



1991

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WILLIAM M. CREMIN
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TIMOTHY D. KNAPP

AN ARCHAEOLOGICAL SURVEY OF THE KENZIE CREEK-VALLEY POWER
TRANSMISSION LINE IN CASS AND VAN BUREN COUNTIES, MICHIGAN

REPORT OF INVESTIGATIONS NO. 100
1991

DEPARTMENT OF ANTHROPOLOGY
WESTERN MICHIGAN UNIVERSITY

Indiana Michigan Power Company
One Summit Square - 15th Floor
P.O. Box 60
Fort Wayne, IN 46801
Attention: Kimberly L. Smith
Engineer-Senior

A Report of Research
Undertaken on Behalf of:

INTRODUCTION:

Pursuant to the establishment of a cooperative agreement between Indiana Michigan Power Company of Fort Wayne, Indiana (dated 23 Apr 91) and Western Michigan University (accepted on 30 Apr 91) authorizing a Phase I archaeological assessment of the Kenzie Creek-Valley power transmission line in Cass and Van Buren counties, Michigan, archaeologists in the Department of Anthropology initiated a literature, documents, and site file search and between 1-6 May conducted on-site evaluation of the project area in order to determine whether proposed construction activities would have an adverse impact on potentially significant archaeological resources. There follows a report of our program of research, together with recommendations based upon our findings.

PROJECT PERSONNEL:

- Principal Investigator - Dr. William M. Cremin, Professor of Anthropology, Western Michigan University
- Project Supervisor - Mr. Gregory R. Walz, M.A., Department of Anthropology, WMU
- Field Assistants
 - Mr. Daniel B. Goatley, M.A. Candidate, Department of Anthropology, WMU
 - Mr. Timothy D. Knapp, M.A. Candidate, Department of Anthropology, WMU

DESCRIPTION OF THE PROJECT AREA:

The research area of this study consists of a corridor 60 ft (18 m) wide and 19.4 mi (31.2 km) long, extending from the Kenzie

Creek Station in Howard Township, Cass County, on the south to the

Valley Station in Decatur Township, Van Buren County on the north (Fig. 1). For almost its entire length, this corridor parallels

either existing power transmission line or railroad right-of-way,

with 17.7 mi (28.5 km) of easement lying within Amtrak Railroad

ROW, 1.0 mi (1.6 km) within existing transmission line ROW, and

0.7 mi (1.1 km) of new ROW across productive agricultural lands

(Johnson, Johnson, and Roy 1991:1). In aggregate, the total land

area requiring Phase I assessment is estimated at about 56.2 ha.

In terms of impact, the company's consultants estimate that

7.4 acres (3.0 ha) of forest vegetation, including 0.8 acre (0.3 ha)

of forested wetlands, 0.05 acre (0.02 ha) of wetland, and 0.02 acre

(0.01 ha) of actively worked farmland will be permanently impacted

(Johnson, Johnson, and Roy 1991:1).

The project area is characterized by glacial deposits ranging

in thickness from 100 ft (30 m) - 600 ft (180 m) over the Coldwater

Shale bedrock formation. The deposits comprise till, outwash, and

lacustrine materials and vary from an unstratified mixture of clay,

silt, sand and rock particles, where till is present, sorted sand

and gravelyly outwash material, and lacustrine deposits along the

former shorelines of glacial lakes (Johnson, Johnson, and Roy 1991:

24).

Topographically, the landscape is flat to gently rolling across

the outwash basin, with a prominent morainal feature in the northeast

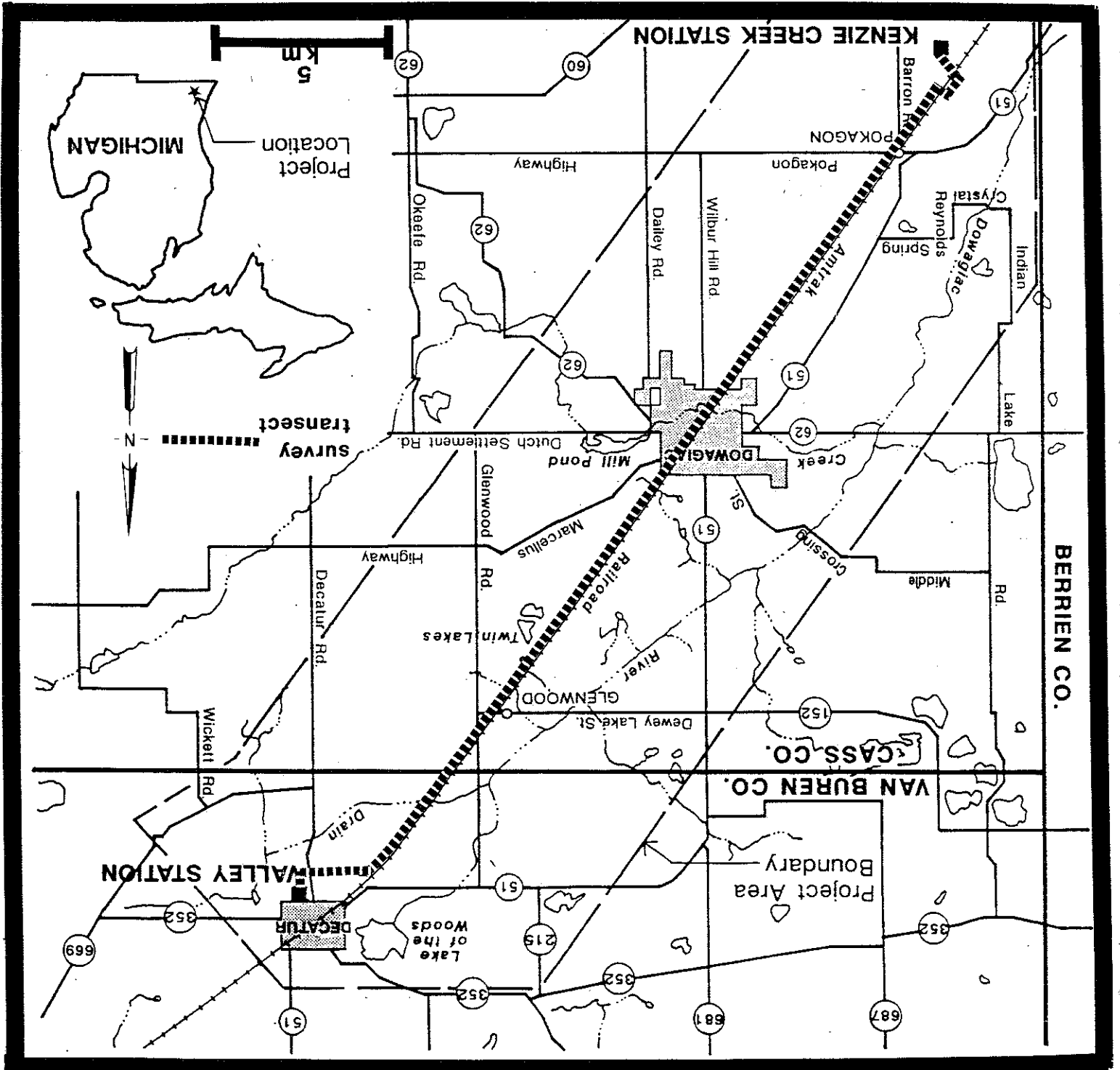
portion of the study area. Elevation across the project area ranges

from 725 ft (217.5 m) - 800 ft (240 m) above sea level (Johnson,

Johnson, and Roy 1991:24).

Soils within the study area comprise excessively to well drained

Fig. 1 Project Location



associations supporting forest on uplands and very poorly drained, mucky and loamy soils on old glacial lake beds typically supporting woodlands and croplands where artificially drained and wetlands where largely undisturbed. Extensive wetlands, intermittent and perennial streams, and lakes ranging in size from a few to several hundred acres occur throughout the general area of the project and together comprise a significant part of the Dowagiac River watershed (Johnson, Johnson, and Roy 1991:29).

In the project area, the Dowagiac River lies to the west of and generally parallels the proposed route of the power transmission line. Its course is to the southwest. A total of 18 county drains, permanent streams or intermittent tributaries are crossed by the proposed ROW, of which the most notable are Dowagiac Creek and Pokagon Creek. These stream crossings were given special attention by the survey team during the conduct of fieldwork.

In addition to the woodlands and several small prairie remnants or isolates, wetlands, located primarily in the western and central portions of the study area, are present to the extent of a mere 24 acres (9.7 ha). These are associated with streams and support southern swamp forest species such as ash, elm, soft maple, and cottonwood. Where shrub/scrub vegetation has taken hold, alder, dogwood, and willows comprise the dominants. Emergent wetlands are dominated by such hydrophytic species as cattail, bulrush, sedges, reeds, pickerel weed, and arrowhead, while open water of less than 2.0 m depth typically supports floating plants such as yellow water lily, duck weed, and pond weeds (Johnson, Johnson, and Roy 1991:35-36).

ARCHAEOLOGICAL RESEARCH AND RESOURCES IN THE PROJECT:

A review of the literature and documents and examination of the state site files strongly suggest that the area in which the proposed power transmission line occurs has received no prior archaeological attention. Be that as it may, Barbara Mead of the Bureau of History (personal communication) informed us that

the ROW appeared to pass through or near to one previously recorded site, 20CS88, located in the SW 1/4, Section 10 of Wayne Township (T55 R15W), Cass County, Michigan. This site is listed as an unconfirmed, untested multicomponent site known from surface collections to have Paleo-Indian through Woodland occupations represented. Ms. Mead further suggested that while the location is imprecisely recorded, she suspected that the center of occupation might be associated with an area of high ground above a small stream draining a standing body of water lying to the east of the Amtrak Railroad ROW. We therefore proposed to give this area of the transmission line corridor special attention during fieldwork in hopes of confirming the existence of this previously recorded site.

SURVEY FIELD PROCEDURES:

The archaeological survey work was conducted between 1-6 May 91 by a crew of three experienced graduate students from WMU - Walz, Goatley, and Knapp.

During the course of fieldwork, the survey crew employed two standard data recovery procedures to evaluate the corridor for the presence of archaeological sites. These were: visual or surface reconnaissance in the areas of plowed field; and shovel testing at regular intervals along a line of survey corresponding usually to the center of the ROW where surface visibility was limited.

the Valley Station at the northern terminus of the power transmission

line.

Segment 1 (Fig. 2)

Survey work began at that point where the proposed power

transmission line exits the Kenzie Creek Station and parallels an existing 138kV line across farmland toward the Amtrak ROW just

north of Thompson Road. The centerline of the proposed corridor

lies approximately 100 ft (30 m) north of the existing power line as it crosses recently plowed land prior to linking up with the

railroad ROW. Visual survey was implemented in this portion of the study area and resulted in the discovery of a projectile point and

a dozen lithic reduction flakes on the crest of a small knoll lying about 50 m northeast of an IMPC transmission tower. This site,

recorded as the Kenzie Creek Station site (20CS102), will be dis-

cussed in more detail below.

Upon reaching the Amtrak ROW, surveyors commenced shovel test-

ing at 20 m intervals within the corridor on the west side of the

railroad tracks. Testing continued for 280 m (14 tests) north of

Thompson Road where a cattail marsh bordering a small drainage was

encountered. Testing was discontinued for the next 140 m as the

soils were found to be characteristic of habitually wet conditions.

At the end of this stretch of wet area, two tests were excavated,

followed again by a 140 m section of ROW that was found to support

wetland vegetation and could not be shovel tested. At this point,

the proposed transmission line crosses to the east side of the rail-

road tracks, where it remains for the remainder of its entire length.

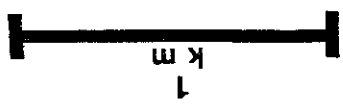
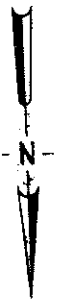
Testing continued at 20 m intervals until surveyors reached the

Pokagon Highway crossing, for a distance of roughly two kilometers.

On the north side of the Pokagon Highway crossing, surveyors found that the immediate area had been heavily disturbed and filled, and at this point the railbed rested atop a steep incline above the floodplain bordering the course of Pokagon Creek. Given these observations, no shovel testing was undertaken for a distance of 270 m north of the highway crossing. Testing then resumed on the north side of the creek and continued uninterrupted for 1.6 km.

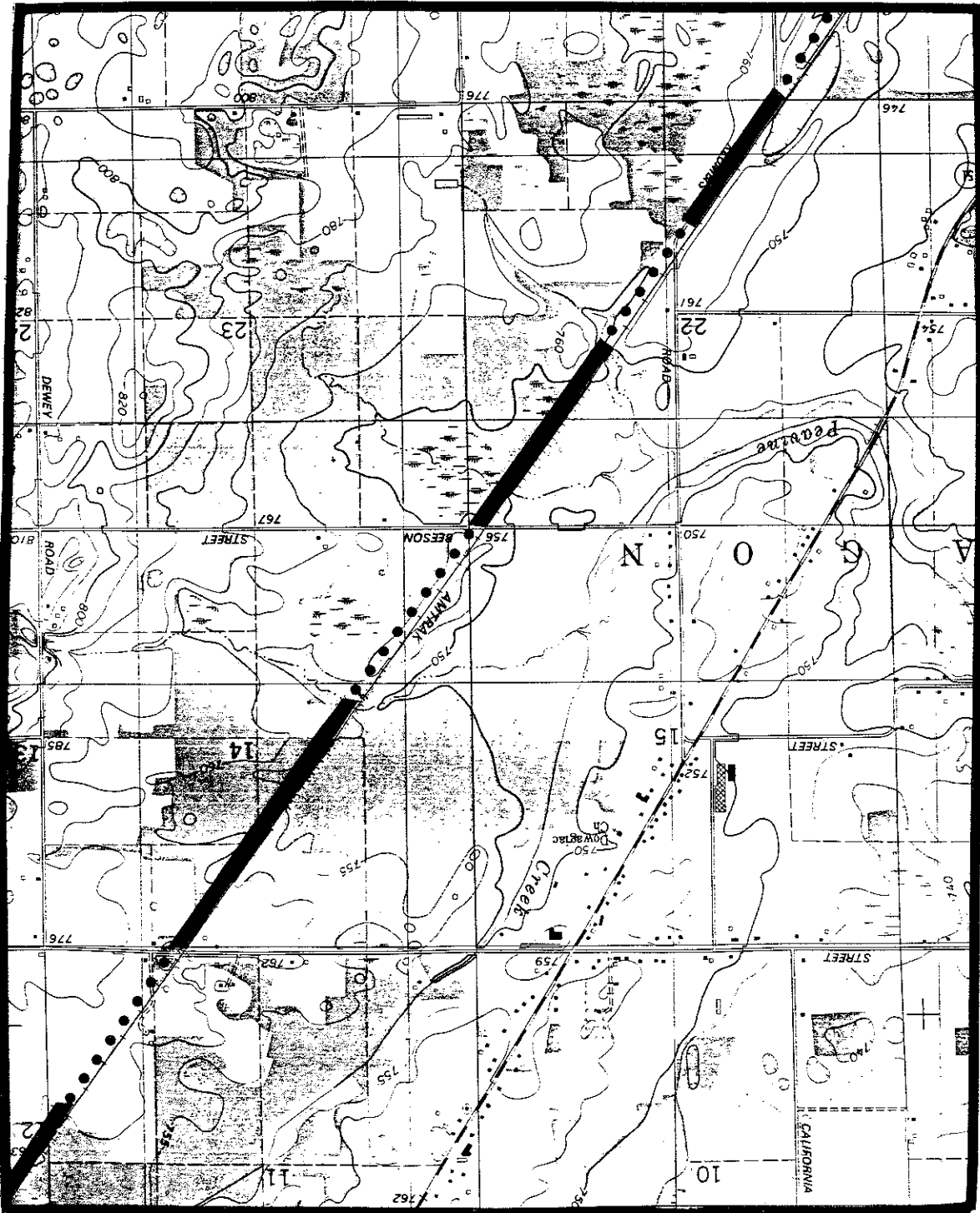
Segment 2 (Fig. 3)

From the southern end of the Kumbis Road Prairie, the corridor parallels an area of protected prairie vegetation for approximately 640 m. Shovel testing was not undertaken along this stretch of ROW due to extensive ditching that had resulted in removal of the original ground surface, rather than the presence of some protected plants. Thereafter, testing resumed at a point 140 m south of where Kumbis Road dead ends at the east side of the Amtrak ROW and continued for some 460 m until the crew reached a very wet area bordering a small drainage. At this point along the route, the railbed is raised above the wetlands for approximately 700 m, and this portion of the corridor was not tested. At the northern end of this stretch, the Beeson Street crossing marks the boundary of the wetlands. Testing resumed on the north side of Beeson Street and continued for 800 m. Here, surveyors encountered a cattail marsh. At this point the railroad bed was built upon an elevated grade, raising it well above the marsh and adjacent wet woods to the east and west. No tests were excavated for 1.2 km, from the north edge of the marsh to the Peavine Street crossing. Thereafter, testing resumed for 640 m, at which point yet another wet area was reached. Testing was once again discontinued for the remainder of this segment of the corridor.



visual surface survey not tested
20m test interval
10m test interval - - - - -

Fig. 3 Route Segment 2



The crew resumed shovel testing on the north side of Morton Road and continued for 320 m until reaching a ravine/gravel pit on the eastern side of the ROW. This recent alteration to the landscape made it unnecessary to shovel test the next 200 m, after which shovel testing resumed and continued to the Twin Lakes Road crossing. After crossing this road, tests were conducted for an additional 340 m, where surveyors encountered a small creek draining a pond lying east of the ROW. It was then discontinued for 190 m, at which point the team reached the north side of the creek and its flanking wetlands. Here, the interval between shovel tests was reduced to 10 m, as the existing railroad ROW bisects the previously recorded site, 20CS98. This interval was maintained for 350 m until the

Segment 5 (Fig. 6)

ing to the west of Twin Lakes. a recently excavated area immediately south of the Morton Road crossing of the ROW for a distance of 3.5 km, where the survey team found extends in a southeasterly direction from Pine Lake on the western Shovel testing continued uninterrupted from the wetland that

Segment 4 (Fig. 5)

it ends. continued in this segment to the general area of Pine Lake where Dowagiac in the SE 1/4, SE 1/4 of Section 30 of Wayne Township and The testing program commenced once again on the north side of

creek as urban expansion had severely impacted the right-of-way. Creek, No tests were excavated within the city limits north of the terminating only when surveyors reached the south bank of Dowagiac Shovel testing resumed and continued into the Dowagiac area,

Segment 3 (Fig. 4)

1
km

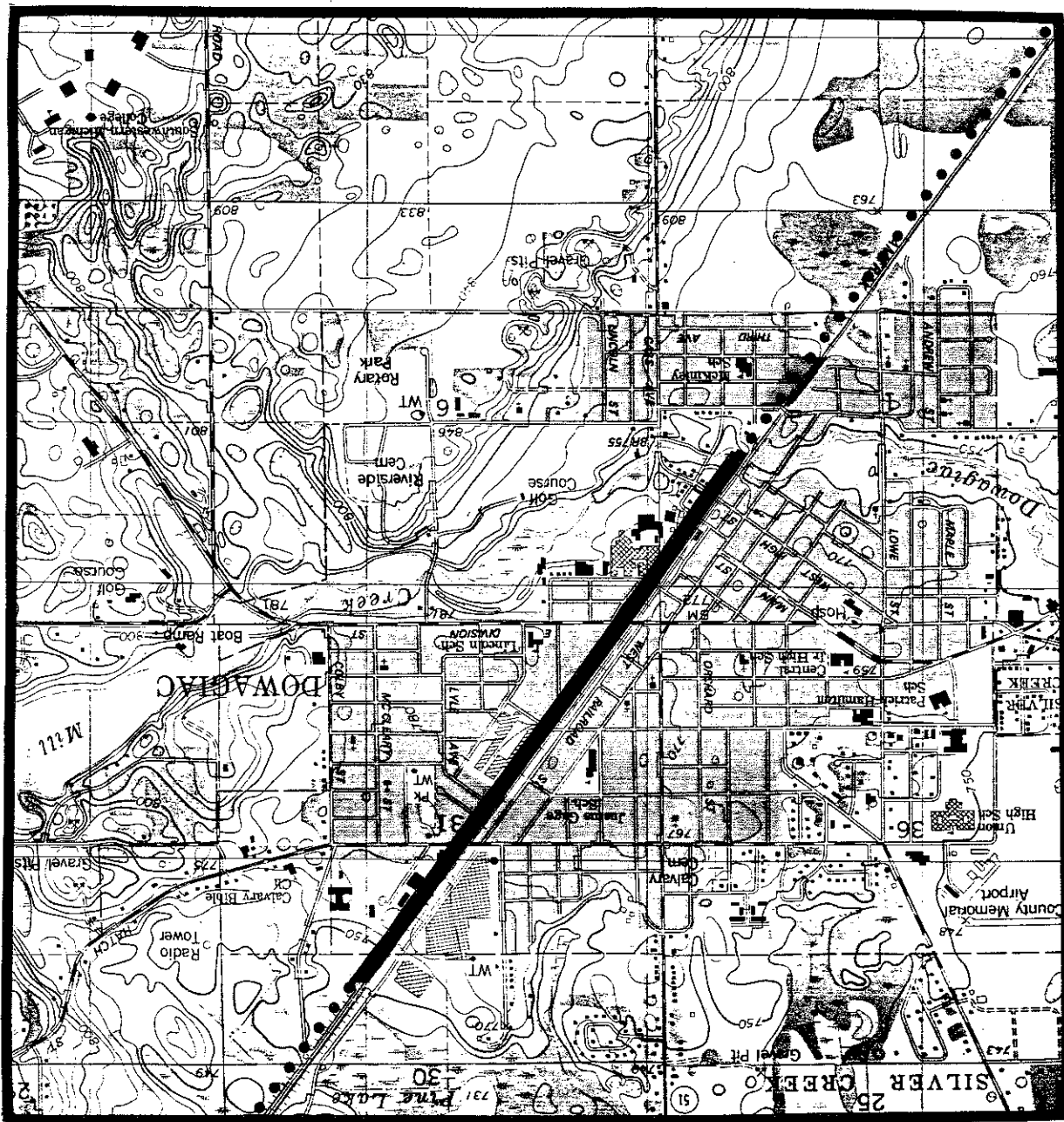
not tested

visual surface survey

10m test interval

20m test interval

Fig. 4
Route Segment 3



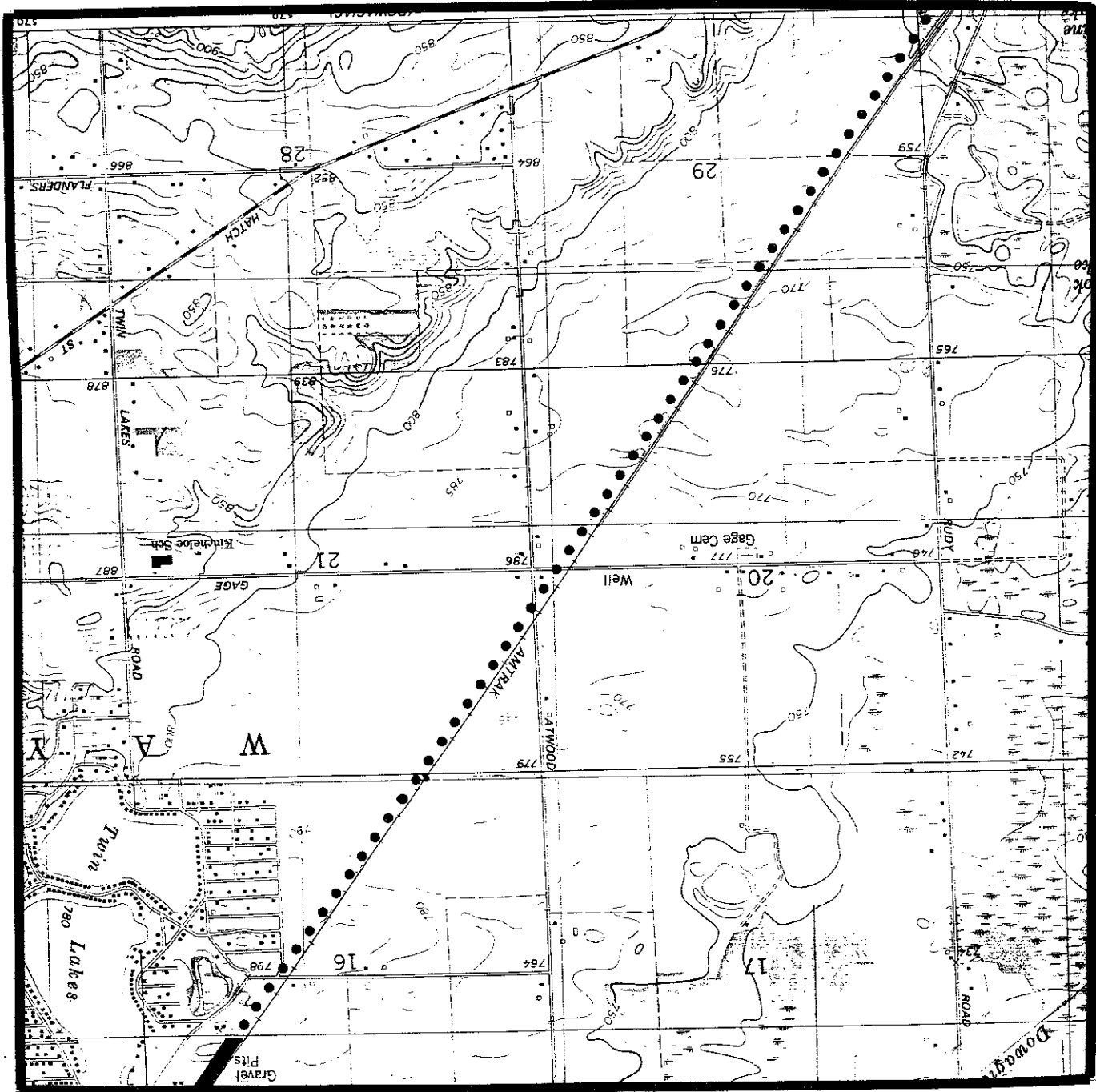
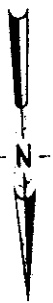


Fig. 5 Route Segment 4

20m test interval •••••
 10m test interval - - - - -
 visual surface survey // // // // //
 not tested ██████████

1 km



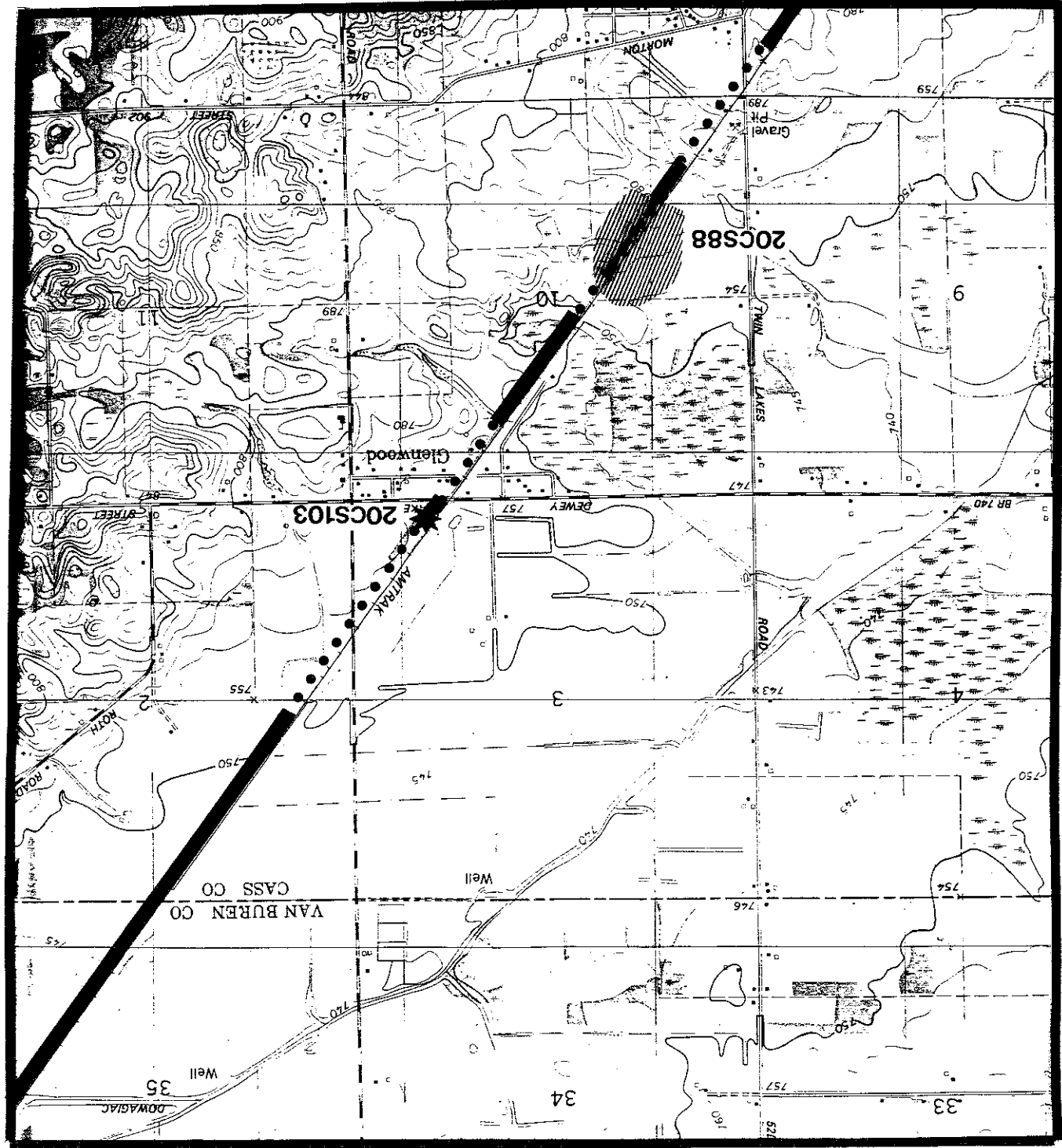
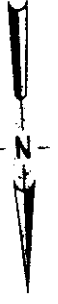


Fig. 6 Route Segment 5

20m test interval •••••
 10m test interval - - - - -
 visual surface survey hatched area
 not tested solid black area

1 km



team reached the tree line defining the northern edge of a plowed field that we presume contains most of the site area as known from surface collection. More will be said about 20CS88 below.

From the tree line defining field's edge, the team shovel tested for a distance of 200 m; once again the interval between shovel tests was 20 m. Here, surveyors encountered yet another small stream with adjacent areas of wetland vegetation. No tests were excavated as we passed along the eastern edge of the wetland area. Rather, they were resumed at a point approximately 350 m south of the Dewey Lake Street crossing and continued up to this point. After a 50 m hiatus, tests were again resumed north of the crossing, and on our second shovel test, approximately 70 m north of Dewey Lake Street, a single lithic reduction flake was retrieved. Several additional shovel tests about the findspot proved negative, but a projectile point was collected from the ground surface nearby. More about the locale we have named the Dewey Lake Street site (20CS103) will be provided below.

Following the aforementioned discovery, testing was continued until the survey team reached a newly excavated drainage ditch at a point about 320 m north of the Glenwood Road crossing. This ditch, which parallels the east side of the survey corridor, features a slow moving current draining toward the Dowagiac Drain. Here, the route enters an extensive area of muck soils (Glendora-Adrian-Cohoctah and Houghton associations) that formed where glacial melt-water had formerly been impounded. This portion of Segment 5 (and also Segment 6) and surrounding agricultural lands have been greatly modified and extensively ditched to facilitate agricultural production. The eastward flowing Dowagiac Drain forms the primary means by which very poorly drained soils are relieved of their water content. No

shovel testing was performed by surveyors until they reached a point where the 750 ft (228.6 m) contour crosses the corridor in the NW 1/4, NW 1/4, SE 1/4 of Section 25, Hamilton Township (T4S R15W), Van Buren County, Michigan in Segment 7 of the power transmission line ROW.

Segment 6 (Fig. 7)

Because of the continuation of extensively altered muck soils into this segment of the route, no shovel testing was performed by the survey team, and visual survey proved unrewarding.

Segment 7 (Fig. 8)

That point in this segment of the route where shovel testing

resumed lies immediately southeast of a northward turn in Celery

Center Road on the west side of the Amtrak rails. Testing at 20 m

intervals continued until the corridor turned to the east and crossed

a plowed field before passing between Mud Lake on the north and a

complex of sewage holding ponds on the south. Thereafter, the

corridor continues in an easterly direction along the northern edge

of an agricultural field prior to turning north and terminating at

the Valley Station on the southeast side of Decatur, Michigan.

All fields accessible to us were visually surveyed, and the

very last portion of the study area was subjected to shovel testing

at 20 m intervals. No testing, however, could be undertaken along

the ROW where it passes between the lake and the sewage treatment

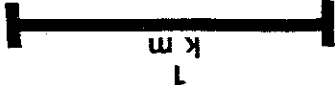
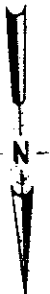
facility due to very wet soils and landscape alteration preceding

construction of the sewage lagoons.

RESULTS OF THE PROGRAM OF RESEARCH:

During the course of our on-site assessment of the proposed

power transmission line corridor, the survey party recorded two



not tested



visual surface survey

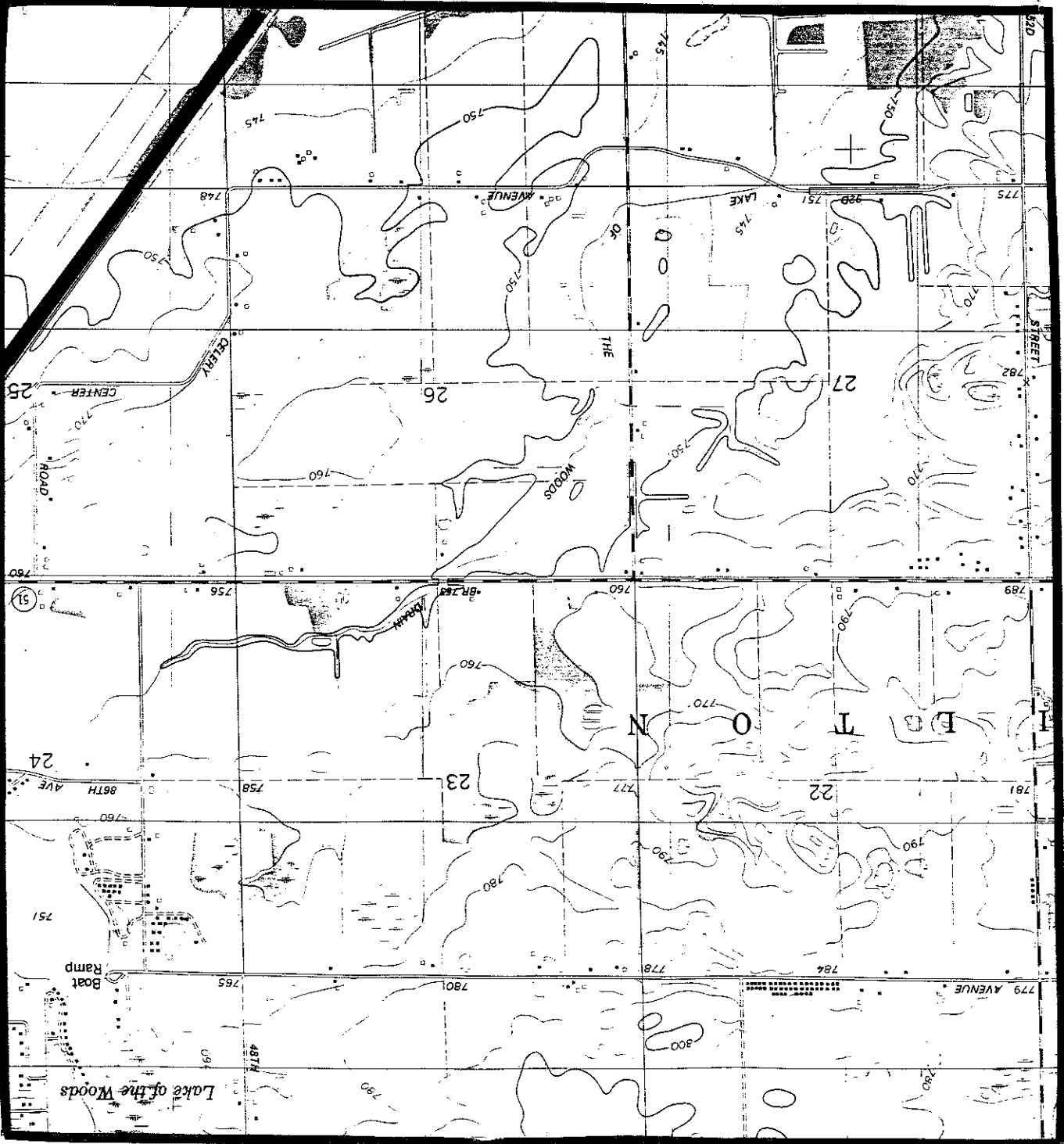


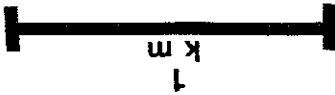
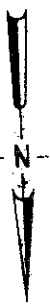
10m test interval



20m test interval

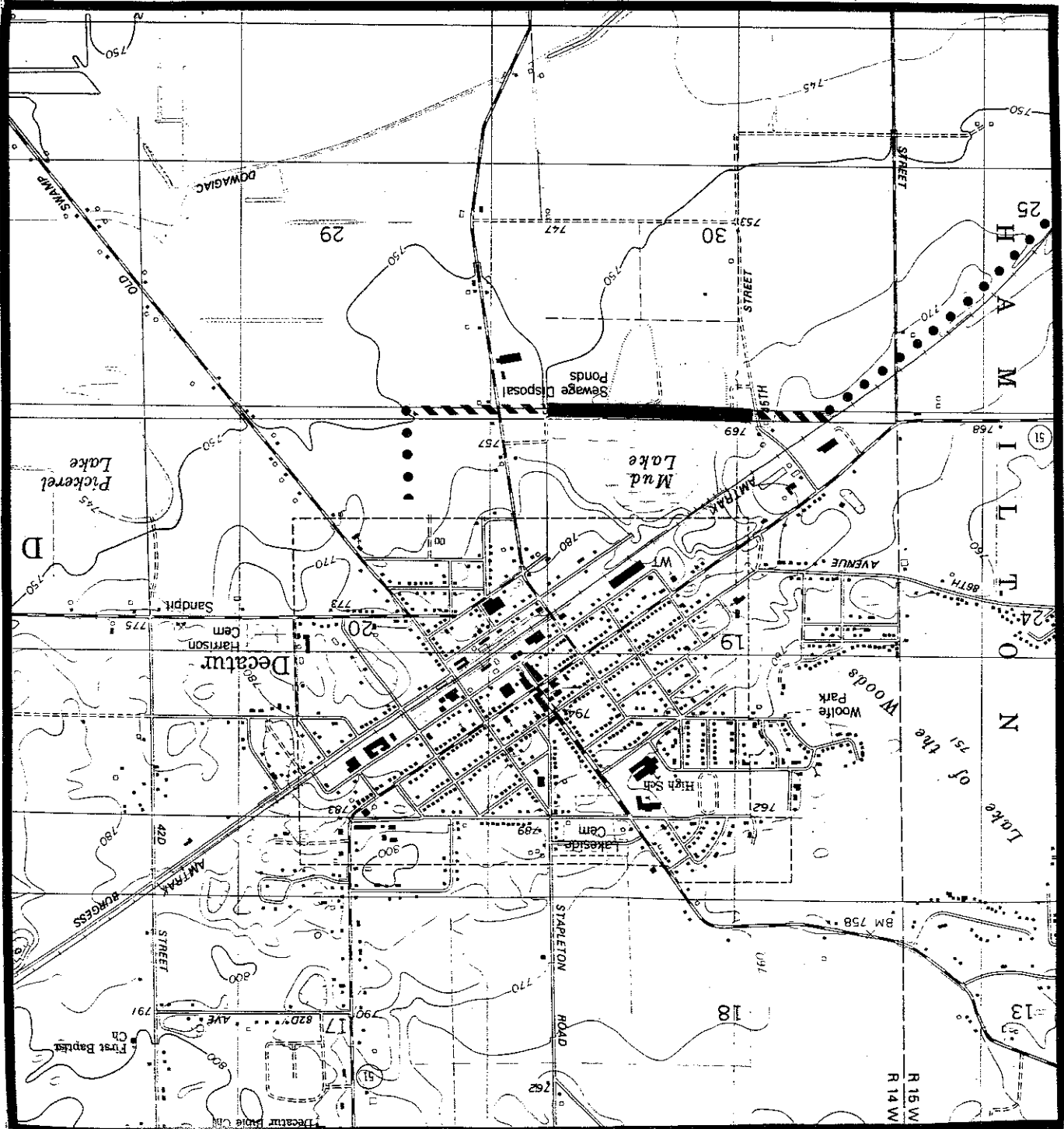
Fig. 7
Route Segment 6





20m test interval
10m test interval - - - - -
not tested visual surface survey

Fig.8 Route Segment 7



previously unknown archaeological sites, 20CS102 and 20CS103, but failed to conclusively confirm the existence of a previously recorded site, 20CS88. While we initially identified three specimens recovered from shovel tests placed along the periphery of this site, where the Amtrak ROW and MPC corridor would appear to bisect it, as lithic reduction flakes (see letter from Cremin to K.L. Smith, 8 May 91), more refined analysis casts the original interpretation in doubt. Thus, while 20CS88, as mapped, occupies a knoll situated above a creek and associated marsh to the east of the corridor, and may well extend to a similar landform on the west side of the railroad tracks, there is no evidence for its presence in the intervening study area.

As noted previously, surveyors recorded the Kenzie Creek Station site (20CS102) near the southern terminus of the project area. It is estimated to encompass about 2000 m² of a small knoll in the SW 1/4, NW 1/4, SE 1/4 of section 5, Howard Township (T7S R16W), Cass County, Michigan. Excellent surface visibility in a recently plowed field facilitated recovery of a projectile point and 12 pieces of debitage. Represented in the debitage are: two primary flakes and three block fragments of Purple chert; one decoration flake of Lambrix chert; and four decoration flakes, one primary flake, and a secondary flake of unidentified raw materials. Purple and Lambrix are locally available raw materials, possibly representing variations of a single raw material type (Cremin et al. 1991:16). Purple chert has been long recognized as a constituent of southwest Michigan glacial tills and is particularly abundant in the general area of the project (Clark 1984). During the course of project fieldwork, surveyors noted and collected several excellent glacial cobbles of Purple chert. Those materials which were not identifiable to source have

rounded and weathered cortex, suggesting that they were derived from local tills. Therefore, it is quite probable that 100% of the debitage is local in origin.

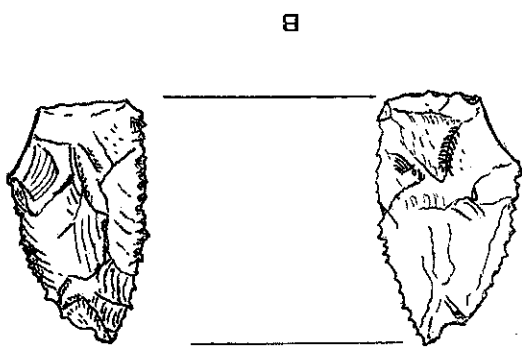
While admittedly a small sample, it is nonetheless interesting to note that 89% of the flakes assigned to a specific reduction stage are either decoration or primary flakes; debitage which represents the initial stage(s) in the reduction process. If we include block fragments as another early stage reduction indicator, as Clark (1984) suggests, then the total rises to almost 92% of all specimens of debitage. Based upon the abundant glacial till available in this area, lithic activities at the site can be interpreted to reflect a concern with procurement and initial modification of raw materials.

The only tool recovered from 20CS102 is a bifurcate base specimen (Fig. 9; A) manufactured on Lambrix chert. This bifurcate base has an asymmetric triangular blade with a maximum width of 22.2 mm at the most proximal portion of the blade. The lateral margins are relatively straight and exhibit slight serration. The blade is 18 mm in length, while total point length is 29.9 mm. This point is biconvex in cross-section, with a maximum thickness of 7.1 mm. The hafting technology exhibits a straight to slightly expanding stem which has been shallowly bifurcated at the base. The base has been bifacially thin, but evidences no grinding. Two burin-like facets are visible on either side of the basal bifurcation. The width of the stem is 13.5 mm at the base and 12.2 mm at its most distal extreme. The shoulders of this specimen are asymmetric and form an obtuse angle with the stem.

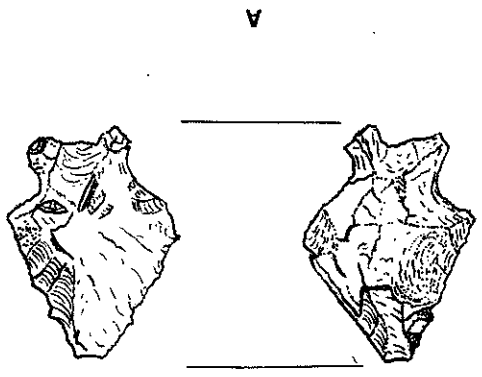
Blade shape, degree of serration, hafting technology, and basal treatment of this bifurcate are remarkably consistent with those of the

L. WALK
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Fig. 9: Diagnostic Artifacts from 20CS102 and 20CS103.



DRAWN TO SCALE



Early Archaic Lake Erie Bifurcate Base point (Justice 1987:92-95; Pruffer and Sofsky 1965). Although this point type has not been radiocarbon dated in the Great Lakes region, Justice (1987:95) assigns it to the period between 5300-5800 B.C. The distribution of this point includes much of Ohio, Indiana, Illinois, and the lower portions of Wisconsin and Michigan (Justice 1987:95). The second site recorded, Dewey Lake Street (20C5103), is located along the Amtrak ROW in the SW 1/4, SE 1/4, SE 1/4 of Section 3, Wayne Township (T55 R15W), Cass County, Michigan. It is about 70 m north of the Dewey Lake Street crossing and has been defined on the basis of the recovery of a Madison point and a single lithic reduction flake. A second flake, also recovered from the ground surface, was found approximately 100 m from the original findspot. No attempt has been made to estimate site area, inasmuch as shovel tests excavated to augment recovered surface information were all negative.

The initial find, a secondary flake of an unidentified material, and a decoration flake of Purple chert tell us little about the nature of lithic resource procurement and reduction at Dewey Lake Street. However, the Madison point is indicative of a temporal placement of ca. A.D. 1200-1600 (Clark 1984:161). This specimen is a finely made triangular point with slightly excursive margins tapering toward the tip. The blade margins have been extensively pressure retouched, resulting in strongly serrated edges. The base is straight, bifacially thinned, and unground. One corner of the base and a portion of the tip are missing. This point has a maximum thickness of 4 mm and an estimated original length of 33 mm and width of 19 mm. This specimen is illustrated in Figure 9 (B).

RECOMMENDATIONS:

Having performed a systematic and intensive examination of the project area, we come away with the overall impression that the

transmission line corridor throughout most of its length has been heavily impacted by construction and maintenance activities associated with the Amtrak rail line and numerous crossings of both roads and streams. Much of the area tested proved to be considerably altered from its natural configuration, most commonly in the form of filling in order to raise the raised above adjacent wetlands. Ditching to facilitate drainage has also severely altered the landscape along the ROW, to the point in some instances that

no original ground surface survives. The potential for meaningful archaeological resources to survive under these conditions is slim; this is especially true with respect to archaeological context or site integrity. Surely, those portions of the corridor crossing streams and marshes provided attractive locations for aboriginal resource procurement and/or settlement, but the linear nature of the project area, together with the sorts of disturbance noted above, significantly reduced our chances of observing/identifying such site loci.

It would appear from the results of our survey program that little if any impact on potentially significant archaeological resources will result from the proposed transmission line corridor. Even with respect to the two sites we did record, the potential impact should be absolutely minimal. First, the nature of each resource is such that we are reluctant to assign much significance to sites which yield very small quantities of information in light of the excellent surface visibility afforded surveyors while examining

them. More importantly, the sites identified in the corridor will hardly suffer from the little grading or alteration of the existing landscape that is required to erect the power transmission line. It is our understanding that the typical tangent structure selected for the project is a single wood pole, horizontal pole structure of 19 in (47 cm) - 30 in (75 cm) diameter at the base, with a three wood pole structure for angles of greater than 20°, and with an average span between structures of 350 ft (105 m). This translates to approximately 209 pole structures for the entire length of the transmission line (Johnson, Johnson, and Roy 1991:6-7). In the final analysis, the observed impacts within the proposed corridor, the limited occurrence of known archaeological resources, and plans for a transmission line that should minimally disturb sites where they do occur, when taken together, argue strongly for a statement of "no effect". It is our recommendation that the proposed construction of the power transmission line from the Kenzie Creek Station to the Valley Station in Cass and Van Buren counties be permitted to proceed as planned.

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