106	no	164	no	11
108	i.d.-test	165	i.d.	12
109	i.d.	166	i.d.	13
110	no	167	no	15
111	no	168	i.d.-test	16
112	no	169	i.d.-test	17
113	i.d.	170	i.d.	18
114	i.d.	171	no	19
115	i.d.	172	i.d.	20
116	i.d.	173	i.d.	21
117	i.d.	175	i.d.	22
118	i.d.	176	i.d.	23
119	no	177	i.d.	no
120	i.d.	178	i.d.	
121	no	179	i.d.-test	
123	i.d.	182	i.d.	
124	i.d.	183	i.d.	
125	no	184	i.d.-test	
126	i.d.-test	185	no	
127	i.d.	186	no	
128	i.d.	187	i.d.	
129	i.d.	188	i.d.	
130	no	189	no	
131	no	190	i.d.	
132	no	191	i.d.	
133	no	192	i.d.	
134	no	193	i.d.	
135	i.d.	194	i.d.	
136	no	195	i.d.	
137	no	196	i.d.	
138	no	197	i.d.	
139	i.d.	200	no	
140	i.d.	201	i.d.	
141	i.d.	202	no	
142	i.d.	203	no	
143	i.d.	204	no	
144	i.d.	205	no	
145	i.d.-test	206	i.d.	
146	i.d.	208	i.d.	
147	i.d.	209	no	
148	i.d.	210	no	
149	no	211	i.d. Nordhof-badly disturbed	
150	no	212	i.d.-test	

} test several

A major cluster of survey sites along the Lower Kalamazoo suggests nomination of this region as an archaeological district (Map 19).

A brief summary of the significance of sites in this region by township and section follows.

A. North side of the Kalamazoo River:

Manlius Twp., Section 6. Large number of Archaic sites, including SPS 126, the site with the highest density of cultural material found during the survey.

Manlius Twp., Section 7. Highest density of Late Allegan phase Late Woodland sites yet known.

Manlius Twp., Section 18. Kleis sites. Heavily collected for years by owner (and others), but large Archaic/Woodland/Mississippian components are known to be located in this area.

Saugatuck Twp., Section 1. Many lithic and FCR scatters; some large sites, most of undetermined cultural affiliation.

Saugatuck Twp., Section 12. Small off-river Woodland sites which seem to represent special activity sites.

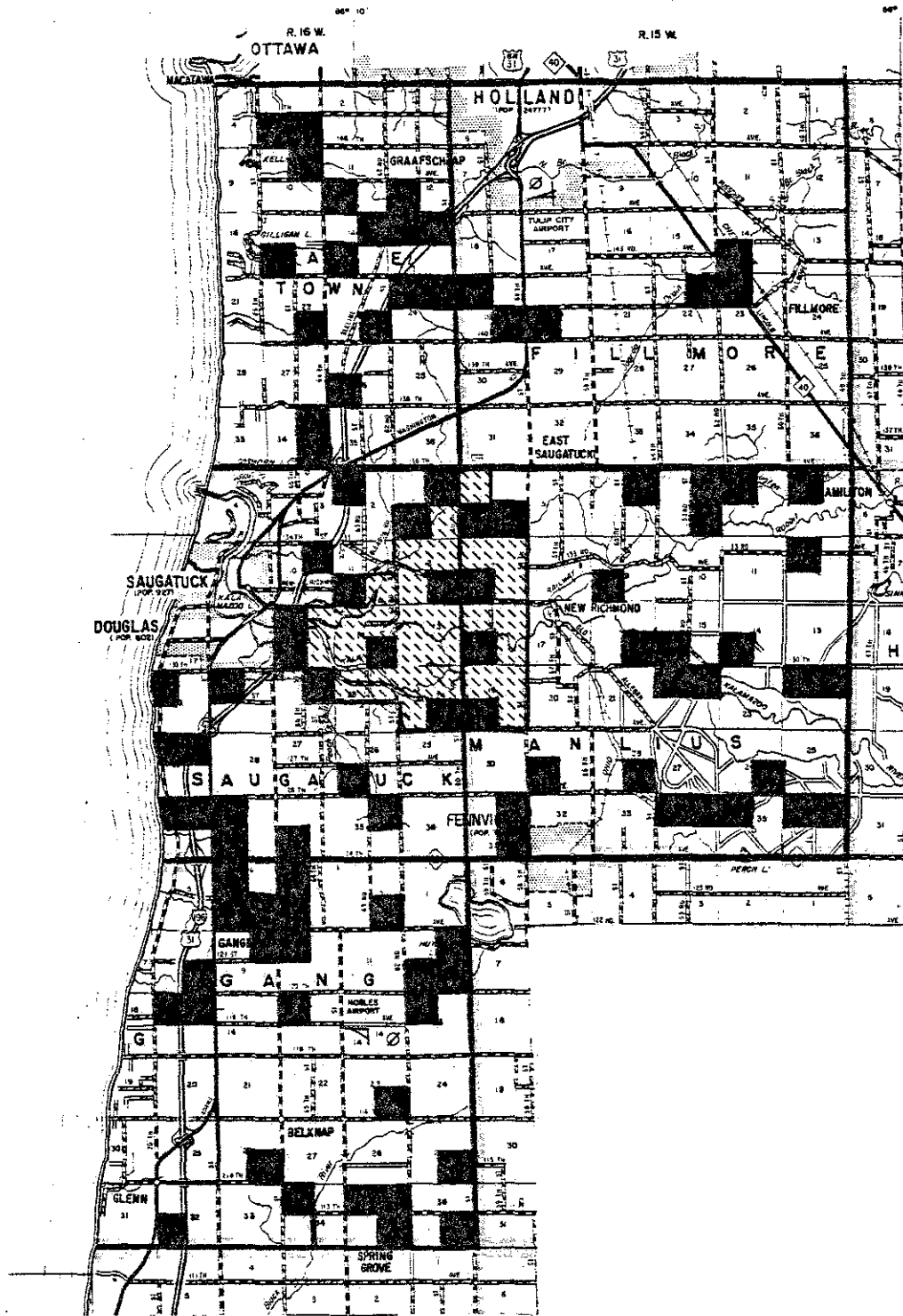
Saugatuck Twp., Section 14. The Indian Point sites; there is cultural material all over Indian Point.

B. South side of the Kalamazoo River:

Saugatuck Twp., Section 22. Large group of sites, most Archaic. Note that the Hacklander site (20 AE 78), multicomponent Woodland, a National Register site, is located on the river in section 23.

Saugatuck Twp., Section 15. Adjacent to Sec. 22; several Woodland sites and a lithic tool manufacturing area (SPS 41, Yates I).

An archaeological assessment of the entire district using the same intensive methods employed in 1978 should be carried out. I estimate that this would mean surveying 16-20 more quarter sections. This additional survey would not include all portions of each section mentioned above, but would fill in the gaps in the random sample carried out in 1978. A total of over 100 sites are presently known in the district: see also township maps, Section 5.



Map 19. Proposed Archaeological District on the Lower Kalamazoo in relation to Random Sample Quarter Sections Surveyed, 1978 season.

8. Recommendation for Further Research and Management of Cultural Resources

Recommendations for further research, including a list of sites we would like to test, are put forward in the previous section. The priority assessments for further testing included with the site descriptions in Section 3 also indicate desirable directions for future research. Realistically, we can only expect to accomplish a small portion of the desired testing.

During the 1978 field season two important sites, both of which will be proposed for nomination to the National Register were excavated by the WMU field school under Garland's direction. Early Woodland and Upper Mississippian components are represented on the Elam Site (20 AE 195) and a Middle Woodland occupation was found on the Mushroom Site (20 AE 88). Both sites are in Valley Township, outside of the SPS 78 area. Investigation of these two sites has strengthened our interest in pursuing Woodland period research objectives in the immediate future, postponing earlier period objectives for the time being. We do wish however to test the large Archaic site SPS 78 126 for possible National Register nomination.

In terms of cultural resource management in the 1978 survey area probably the most significant source of site destruction is continuing private development along the margins of the Kalamazoo River Valley. Site loss due to sand mining is a problem in certain areas (SPS 78 21, 22, 125, SPSO 14), and insofar as DNR permits may be required for this activity, perhaps surveys can be requested in future were site impact is deemed likely.

Road construction impact is mentioned for only two sites, SPS 78 67 and SPSO 78 21. However, we are very sensitized to this situation having discovered last spring that the Allegan Dam Road not only bisects the Mushroom Site (20 AE 88) but that one of the few relatively undisturbed portions of the site lies within the County right-of-way.

A continuing cause for concern is the degree of development of camp sites and trails for recreational vehicles within the Allegan State Forest. Development of new camp sites, or enlargement of existing ones, e.g. in the area of 46th St. Site, (20 AE 58), could result in major impacts on archaeological sites. Another type of development which is highly likely to impact sites is river access construction by DNR such as occurred at Hacklander (20 AE 78).

Our mitigation efforts can be effective in direct proportion the amount of lead time which DNR can give us. Strengthening ties and increasing the flow of information between DNR and the Michigan History Division seems to me a most important and constructive way whereby we archaeologists can do a better job of salvaging/preserving sites in our area.

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Page	Correction
13	SPS-78-19 is in NE 1/4, NE 1/4
14	SPS-78-22 is in NW 1/4, NW 1/4, SE 1/4
14	SPS-78-25 is in SE 1/4, SW 1/4
14	SPS-78-24 is in SE 1/4, SW 1/4
15	SPS-78-33 Brink should be Brink I
15	SPS-78-36 is in Manlius Twp.
18	SPS-78-67 should be 20 AE 599
19	SPS-78-71 is in SW 1/4, SE 1/4
19	SPS-78-76 is in SE 1/4, NW 1/4
20	SPS-78-86 is in NW 1/4, NW 1/4
20	SPS-78-87 is in NE 1/4, NW 1/4
20	SPS-78-88 is in SE 1/4, NW 1/4
20	SPS-79-89 is in SW 1/4, NW 1/4
21	SPS-78-97 is in NW 1/4, NE 1/4
22	SPS-78-107 is in SW 1/4, NE 1/4
22	SPS-78-112 is in NW 1/4, SW 1/4
24	SPS-78-124 is in NE 1/4, SW 1/4, NW 1/4
24	SPS-78-127 is in SW 1/4, NE 1/4, SW 1/4
26	SPS-78-149 is 20 AE 47 Lehman
27	SPS-78-159 is in SW 1/4, NE 1/4, SW 1/4
27	SPS-78-161 is in NE 1/4, NW 1/4
28	SPS-78-163 is in Manlius Twp.
30	SPS-78-189 is in SW 1/4, SW 1/4
30	SPS-78-193 is in NE 1/4, SE 1/4
32	SPS-78-205 is in SE 1/4, NE 1/4
32	SPS-78-207 is 20 AE 351
34	SPSO-78-4 is 20 AE 126
36	SPSO-78-18 is in SE 1/4, NW 1/4
36	SPSO-78-22 is 20 AE 608
37	Catalog listing for SPS-78-3 and SPS-78-4 are switched
37	Catalog listing for SPS-78-11 omits 14 body sherds

Page Correction

49 (Map 2: Laketown Twp.)
49 SPS-78-4 should be in NE 1/4, NW 1/4, Sect. 13
49 SPS-78-8 should be in E 1/2, SE 1/4, Sect. 22
49 SPS-78-22 should be in NW 1/4, NW 1/4, SE 1/4, Sect. 23

51 (Map 4: Saugatuck Twp.)
51 SPS-78-21 in Sect. 2 is SPS-78-29
51 SPS-78-39 should be in NW 1/4, SW 1/4, Sect. 15
51 SPS-78-64 should be in NW 1/4, NW 1/4, SE 1/4, Sect. 24
51 SPS-78-124 is in NE 1/4, SW 1/4, NW 1/4, Sect. 29
51 SPS-78-208 is in SW 1/4, NE 1/4, Sect. 29
51 SPS-78-209 is in SW 1/4, NE 1/4, Sect. 29
51 SPS-78-210 is in SW 1/4, NE 1/4, Sect. 29