



1985

# 68-An Assessment of the Archaeological Resources of the Morrow Lake Wellfield, City of Kalamazoo, Kalamazoo County, Michigan

William M. Cremin  
*Western Michigan University*

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DEPARTMENT OF ANTHROPOLOGY  
WESTERN MICHIGAN UNIVERSITY

REPORT OF INVESTIGATIONS NO. 68  
1985

AN ASSESSMENT OF THE ARCHAEOLOGICAL RESOURCES OF THE MORROW  
LAKE WELLFIELD, CITY OF KALAMAZOO, KALAMAZOO COUNTY, MICHIGAN

William M. Cremin

Prepared for:

Department of Public Utilities  
Orlin K. Loen, P.E., Director  
City of Kalamazoo, MI 49001-2898

#### INTRODUCTION:

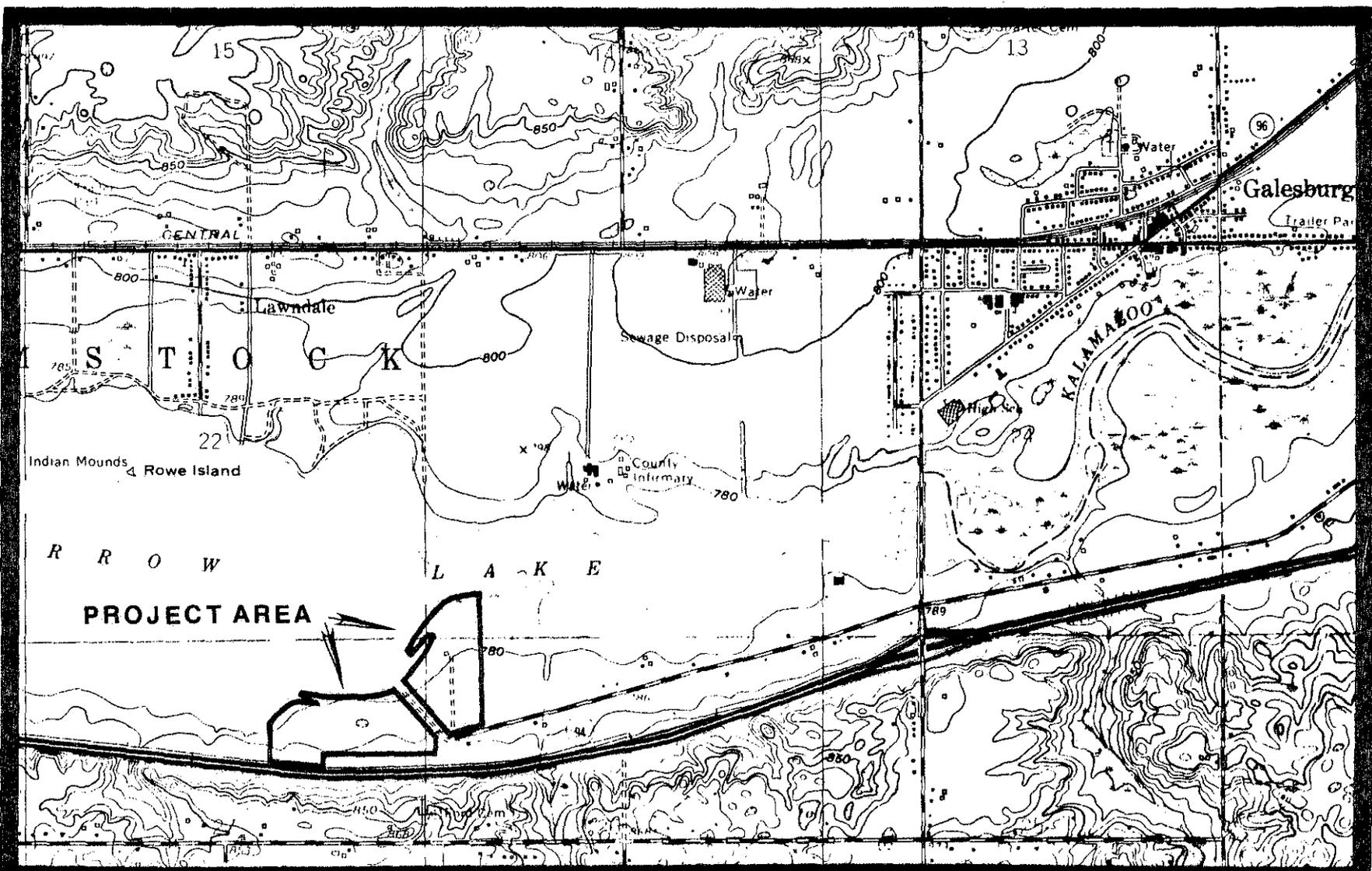
Upon receipt of purchase order #29494 from the City of Kalamazoo, authorizing Phase I archaeological assessment of the Morrow Lake Wellfield in Comstock Township, Kalamazoo County, Michigan, and with the arrival in April of weather and soil conditions appropriate to such an undertaking, a research team from the Department of Anthropology, Western Michigan University performed a survey of the project area in order to determine whether proposed well drilling activities would have an adverse impact on potentially significant cultural resources. There follows a report of fieldwork undertaken on 11 and 18 Apr 85, together with relevant background information and recommendations based upon our research findings.

#### PROJECT PERSONNEL:

Principal Investigator - William M. Cremin, Ph.D., Associate  
Professor of Anthropology, WMU  
Field Assistant - David G. De Fant, M.A. Candidate in  
Anthropology, WMU

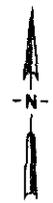
#### DESCRIPTION OF THE PROJECT AREA:

The research area of this study comprises two irregular parcels of land aggregating 27.5 ha (68 acres) and flanking the County ROW extending from Miller Road to the south side of Morrow Lake in the adjacent corners of Sections 22, 23, 26, and 27, Comstock Township, T2S R10W, Kalamazoo County, MI (Map 1).



**City of Kalamazoo  
Morrow Lake Wellfield**

**MAP 1**



At the time of our investigation, the fields occupying the eastern portion of the project had been recently plowed and washed by rains, affording surveyors with excellent surface visibility. The western portion consisted of two fields separated by a narrow woodlot and flanked on the south and north by dense ground cover in the form of grass and a stand of pines and by mixed hardwoods and several low marshy areas along the lake shoreline, respectively. Here, surface visibility varied from 30-70% in those areas formerly cultivated but now lying fallow, to absolutely nil in areas bordering the old fields, requiring that shovel testing procedures be used to augment surface reconnaissance during our evaluation.

Elevation above sea level across the project ranges between 233 m (776 ft) and 237 m (790 ft). According to the information provided by the City and gleaned from old platbooks, maps of the township, and a USDA-Soil Conservation Service aerial photograph (Appendix I) predating completion of dam construction and the impoundment of the waters of the Kalamazoo River to create Morrow Lake, the present shoreline of the lake conforms to a pronounced bend in the river, i.e. the edge of Morrow Lake is here essentially coterminous with the south bank of the former river channel!

In the past, the banks of the river in this segment of the valley were low and flanked by nearly level to slightly undulating bottomlands varying in width on either side of the river of from 200-800 m. Early documents (Durant 1880; Peters 1969)

and presettlement vegetational maps derived from the fieldnotes and plats of the original land survey conducted in 1827 (Brewer 1979; Hodler et al. 1981) indicate that the flood bottoms were heavily wooded and characterized by dense undergrowth. The immediate area of this project supported a forest community dominated by American or slippery elm, silver maple, and red maple, but with some black ash, beech, sycamore, black walnut, butternut, cottonwood, hackberry, basswood, black maple, honey locust, and sugar maple being present. The uplands behind and to the south of the project area supported climax beech-maple forest. In addition to the beech and sugar maple, common to this community were white ash, basswood, ironwood, tulip tree, and bitternut and shagbark hickory.

In marked contrast to the tree species dominating where mesic conditions prevailed on uplands behind and to the south of the project, upland areas across the river featured oak forest. In this community the dominant species everywhere was the white oak. However, red, black, bur, and yellow oak were also present and, in addition to the oaks, this plant association also evidenced small numbers of pignut and shagbark hickory.

Finally, important from the perspective of Euro-American settlement of Comstock Township, this last community also had some small restricted areas of oak savanna or "barrens", where the bur oak tended to occur in almost pure stands and, on one occasion, fringed dry prairieland. Toland's Prairie, a grassland of about 200 ha located near the present town of Galesburg in Section 13, was a magnet attracting easterners to the area

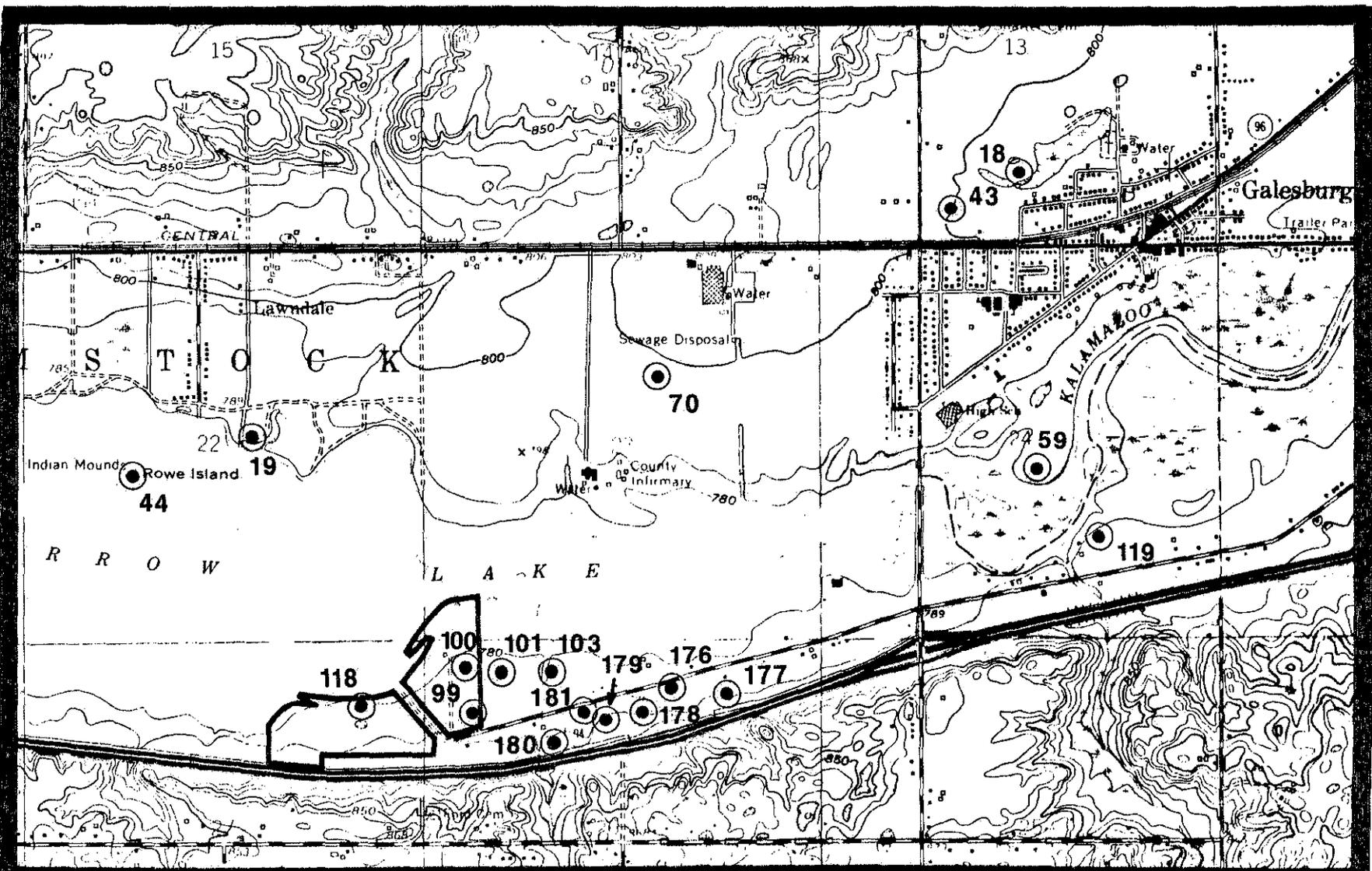
in the 1820s.

PREVIOUS RESEARCH IN AND NEAR THE PROJECT AREA:

Extensive and thorough literature, documents, and state site file reviews conducted by the Principal Investigator (Cremin 1979; 1982; 1983) in recent years in conjunction with both pure and applied programs of research undertaken in this segment of the Kalamazoo River Valley revealed that no fewer than three sites were located within the limits of this project. Moreover, this general area of the valley is very notable for its density of archaeological sites; a minimum of 17 sites attesting to the former presence of prehistoric and early historic Native American populations and the station of a French trader occur within 2.8 km of the wellfield (Map 2). With the exception of those three sites occurring within the project limits, these sites will not be discussed here inasmuch as they are fully described in the aforementioned sources.

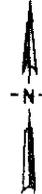
Briefly, the three sites of relevance to this study are as follows:

20KZ99      Van Engen 1 was discovered by WMU surveyors in 1979, when a light scatter of lithic debris was observed over an area of 100 m<sup>2</sup> in the SE 1/4, NW 1/4, NW 1/4 of Section 26. Seven chert flakes were recovered, but with no other association. On the occasion of our work in the wellfield, optimal field conditions led to the discovery of three flakes of Avon and Burlington chert, together with a light scatter of FCR, serving to reconfirm the site and permitting



**City of Kalamazoo  
Morrow Lake Wellfield  
(Previously Known Sites)**

MAP 2



refinement of both its location and spatial extent. Van Engen 1 occupies 2400 m<sup>2</sup> in the SW 1/4, NW 1/4, SE 1/4 and the SE 1/4, NE 1/4, SW 1/4 of the NW 1/4, NW 1/4 of Section 26.

- 20KZ100 Tulip, also recorded in 1979, represents the locus of an undiagnostic biface and a flake of chert in the NW 1/4, NW 1/4, NW 1/4 of Section 26. During this Phase I study, the site was relocated on the basis of three additional flakes and a moderate scatter of FCR over an area of some 4200 m<sup>2</sup> in the NE 1/4, NW 1/4, NW 1/4, NW 1/4 of Section 26.
- 20KZ118 This site, reported in Durant (1880), is an historic Indian cemetery located hard against the south bank of the Kalamazoo River on the Ford Farm in the NE 1/4, NE 1/4 of Section 27. Here, early area residents found 30 Indian graves, lying side by side, and including a small log enclosure with an Indian in a sitting position wrapped in a blanket. Also found in this burial ground was the grave of an old Frenchman (possibly the individual associated with site 20KZ119, a trading post formerly located on the south bank of the river in the SE 1/4 of Section 24), at the head of which was placed a crude cross of wood. Firming up the temporal placement is the fact that some of the graves, when opened, produced grave goods of silver and copper, and a tin or copper pail was observed to occur in nearly every one of them (Durant 1880: 376).

Although our intensive shovel testing and probing with a soil coring device along the margins of a 750 m<sup>2</sup> irregular, partially backfilled depression yielded no solid evidence in the form of cultural material or fragments of bone that this location represented the 19th century excavation of the Indian burial ground, we are reasonably confident that we have relocated this site in the bank overlooking Morrow Lake in the Center, N 1/2, SW 1/4, NE 1/4, NE 1/4 of Section 27.

#### SURVEY FIELD PROCEDURES:

In the eastern portion of the project the survey team encountered two recently plowed and rain washed fields, providing absolutely excellent conditions for surface reconnaissance. Here, we spaced ourselves 20 m apart and walked the fields from north to south in zig-zag fashion, while carefully scanning the surface for indications of human activity in the form of fire-cracked rock, lithic debris, and other sorts of material culture remains that might signal the presence of an archaeological site.

Elsewhere, surface visibility was more restricted, necessitating that we systematically traverse the area from east to west along transects and place shovel tests at selected intervals along each line of survey. Initially, the interval between transects and shovel tests was 20 m. But as we approached to within 50 m of the lake, this was reduced to 10 m or even less. Where ground cover tended to thin in the centers of two long

worked but now fallow fields in the western portion of the project, providing visibility ranging between 30-70%, surface reconnaissance procedures were employed to augment our program of shovel testing.

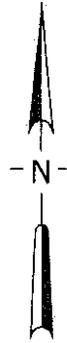
Map 3 shows the approximate locations of 354 shovel tests excavated in the western portion of the wellfield. Shovel testing routinely involved exposing the soil profile to a depth of 40-50 cm, or to a depth determined to be consistent with the post-Pleistocene development of local floodplain soils. Given our familiarity with the depositional history of local soils, derived from prior research involving a program of deep testing at the nearby Galesburg Rest Area (Cremin 1982), we are certain that shovel tests excavated to the depth indicated above are more than adequate to ensure that any potential culture bearing deposit in the sandy alluvium beneath the modern surface would have been exposed to view.

#### RESULTS OF THE SURVEY:

Surface and subsurface finds of prehistoric lithic material, fragments of fire-cracked rock, and the discovery of one cultural feature are indicative of the presence of archaeological sites. Moreover, a long time area resident, Mr. Bert Van Engen, has informed us that he frequently observed "points" while working the fields in the project, and that in recent years an unnamed artifact collector has found historic Indian artifacts in the lake only a few meters from that location on the bank where we defined and tentatively identified an old excavation as 20KZ118 (Maps 2 and 3).

# CITY OF KALAMAZOO

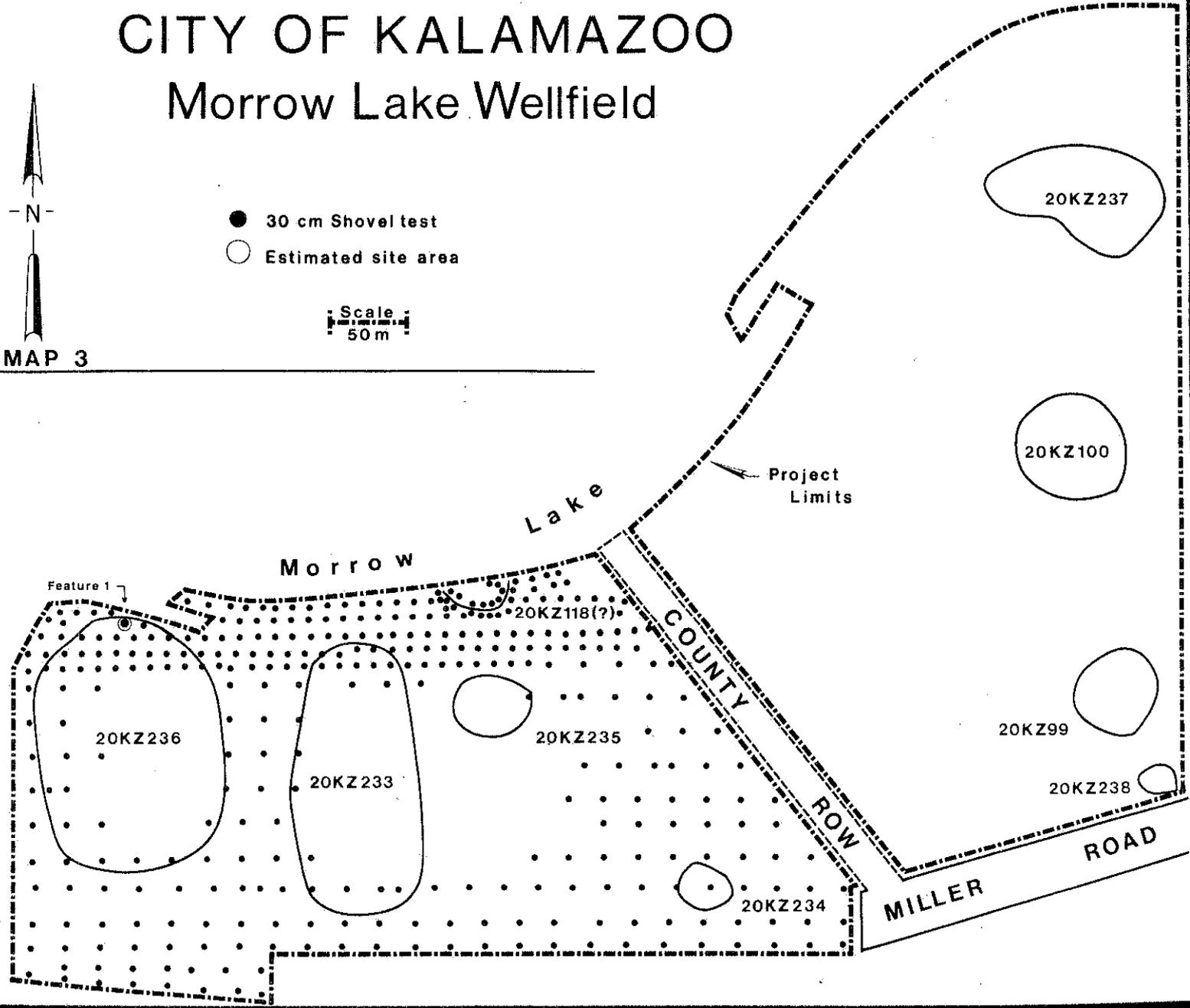
## Morrow Lake Wellfield



MAP 3

- 30 cm Shovel test
- Estimated site area

Scale  
50 m



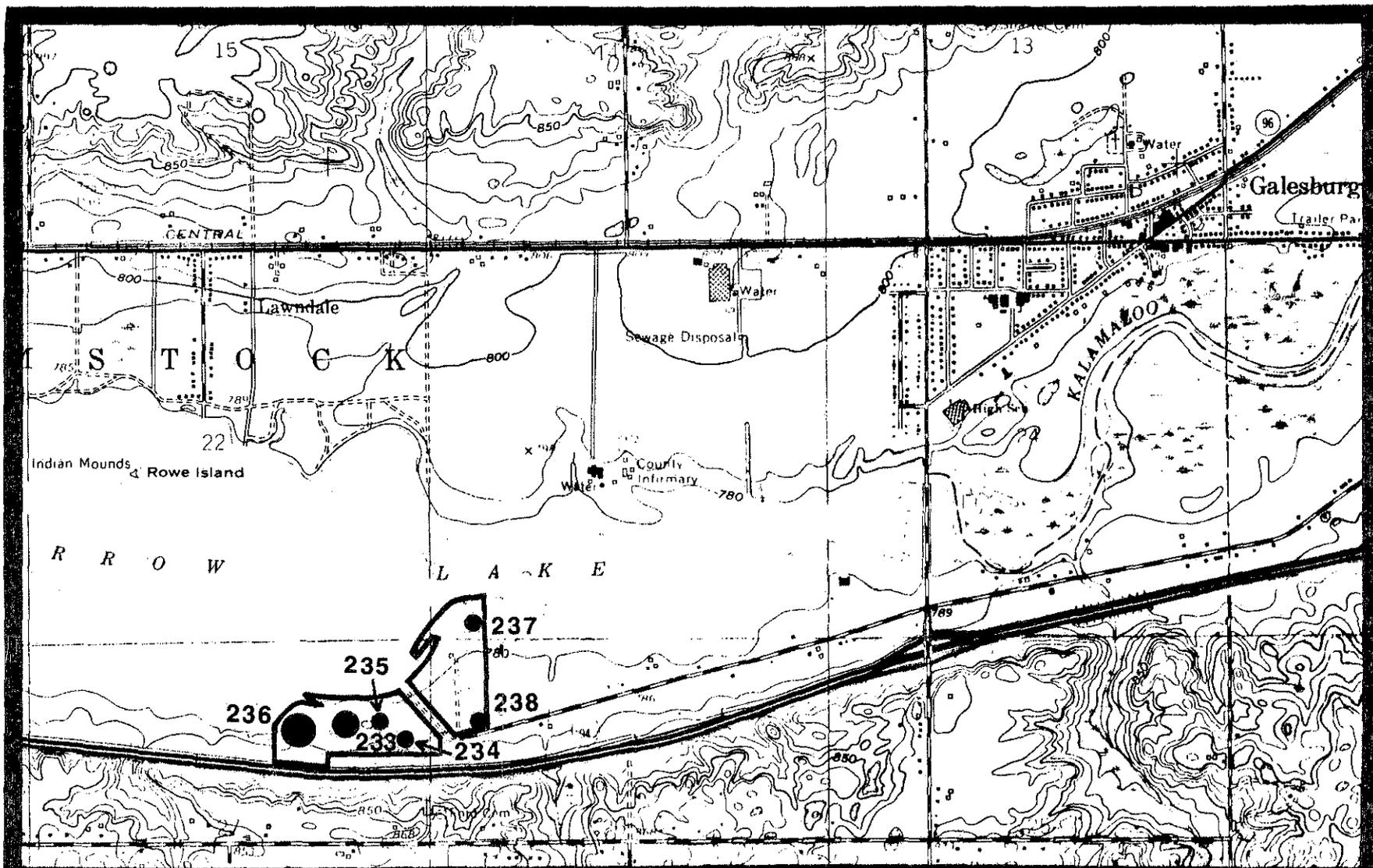
Fire-cracked rock is sparsely distributed over virtually the entire 27.5 ha surveyed, albeit most commonly encountered in association with cultural items in those areas delimited as sites on Map 3. The only really dense concentrations of FCR noted in the project occur within the limits of 20KZ236, where densities of 10 pieces of FCR per m<sup>2</sup> were recorded on a number of occasions. In all probability, such FCR densities point to the presence of subsurface features not unlike the pit recorded as Feature 1 near the northern limits of 20KZ236 (Map 3). This observation will be discussed in more detail below.

In addition to the three previously recorded sites, on-site evaluation of the Morrow Lake Wellfield in April suggests the presence of an additional six previously unrecorded sites (Map 4). These are:

20KZ233 Wellfield #1 is a light scatter of lithic debris and FCR encompassing about 1.4 ha in the W 1/2, SW 1/4, NE 1/4, NE 1/4 of Section 27, Comstock Township, T2S R10W, Kalamazoo County, Michigan. The presence of a biface of Bayport chert that is like the Steuben type of the Middle Woodland Hopewell tradition and a flake of Upper Mercer chert argue for a Middle Woodland temporal placement.

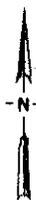
- 1 projectile point of Bayport chert (Figure 1)
- 1 flake of Upper Mercer chert
- 1 flake of heat treated Burlington chert
- 2 flakes
- 3 fragments of quartzite

20KZ234 Wellfield #2 is represented by three crude flakes and a very diffuse scatter of FCR over an area of about 800 m<sup>2</sup> in the SW 1/4, SE 1/4, SE 1/4, NE 1/4, NE 1/4



**City of Kalamazoo  
Morrow Lake Wellfield  
(6 New Archaeological Sites)**

MAP 4



of Section 27, Comstock Township, T2S R10W, Kalamazoo County, Michigan. The items recovered are not diagnostic, and the cultural affiliation and/or temporal placement of this site cannot at this time be determined.

-2 flakes of an unidentified chert (probably from a local till source)

-1 flake of argillite, possibly evidencing use-wear in the form of nibbling on one margin

20KZ235 Wellfield #3 yielded three flakes and is further characterized by a light scatter of FCR over an area of approximately 1600 m<sup>2</sup> in the Center, S 1/2, NE 1/4, NE 1/4 of Section 27, Comstock Township, T2S R10W, Kalamazoo County, Michigan. Again, the cultural material from this site does not evidence any diagnostic items, and the temporal placement and/or cultural affiliation of this site are not known.

-2 bifacial thinning flakes, one of Flint Ridge chert  
-1 flake of rose quartzite

20KZ236 Wellfield #4 covers an area of about 4.0 ha in the Center, SE 1/4, NW 1/4, NE 1/4 of Section 27, Comstock Township, T2S R10W, Kalamazoo County, Michigan. While exhibiting a light scatter of lithic debris and FCR over the entire estimated site area, 20KZ236 is notable for several very dense concentrations of FCR and one cultural feature that was encountered during shovel testing.

Feature 1 is a shallow basin-shaped pit, 1.3 m in diameter and 37 cm in depth. The most interesting aspect of this feature is the blackish fuel lens that

commences at a depth of 20 cm below the modern surface and extends to the base of the pit. This soil zone contained charcoal, one specimen of which permitted identification of the source as belonging to the white oak group, fragments of FCR, three flakes of chert, and a fragment of a pitted cobble. Unfortunately, nothing from this feature or, for that matter, the site is diagnostic with respect to either temporal placement or cultural affiliation.

- 1 bifacial thinning flake of Burlington chert
- 2 resharpening flakes
- 1 decortication flake
- 2 probable flakes
- 1 fist-size cobble with a pitted surface
- 1 pitted cobble fragment

20KZ237 Wellfield #5 encompasses approximately 6000 m<sup>2</sup> in the NE 1/4, SE 1/4, SW 1/4, SW 1/4, SW 1/4 of Section 23, Comstock Township, T2S R10W, Kalamazoo County, Michigan. Here, surveyors observed a very light and at times discontinuous scatter of FCR and two undiagnostic cultural items. The cultural affiliation and temporal placement of this site are not known.

- 1 blade-like flake of an unidentified chert showing steep marginal retouch on one lateral edge and use-wear in the form of nibbling on the other
- 1 bifacial thinning flake

20KZ238 Wellfield #6 is confined to an area of about 400 m<sup>2</sup> in the Center, S 1/2, NW 1/4, NW 1/4 of Section 26, Comstock Township, T2S R10W, Kalamazoo County, Michigan. The site yielded a very light scatter of FCR, one bifacial thinning flake, and a Gibson point fabricated on an unidentified chert. The projectile point from this site argues for a Middle Woodland temporal

placement.

- 1 projectile point of the Gibson type (Figure 2)
- 1 bifacial thinning flake

#### SIGNIFICANCE OF OBSERVATIONS:

Our fieldwork and information derived from the background study clearly establish the presence of at least nine archaeological sites in the area of the Morrow Lake Wellfield. The cultural remains of prehistoric occupation are quite sparse in their distribution across the 27.5 ha surveyed, suggesting an extensive rather than intensive use of this area along the Kalamazoo River by Native American groups. This observation is not unanticipated, given our familiarity with the archaeological resource base in this segment of the valley. In fact, the results of this Phase I assessment are exceedingly redundant when compared with recent investigations at the Galesburg Rest Area (Cremin 1982; 1983) located a few hundred meters to the east and upstream from the wellfield project. This previous study and the results derived from both Phase I and Phase II research programs are very influential with respect to the recommendations which follow.

#### RECOMMENDATIONS:

On the basis of a systematic and intensive on-site study of the 27.5 ha project designated as the Morrow Lake Wellfield, together with a thorough examination of the relevant literature and documents, especially as these pertain to our work at the rest area, it is proposed that sites located and reported above will not require Phase II test excavation to determine their eligibility for listing on the National Register of Historic

Places. Sites 20KZ233, 234, 235, 237, and 238 might most appropriately be regarded as "surface sites", with the probability being quite low that subsurface features providing some measure of archaeological context even exist. Together with previously recorded sites 20KZ99 and 100, these are not to be considered potentially significant sites within the existing data set for this segment of the Kalamazoo River Valley.

With respect to the site recorded as 20KZ118, an early 19th century Indian burial ground that had been ravaged by area residents more than a century ago, our on-site study has revealed nothing to indicate that the site has not already been thoroughly destroyed. While we believe that the excavation found on the shore of the lake does accurately locate the former site, our careful examination of the margins of the depression yielded no information potentially useful in assessing it. No further evaluation of 20KZ118 would appear to be warranted.

The "class" of the population of sites located in the Morrow Lake Wellfield project is 20KZ236. Here, over an area of some 4.0 ha, surveyors observed FCR, lithic debris, and through shovel testing exposed a cultural feature. Given the occurrences of several dense concentrations of FCR within the limits of this site, it is probable that subsurface features do or have existed. However, little can be said with respect to their present condition of preservation in this context of intensive cultivation for more than a century. Feature 1

occurred near the northern limits of the site in close proximity to the lake shoreline. This is an area of the site evidencing little if any disturbance attributable to cultivation. Intact cultural features may not exist throughout most of the estimated site area due to years of farming activity.

Perhaps more critical in making a case for or against a Phase II assessment of this site is our recent experience at the Galesburg Rest Area. Here, Phase I evaluation produced evidence for the presence of cultural features, but subsequent Phase II test excavation hardly increased our knowledge of the nature of human activity associated with the prehistoric occupation of the sites tested--let alone provide evidence of potential significance in terms of National Register criteria. Therefore, in light of our current knowledge of the archaeology of the Middle Kalamazoo Valley and our recent experience in test excavating sites that on the basis of Phase I assessment are markedly similar to 20KZ236, it is our recommendation that Phase II test excavation of this site will not be necessary.

In conclusion, it is our contention that the archaeological remains occurring in the Morrow Lake Wellfield are not of great enough value to either require additional study or delay the commencement of well drilling activities proposed by the City of Kalamazoo. In the event that work in the wellfield does result in the exposing of subsurface archaeological remains, the Principal Investigator will make himself available to the City to assist in the assessment and proper disposition of any materials discovered.

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Figure 1: Hafted biface from Wellfield #1, 20KZ233. This specimen is of Bayport chert.



Figure 2: Hafted biface from Wellfield #6, 20KZ238. This specimen is of an unidentified, probably local, till chert.

(ACTUAL SIZE)

APPENDIX I

