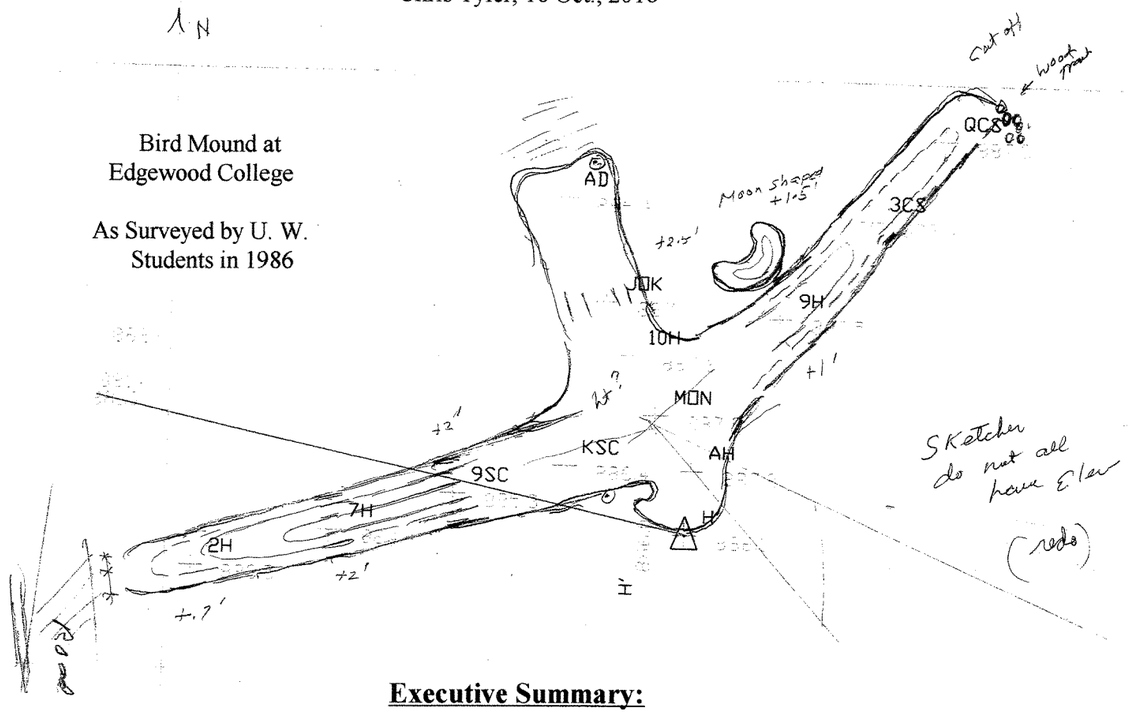
Proposal for Surveying Indian Mounds at Edgewood College
(Beginning in the fall of 2018)

By: James P. Scherz and
Chris Tyler, 18 Oct., 2018



Executive Summary:

This is a proposal to survey the earthworks on the campus of Edgewood College using accurate field methods developed by surveying students from U. W. Madison, and by volunteers from the Ancient Earthworks Society (AES) over the past 30 years. These techniques were developed in the 1980s and 1990s as part of education for advanced surveying students at U. W. Madison who wanted field experience with what was then advanced field methods. They determined directional control for their maps by celestial observations (star shots and sun shots). Such techniques are no longer generally taught in surveying courses. True north can be established by star shots or sunshots to an accuracy of better than 0.01 deg.

In 1986, a team of these surveying students attempted to survey the earthworks at Edgewood College. But they were not completely successful due to some blunders and a lack of time. Also, the surveyor T. H. Lewis surveyed two effigy mounds on the campus in 1888 using the older and much less accurate Surveyors Compass and a tape. We can expect errors in direction from the magnetic compass of about 2 degrees or more. Since the 1800s, other maps have been made of mounds on campus, with directional errors appropriate for the period.

From studying geometry in many Indian mounds and from bits of Native American lore, we have concluded that special Native American surveyors in the ancient lodges or outdoor colleges could lay out geometry in the effigy mound groups to an accuracy of at least 0.1 deg. Our celestial observations are indeed about a magnitude better than this. It follows that the geometry from our resulting maps will be more than adequate for reliable geometrical analysis, calendar directions to the rising or setting sun and moon, and long range alignments to distant sites (which Natives refer to as Thunderbird Lines).

In the past, people surveying Indian Mounds have used the visual appearance for the edges of the earthworks. We teach our students to feel the edges of the mounds with their feet, which is much more accurate, will work in ground with obscuring vegetation, and can still locate the edges of the mounds should they have been dug into or otherwise defaced. In 1986, surveying students from U. W. Madison began a survey of the Indian Mounds at Edgewood. Using such techniques, they mapped a beak on the bird mound and a small crescent mound under its eastern wing. These details did not show up on any previous map.

T. H. Lewis chose to survey two of the effigy mounds (now on the campus) in 1888. He mapped a bear mound and a panther (or water spirit) mound. Modern maps of the campus show two bear mounds. Both should be carefully mapped and compared in size, shape, and orientation to a map of the feature reduced from the Lewis notes to see which mound he mapped. Also the remains of the so-called Panther Mound on campus should be carefully mapped and compared to the map reduced from the Lewis Notes.

In the Lewis notes for the Panther Mound, he described a long embankment to the SE. The students in 1986 did not have time to finish sketching the Panther Mound. But they did map a long linear earthwork SW of what they took to be a Panther Mound. Records from the Madison Metropolitan Sewerage District show that a city sewer line apparently goes down the middle of part of the linear earthwork that the students mapped.

Modern Lidar Imagery suggests that the linear earthwork that the students mapped may have once extended further eastward to SE of the Panther Mound, and that the eastern end of this feature may have been damaged (if not mostly destroyed) by road construction .

We propose to do a precise re-survey of all of the known and suspected ancient earthworks on campus using the most reliable methods available to us. And we propose to do soil sampling with a 1 inch soil probe on the long linear feature with the sewer down the middle. This should shed some light on its probable origin. If appropriate, more complete analysis could be done with Ground Penetrating Radar (GPR) on this linear feature, as well as on other suspected earthworks which could conceivably have once been Indian Mounds.

The field surveying is best done between late fall after the leaves drop and mid May when they return. Soil sampling of the mysterious linear feature must be done before the ground freezes. I have been told that some GPR analysis can be done at any time. We would like to start our preliminary surveys in November of 2018.

For Notes

Proposal for Surveying Indian Mounds at Edgewood College
(Beginning in the fall of 2018)

By: James P. Scherz and
Chris Tyler, 18 Oct., 2018

To: Larry Johns
Officials of Edgewood College

Purpose of Document:

During past months, staff from Edgewood College and from the Ancient Earthworks Society (AES) discussed surveying the ancient earthworks on the campus of Edgewood College using methods we developed over 30 years to precisely map Indian mounds. These techniques include feeling the edges of known mounds with our feet and then determining their precise orientation to true north using celestial observations (sunshots in the daytime). Our experience has been that if the site has not been overly disturbed that the resulting geometry is clearly related to (1) true or celestial north (which is almost always purposely encoded with easily made angles such as 15 deg., etc.), (2) directions to set calendars to where the sun and moon will rise and set (on solstices, equinoxes, and cross quarter days, etc.), and (3) in many cases to long range alignments tying different sites together in a giant map work across the landscape.

At the time of initial discussions, we also considered using the mounds at Edgewood as an outdoor training lab for new AES students who also wanted to learn how to map Indian Mounds. Since that time, we have received permission to use the mounds at Yahara Marsh for such an outdoor lab (an open area, ideal for such an outdoor lab). But we are still interested in precisely surveying the earthworks on Edgewood Campus, if school officials are still interested. This document is a proposed plan for doing such work. The plan includes incorporating work by U.W. surveying students in 1986, who began a survey of the earthworks at Edgewood. It also includes a way that we might be able to solve a nagging puzzle from their preliminary work. It is the origin of a long linear mound which has a city sewer running down the middle of it.

Background:

In 1986, advanced surveying students at the University of Wisconsin at Madison, in a course of independent study (to increase their field surveying experience) spent many hours surveying what they thought were Indian Mounds on the campus of Edgewood College in Madison, Wisconsin. Their field equipment included theodolites with stadia hairs for measuring shorter distances, and for long traverses, an early version of laser distance measuring called a "Beetle." Details of the mounds between points shot were to be filled in with field sketches using surveying tapes and extended level rods. Directional control was by use of sunshots. These, if done correctly, define true north to better than about 0.01 deg. With such accuracy, it is possible to reliably analyze the layout geometry of the mounds, which appear to have been done from true north defined by the stars. The accuracy of the ancient New World surveyors appears to have been to about 0.1 deg. As all surveyors gaining experience must endure, the students had some problems with blunders and finding where they were and correcting them. Part of their planned work was completed. But not all of it.

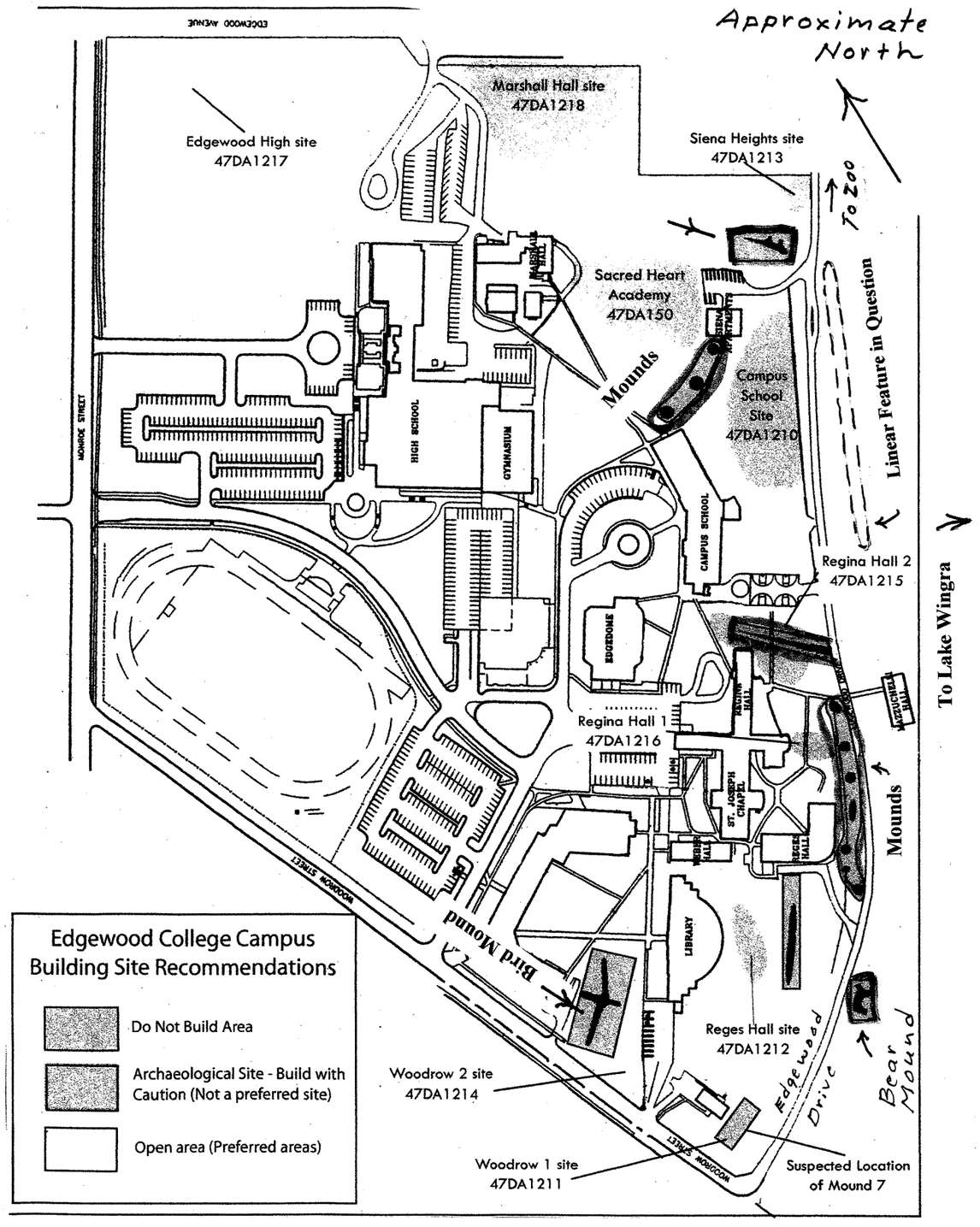
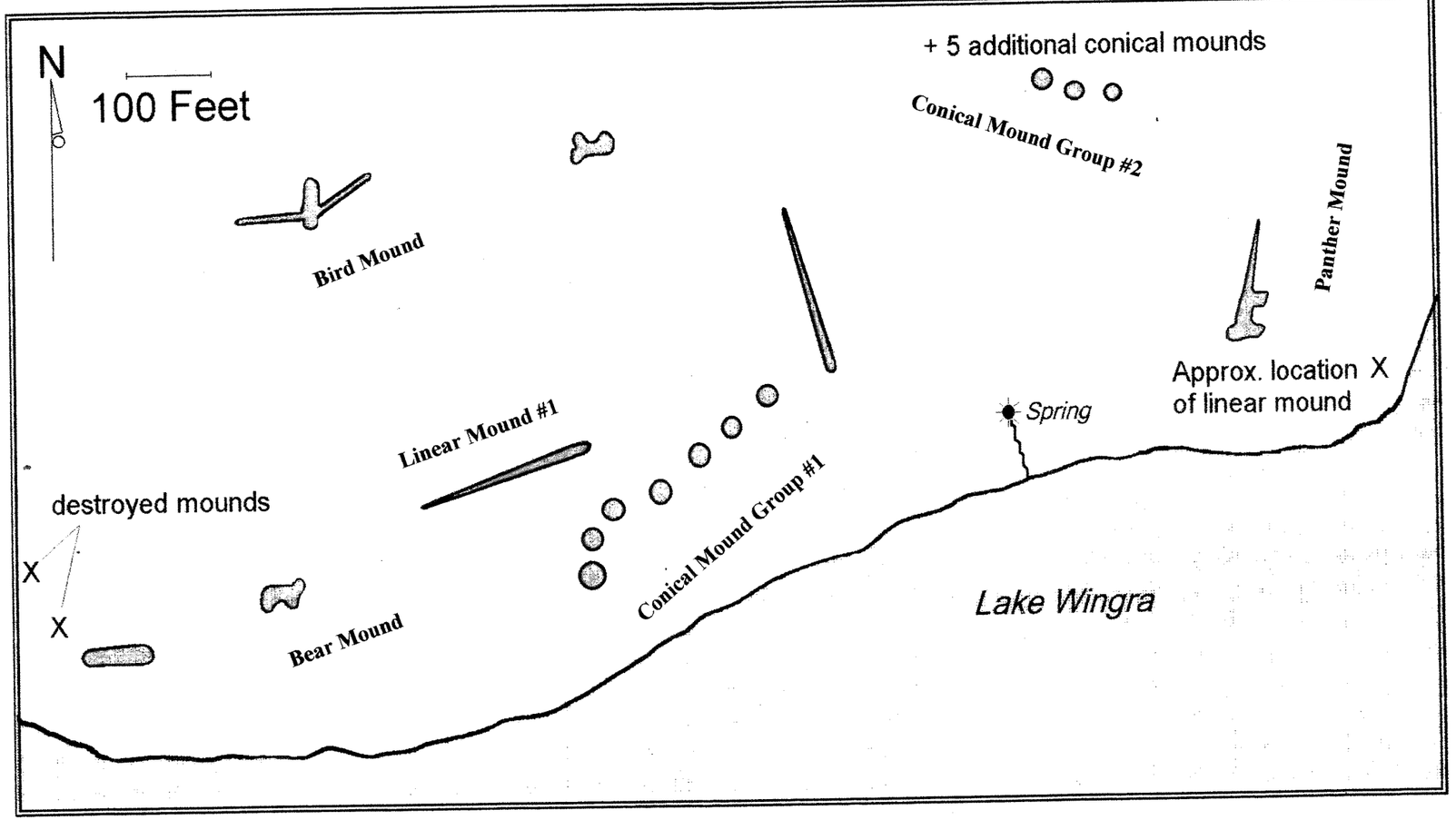


Figure 1. Present map of earthworks at Edgewood College

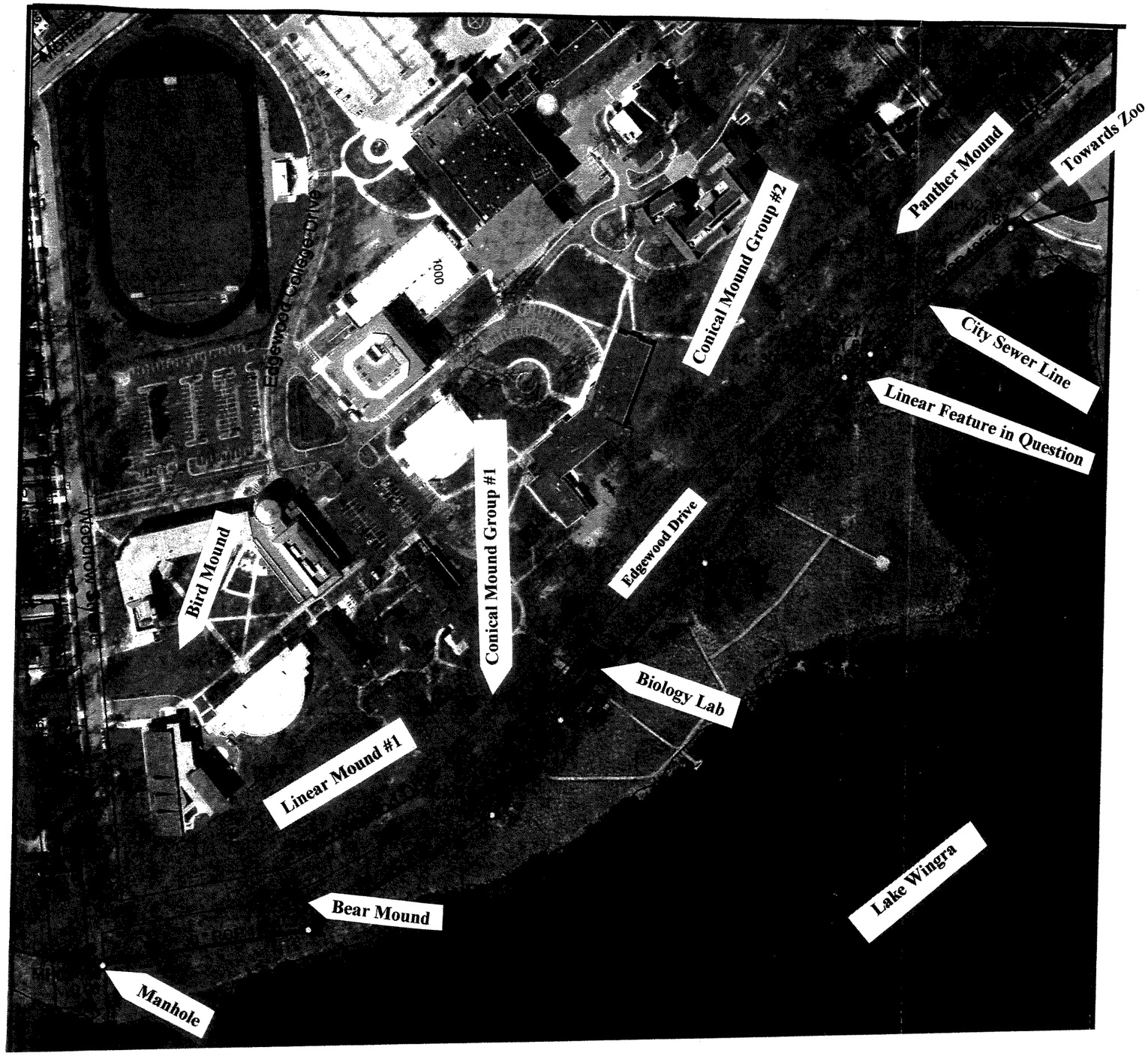


Edgewood

Dane County, Wisconsin
47-DA-0147
Lewis 1885-1888b: 5/ C. Brown 1915: Plate 9

Scale and North
only Crudely Approximate
JPS

Figure 2. Map of Mounds at Edgewood College
(from data provided by Ashleigh Ross)



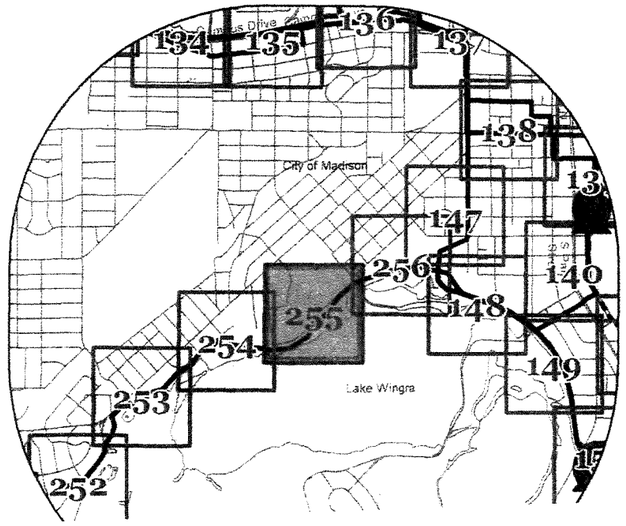


Figure 3. Aerial Photo Map of Edgewood College
(also showing City Sewer Line and Manholes)
--From Madison Metropolitan Sewerage District,
2014 Fly Dane Project Imagery, Mapsheet: 255 --

Attempt to Survey Mounds at Edgewood by Students in 1986:

The students in 1986 only essentially completed mapping the large bird mound and some mounds along the road to their satisfaction. See Figure 4, and Figure 6. Compare these to the maps of accepted mounds on campus (Figure 1 and 2).

From the Bird Mound, the students ran a traverse leg eastward over the campus to include some rises in the earth which they thought might be Indian Mounds. But their main traverse went south from the Bird Mound to the road along the lake (Edgewood Drive) and then eastward towards the zoo. Although the Bear Mound shown in Figure 1 and Figure 2 was found, and a traverse card was placed near it, the students did not have time to place more points in the area and map the Bear Mound.

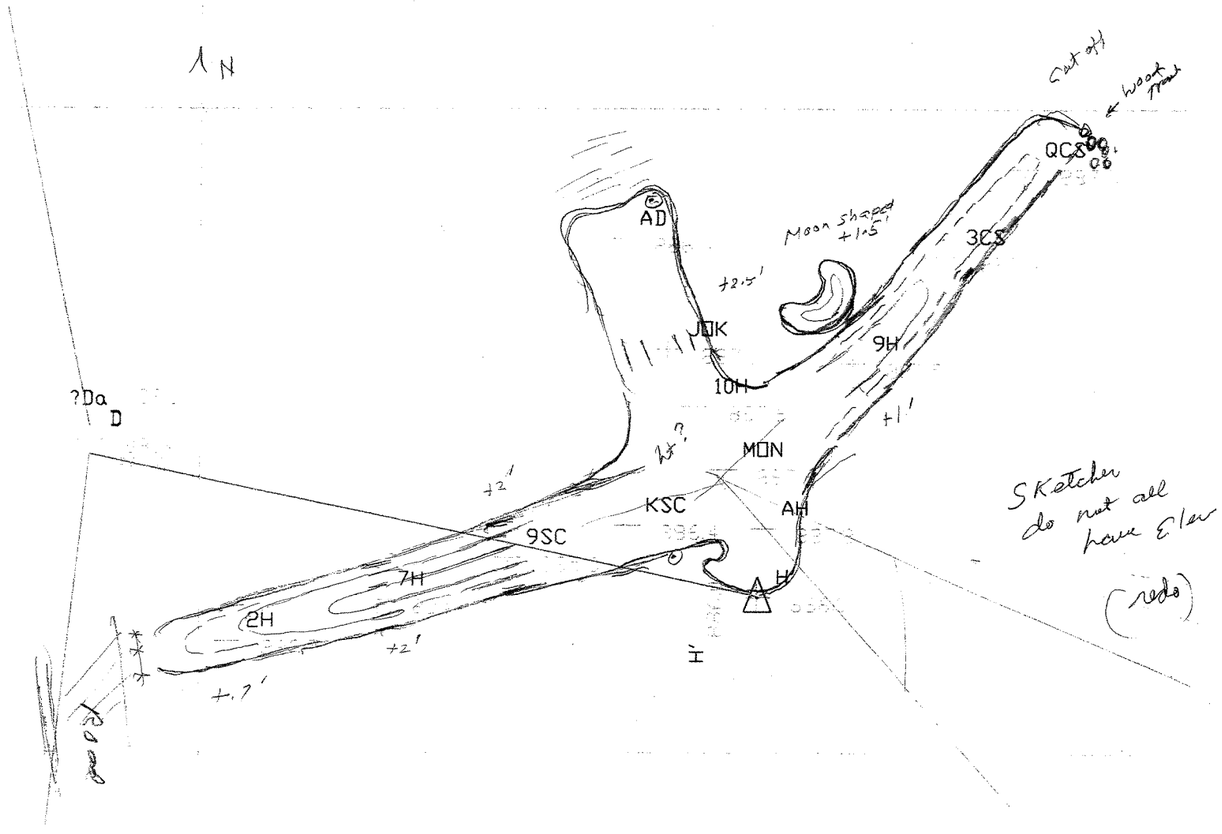


Figure 4. Incomplete Student Map of the Bird Mound

This Bear Mound was apparently surveyed by T. H. Lewis in 1888, but we only have his survey notes. (See Annex I .) Figure 5 is a map of a Bear Mound he surveyed in this area. The image in Figure 5 was compiled in 2018 from Lewis's survey notes. The mound shown as the Bear Mound in Figures 1 and 2 should be carefully surveyed to see if the orientation, size, and shape matches what Lewis surveyed in Figure 5 (so we can be sure that it is the same mound). The Bird Mound was not surveyed by Lewis, although he did survey a Panther Mound further to the east. The Panther Mound in Figures 1 and 2 should also be carefully surveyed to see if its size, shape, and orientation is the same as the Panther Mound that Lewis surveyed.

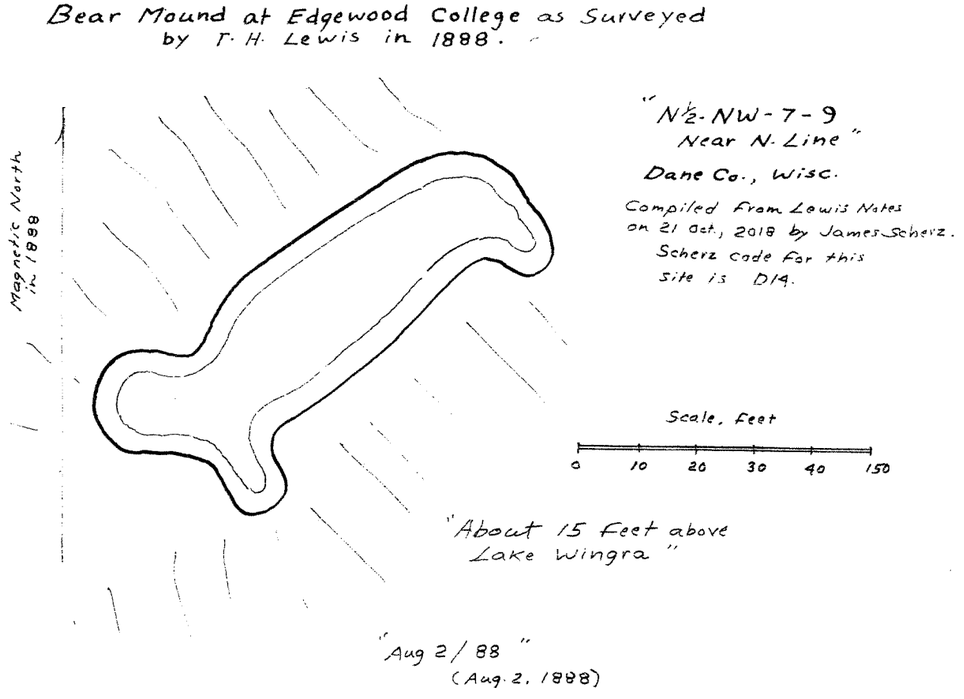


Figure 5. Map of the Bear Mound compiled from survey notes of T. H. Lewis
(See Annex I for his original survey notes)

The student traverse then went eastward along Edgewood Drive where they picked up some more earthworks including the conical mounds along the road (Conical Mound Group #1). The traverse then went further east to near what they called a Panther Mound. This appears to have been the one that T.H. Lewis surveyed in 1888. But the students did not have time to do a detailed sketch of this panther mound, nor reduce the survey notes of Lewis to confirm that this was the mound he mapped. (This work should be completed).

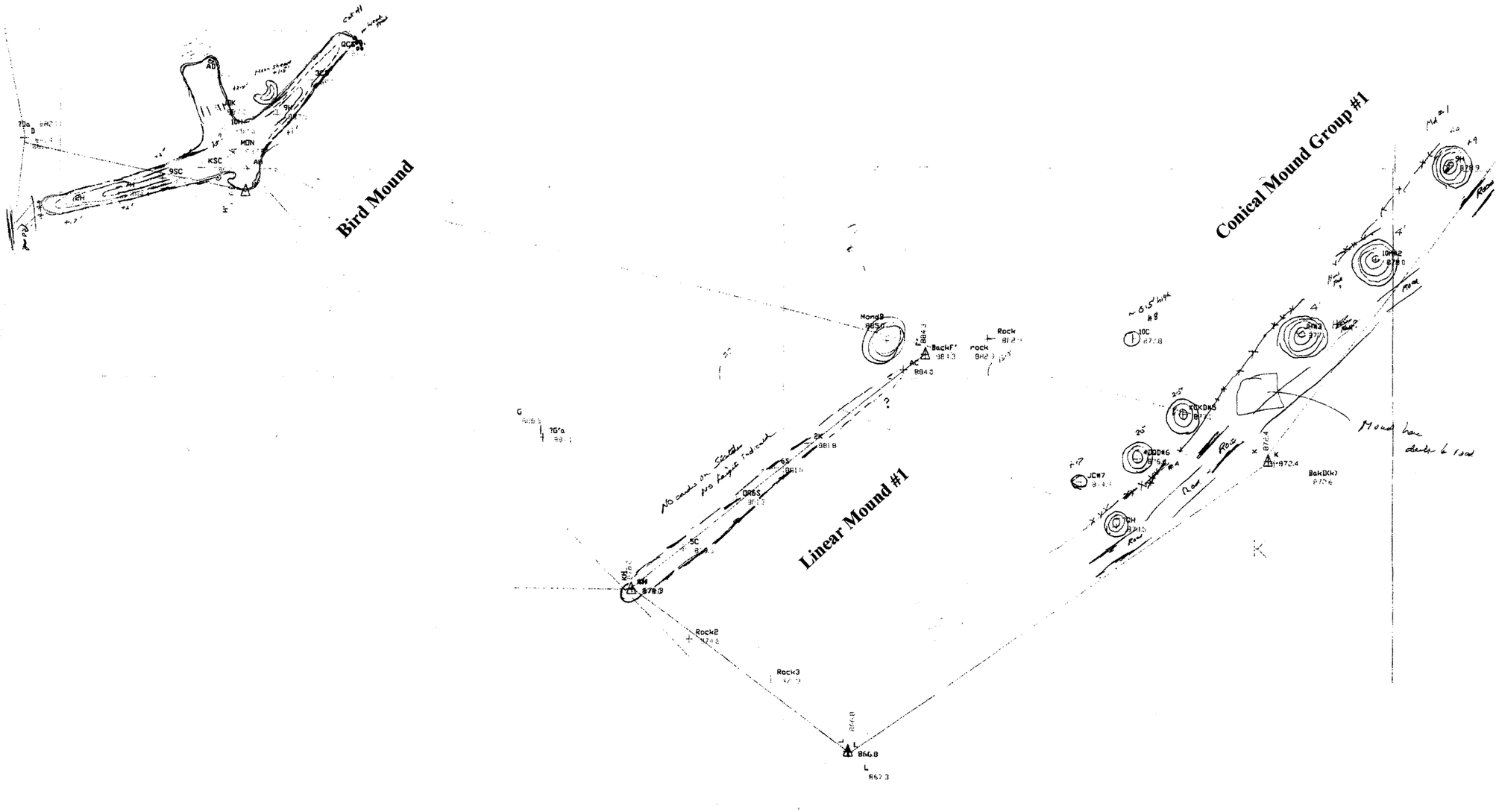


Figure 6.
Crude draft of the compilation map from student surveys in 1986 showing Bird Mound, Linear Mound #1, and Conical Mound Group #1
(As shown in Figures 2 and 3)

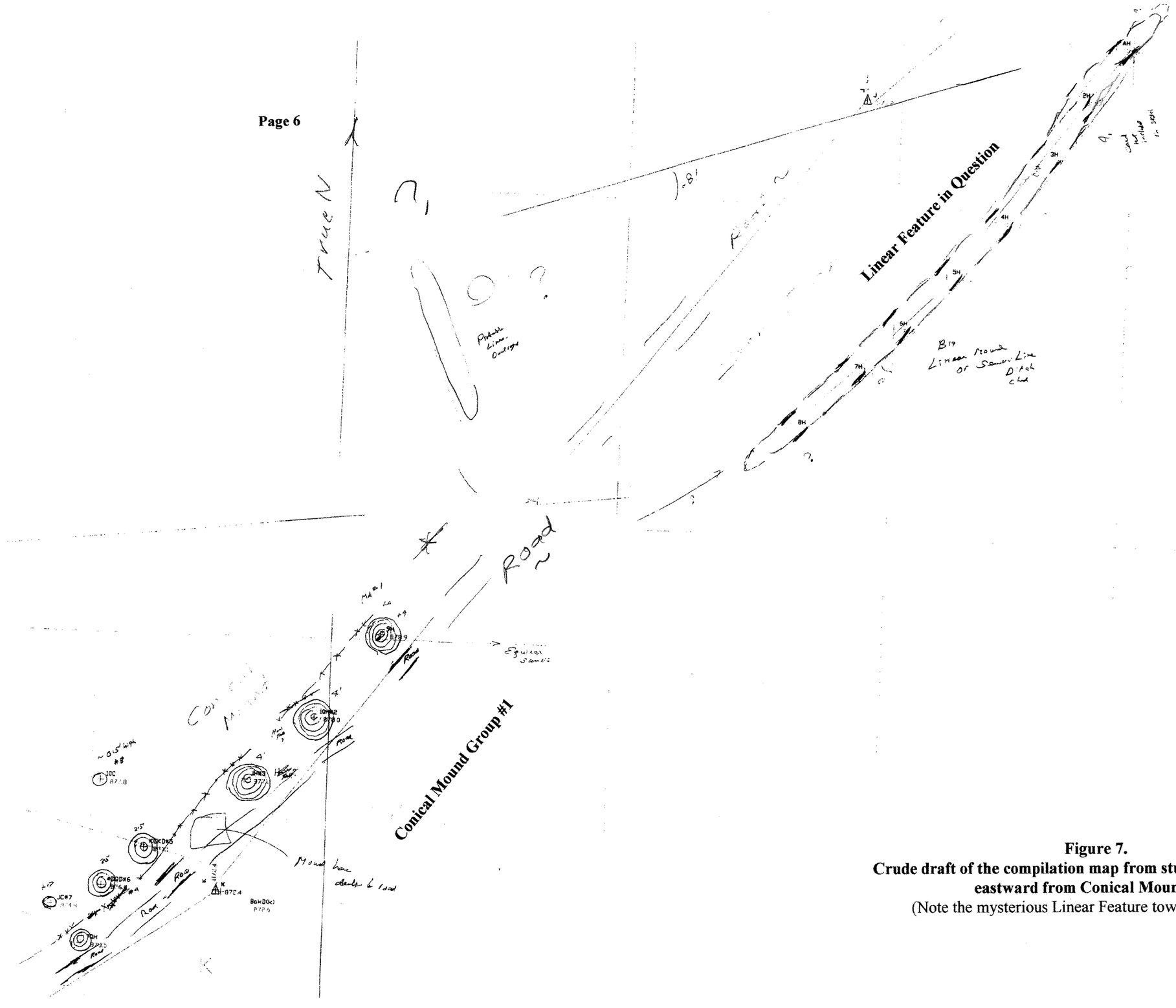


Figure 7.
Crude draft of the compilation map from student surveys in 1986 eastward from Conical Mound Group #1
(Note the mysterious Linear Feature towards the northeast.).

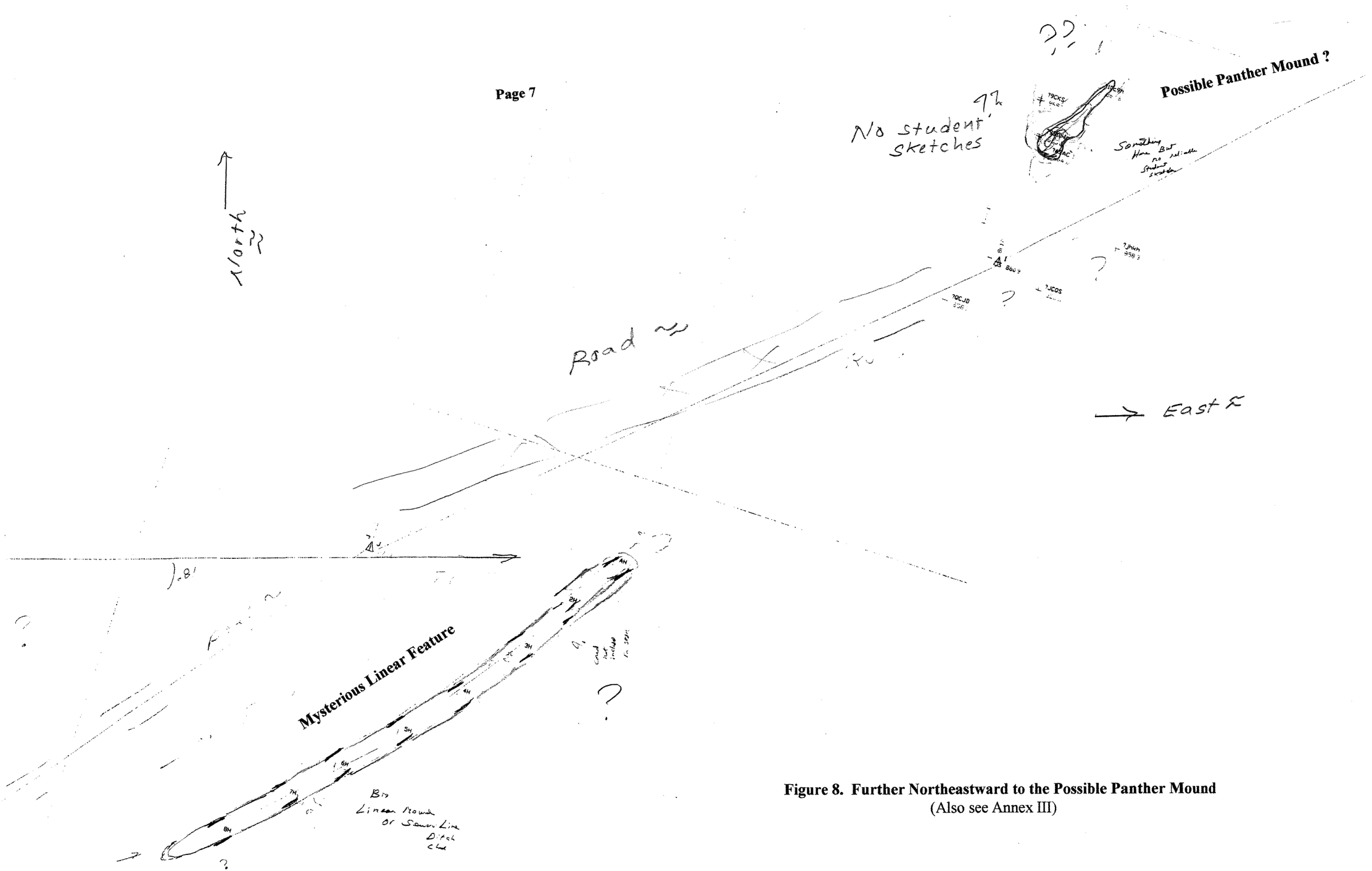
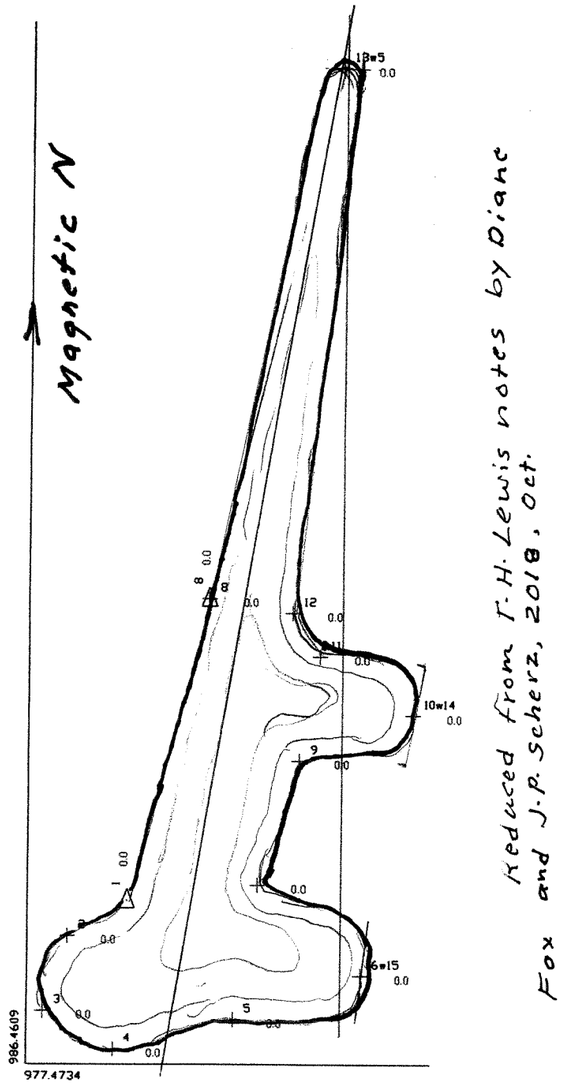


Figure 8. Further Northeastward to the Possible Panther Mound
(Also see Annex III)



"SE there is a long embankment."
"Aug 2/88" (Aug. 2, 1888)

Figure 9. The so-called Panther Mound as surveyed by T. H. Lewis in 1888
(Also see Annex II)

The Mysterious Linear Feature:

The surveying students in 1986 also surveyed what they thought was a long linear mound to the southwest of the feature which is likely the panther mound surveyed by Lewis. It is a clear and prominent linear earthwork about 2 to 3 feet high, and several hundred feet long. But I expected that a city sewer went down the middle of this earthwork. This suspicion was confirmed by checking records of the Madison Metropolitan Sewerage District (Annex IV). The sewer goes west from its intersection with Edgewood Drive to the Biology Lab and then further west to near the head of the Bear Mound. The biology lab of the College was constructed precisely over the sewer line. I could not see any visible sign in the summer of a linear mound near this lab nor west of it. This raised linear earthwork southwest of the Panther Mound in Figure 8 presents a mystery. Note in Figure 9 and Annex II that Lewis wrote that there was a "long embankment" SE of the Panther Mound that he surveyed. But the Mysterious Linear Feature is to the southwest of what is likely his Panther Mound.

Did Lewis write down that there was a linear mound SE of the Panther Mound when he meant SW? Or did the linear feature once extend further east of where it starts today, and did the southeast part of it get destroyed by the road?

Did the engineers who laid out the sewer line pile earth atop the sewer line from Edgewood Drive to just east of the Biology Lab for some unknown reason? Was there a gravel trail here leading to the lake before the sewer was put in?

Or did the engineers put a sewer line down the middle of what was left of an Indian linear mound? Soil testing with a one inch soil probe when we again survey the feature should shed some light on these possibilities. A more thorough analysis could also be done with Ground Penetrating Radar (GPR) after the surveys are complete.

In Figure 9, Lewis described a "long embankment" SE of the Panther Mound. If our assumed location of the Panther Mound is correct, then the mysterious linear feature should be SW of the Panther Mound. It could be that the linear feature that Lewis noted to the SE of the Panther Mound has now been completely destroyed by road construction. Another possibility exists that the mound that the students surveyed once extended further to the east, and this part of the mound is what Lewis referred to, and that the road only destroyed the eastern end of it.

Lidar May Help in our Analysis:

In late Oct., 2018, Larry Johns obtained Lidar imagery which covers Edgewood Campus. See Figure 10. This imagery indicates that there indeed may be remnants of this long linear feature which extends eastward from what the students mapped and might be consistent with the eastern end of the "long embankment" that Lewis noted was SE of the Panther Mound. This possibility should be thoroughly tested in our proposed new surveys in late 2018 after the leaves are down and before the ground freezes.

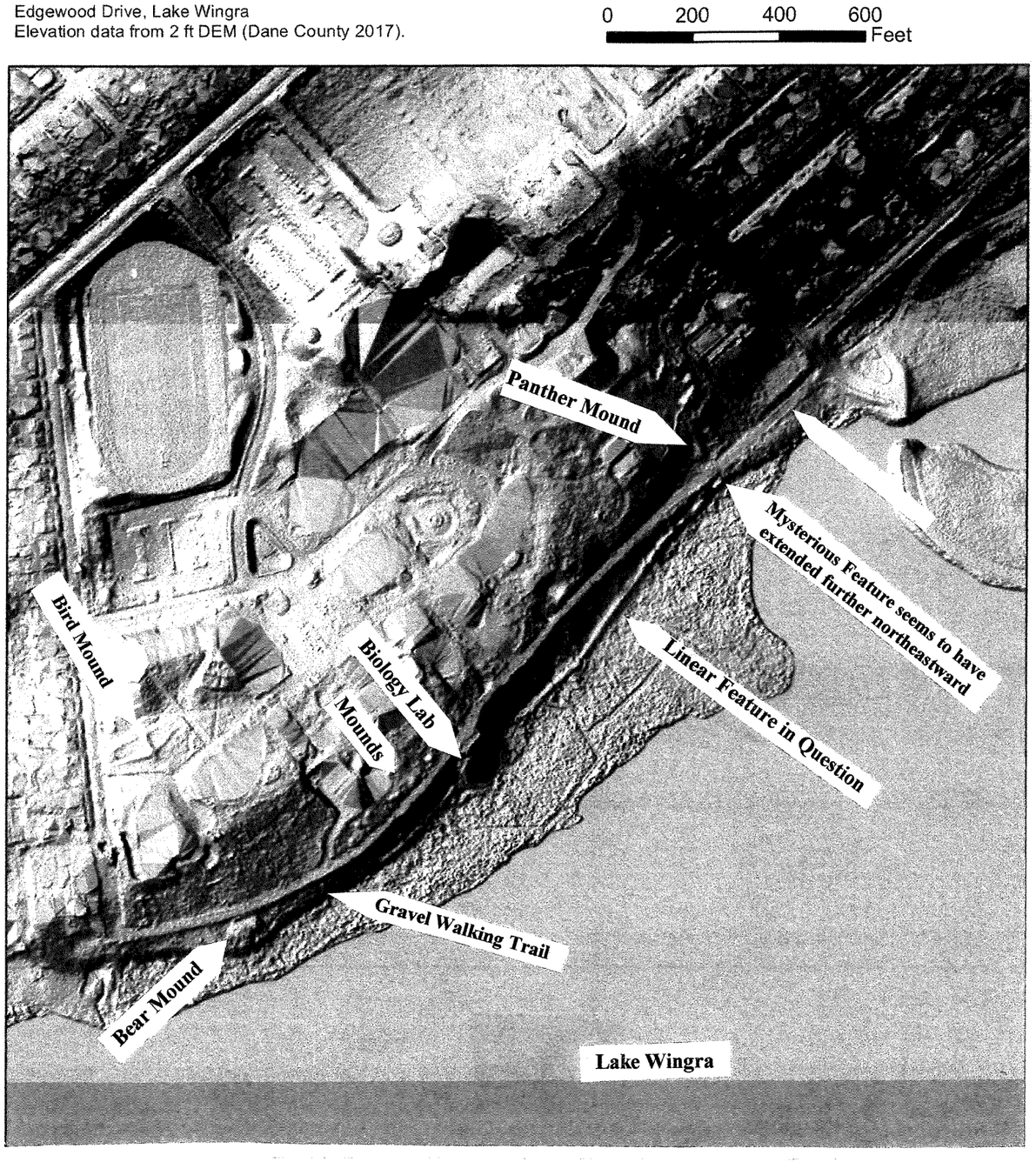


Figure 10. Lidar Imagery along the Lake south of Edgewood College
Image obtained by Larry Johns, Oct., 2018,
(from Michelle Richardson, Dane County Parks)

Proposed Work to Finish our Surveys at Edgewood College:

We propose to essentially rerun the traverses of the surveying students in 1986 and re-survey all the features that they noted, and any others that we suspect might be Indian Mounds. We will use Total Stations which are much more accurate and faster than the transits used in 1986. The traverse will begin on the east end of Edgewood Drive where directional control will be established using sunshots. Like many other survey traverses through the area (for property surveys, for sewer surveys, and for road work, etc.) we plan to set metal nails along the road or in the blacktop as permanent traverse stations. These can later be found with a metal detector if we want to check or expand our initial surveys. Chris Tyler has already made a recon sketch of where these traverse stations would be located.

From the traverse stations in the new survey, temporary points marked by wooden skewers through playing cards will be placed near known and suspected ancient earthworks. Any soil samples taken along the questionable long linear feature will also be precisely located and the soil profiles recorded and photographed. Other questionable features will be noted and surveyed for possible future testing with Ground Penetrating Radar. But no soil sampling will be done on any of these other features until after further study and consultation.

Between these temporary surveyed points, survey tapes will be stretched, and an extended level rod will be laid at right angles to the tape to create a grid for sketching in the details on and near the earthworks. The edges of the earthworks will be located by feeling with the feet. And approximate 1 ft. "form lines" will be estimated from the base of the mound so that the maps will reflect the shape and height of the Indian Mounds and suspected features.

The survey notes from the total stations will be reduced to a grid oriented to true north, and the coordinates for all points will be plotted on a master compilation map sheet at a scale of 1 inch equals 20 ft. (the same scale as the field sketches). Then the details from the field sketches will be transferred to the base map by use of a light table. An ink overlay tracing will be made from the final compilation map. This sheet will be examined for possible meaningful geometry, calendar function, and long range alignments to other mound groups. Annexs V and VI show final maps from other map groups we have recently surveyed.

In my view, the results from the surveys should be archived at Edgewood College if the staff is interested. Students and staff from the college are invited to participate in all the field work and the data reduction, to the extent that they are interested. They are also welcome to join our upcoming AES classes on how to map Indian Mounds.

Annexes:

Annex I : *T. H. Lewis notes for Bear Mound (1888)*
Annex II : *T. H. Lewis notes for Panther Mound (1888)*
Annex III: *Overall Crude Map from Student Survey attempts in 1986*
Annex IV: *Sewer Lines along Lake Wingra on Edgewood Campus*
Annex V: *Example of a final map from another site (The Ceex Haci Site)*
Annex VI: *Example of a final map from the Whistler Mound Group*
Annex VII: *Encoded Geometry related to True North*
Annex VIII: *Possible Involvement for Students and Staff at Edgewood College*

For Notes

Annex I : T. H. Lewis notes for Bear Mound (1888)

(Notebook No. 24)

- 52 -

N½ - NW - 27 - 7 - 9

Near N Line

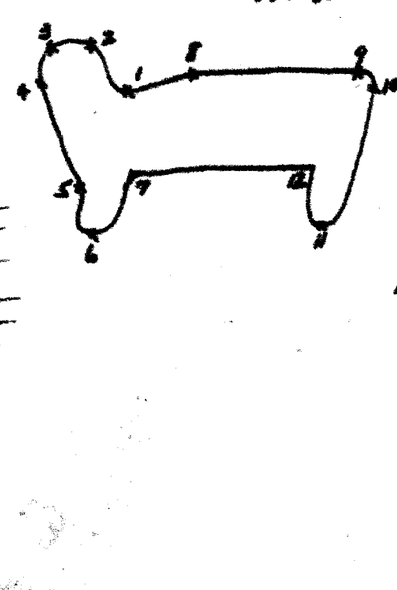
	(Direction	Distance	Bas.Diam.	Height)
Pt 1 to 2	N65W	10½		
1 " 3	S67½W	18		
1 " 4	S40½W	20		
1 " 5	S5E	17½		
1 " 6	S25½E	29	W 6	
1 " 7	S36E	19		
1 " 8	N30½E	13		
1 " 9	N50½E	52		
9 " 10	S53½E	13		
9 " 11	S46½E	27	W 6	
9 " 12	S29E	16½		

About 15 feet above Lake Wingra

Aug 2/88

- 52 -

- Opp. 52 -



- Opp.52 -

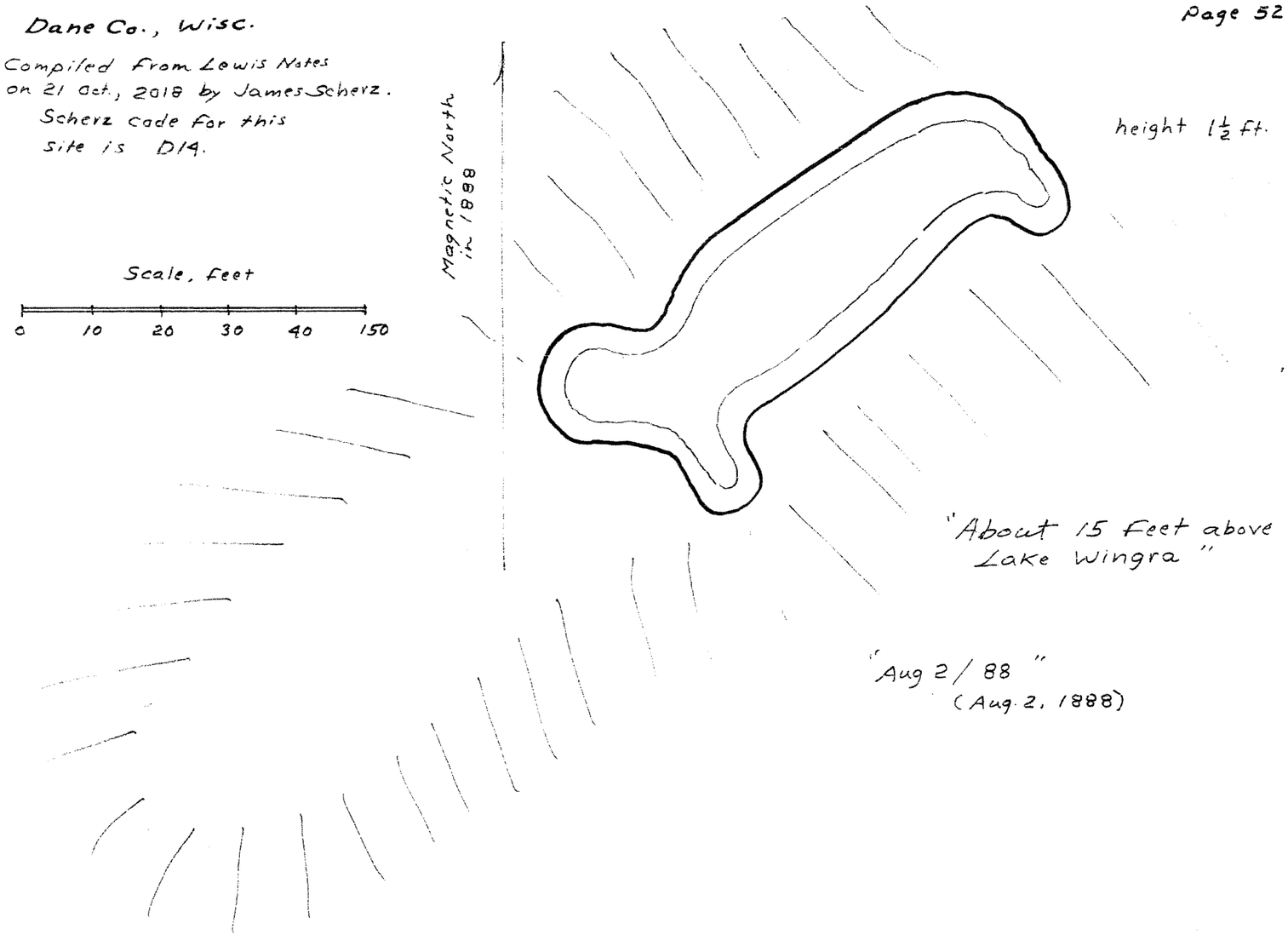
"N½-NW-7-9
Near N. Line"

Dane Co., Wisc.

Compiled from Lewis Notes
on 21 Oct., 2018 by James Scherz.
Scherz code for this
site is D14.

Bear Mound at Edgewood College as Surveyed by T. H. Lewis in 1888.

From Lewis Notebook 24
Page 52



Lewis Survey Notes for Bear Mound Reduced to Map Format

Annex II : T. H. Lewis survey notes for Panther Mound (1888)

(Notebook No. 24)

- 51 -

NW - NW - 27 - 7 - 9

	(Direction	Distance	Bas.Dim.	Height)
Pt 1 to 2	S59½W	9½		
1 " 3	S37W	19		
1 " 4	S5W	20½		
1 " 5	S42E	22		
1 "/ 6	S72E	33½	W 15	
1 " 7	N83½E	18		
1 " 8	N15E	43		
8 " 9	S29E	25½		
8 " 10	S39½E	32	W 14	
8 " 11	S6E	17		
8 " 12	S8OE	11½		
8 " 13	N13½E	75	W 5	

On the hill NW there are

8 round mounds

About 115 feet above Lake Wingra

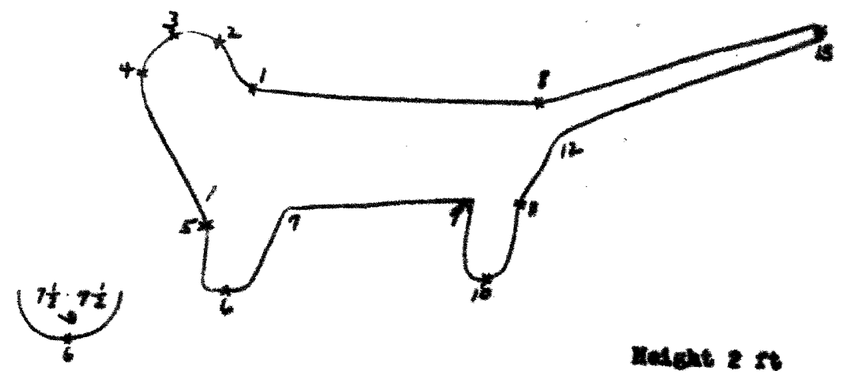
Aug 2/88

SE there is a long embankment

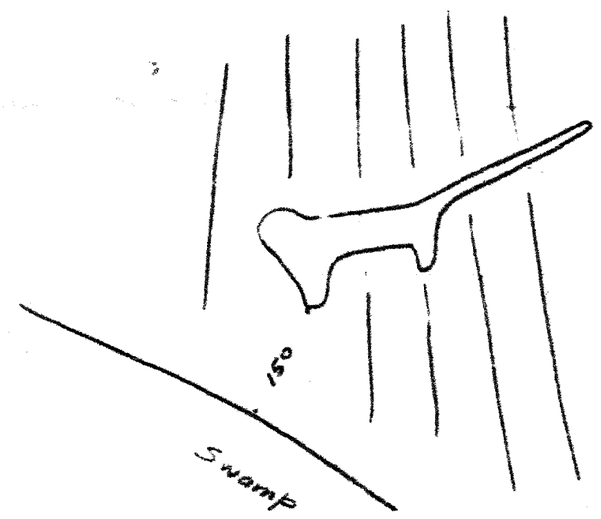
- 51 -

(Notebook No. 24)

- Opp. 51 -



Height 2 ft



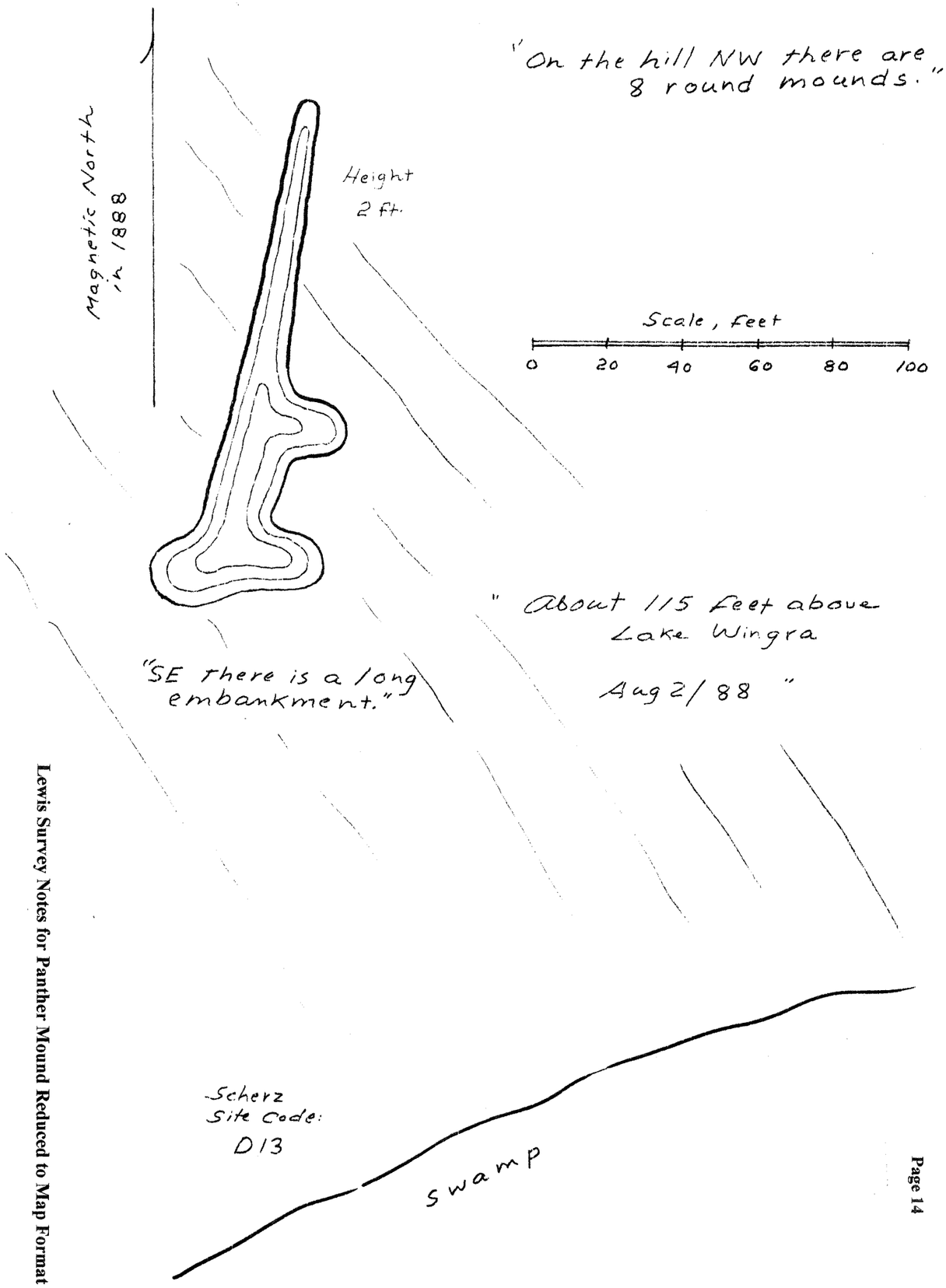
Edgewood College Panther or Water Spirit Mound

Reduced from T. H. Lewis Survey Notes: J.P. Scherz and Diane Fox in Oct., 2018. Lewis Survey was in 1888.

NW - NW - 27 - 7 - 9

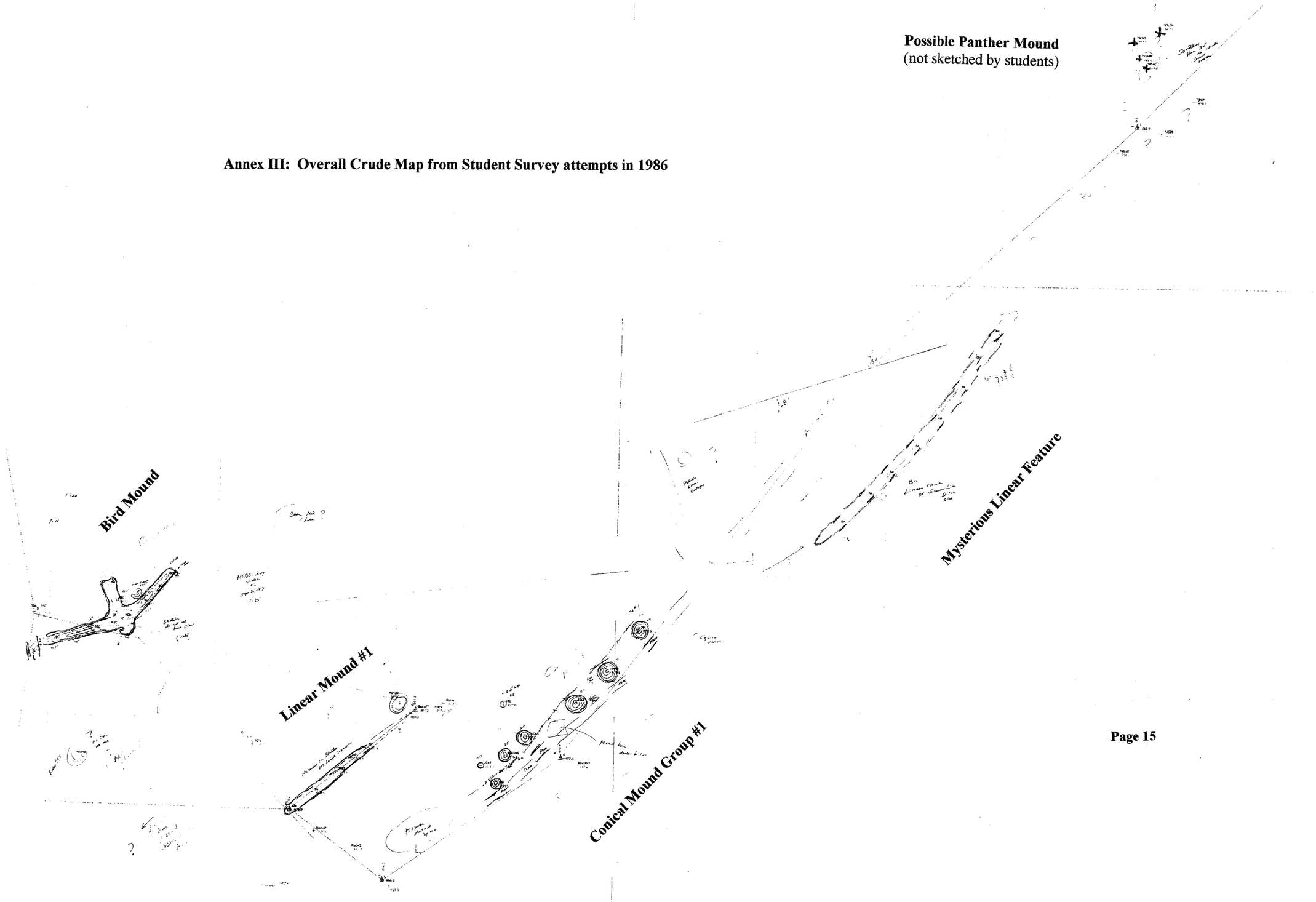
Dane Co., Wisc.

Lewis Notebook No. 24
P. 51



Lewis Survey Notes for Panther Mound Reduced to Map Format

Annex III: Overall Crude Map from Student Survey attempts in 1986

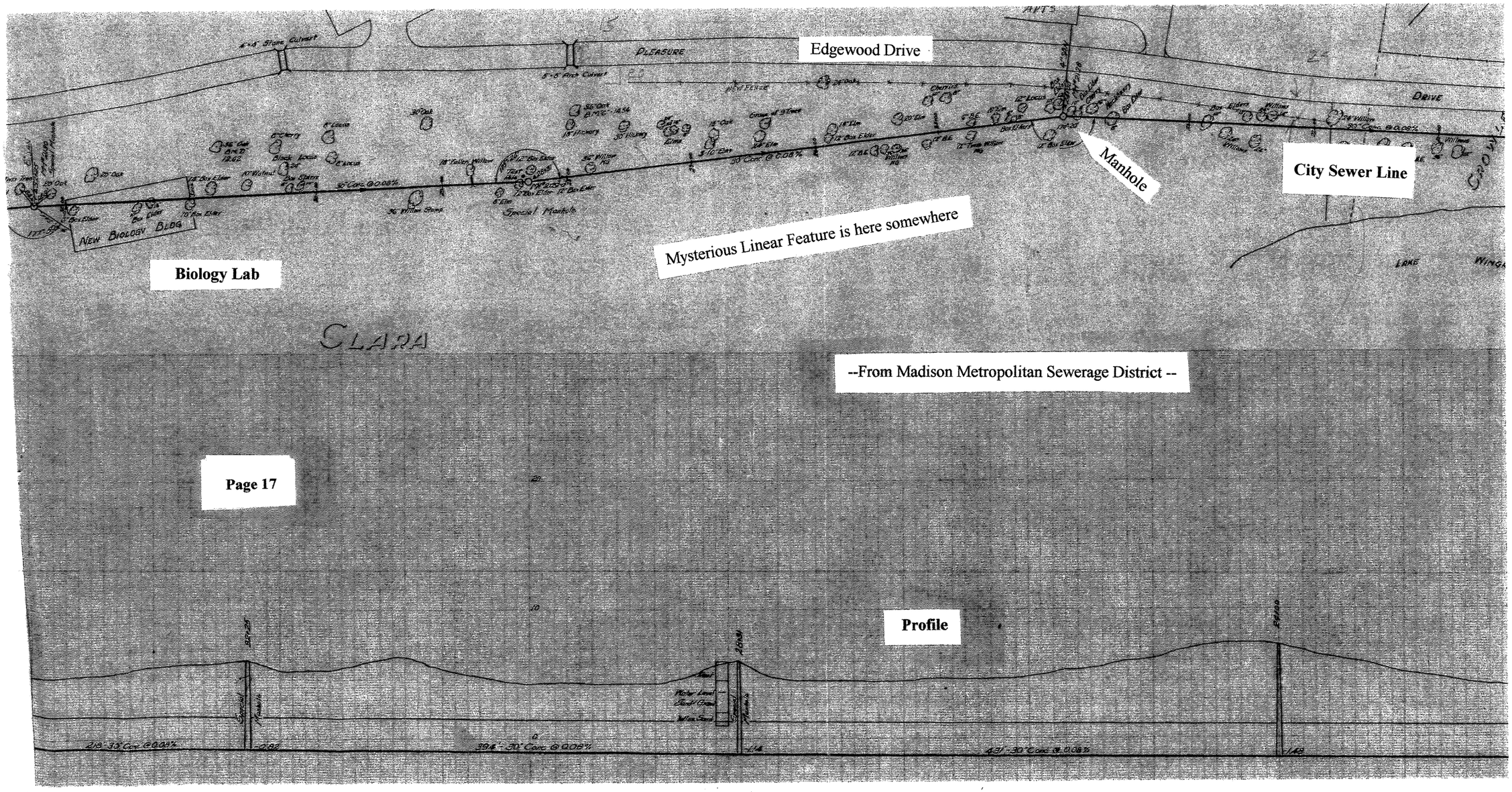


For Notes

← Westward to Page 18

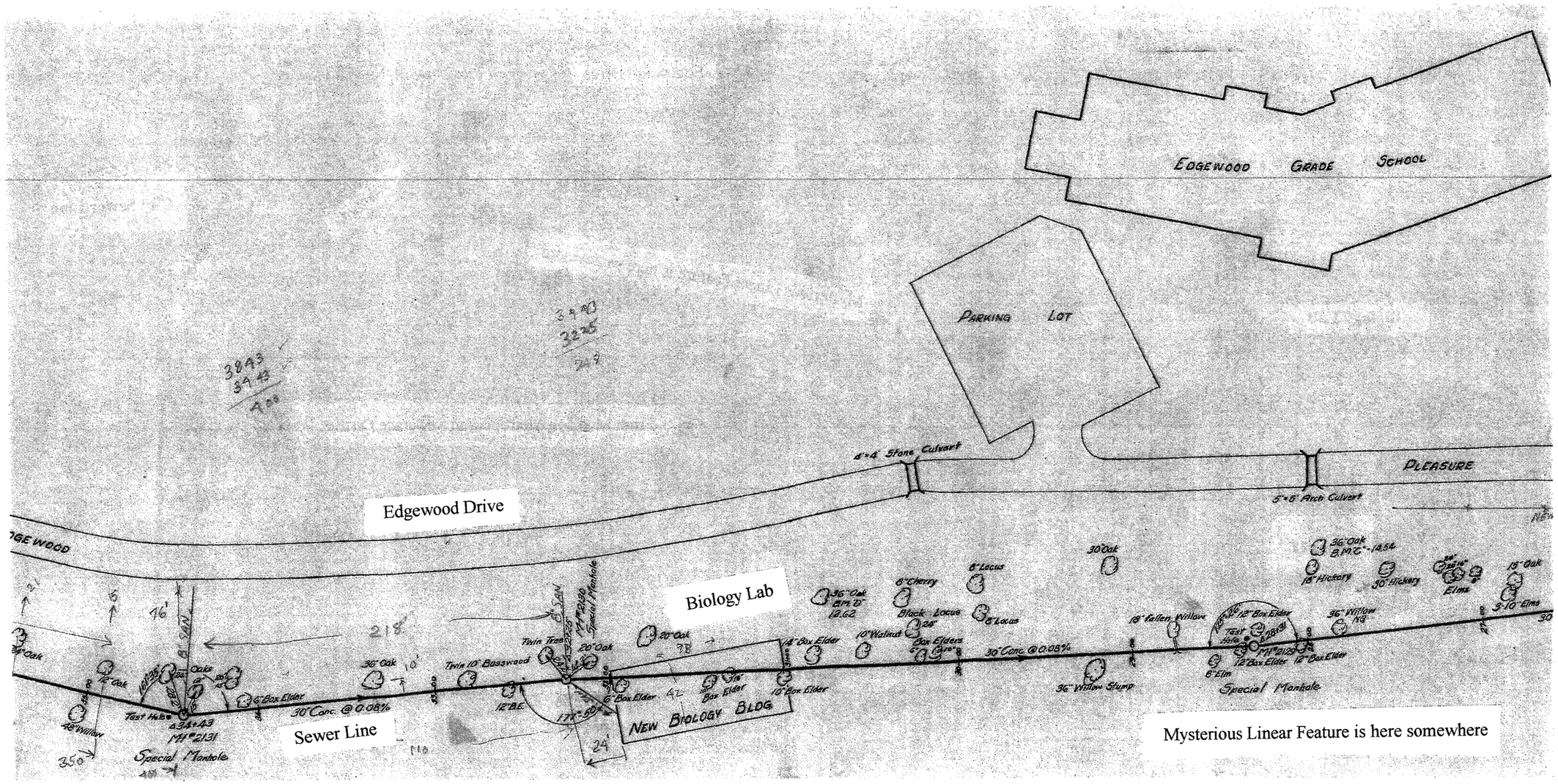
Annex IV: Sewer Lines along Lake Wingra on Edgewood Campus

To Panther Mound

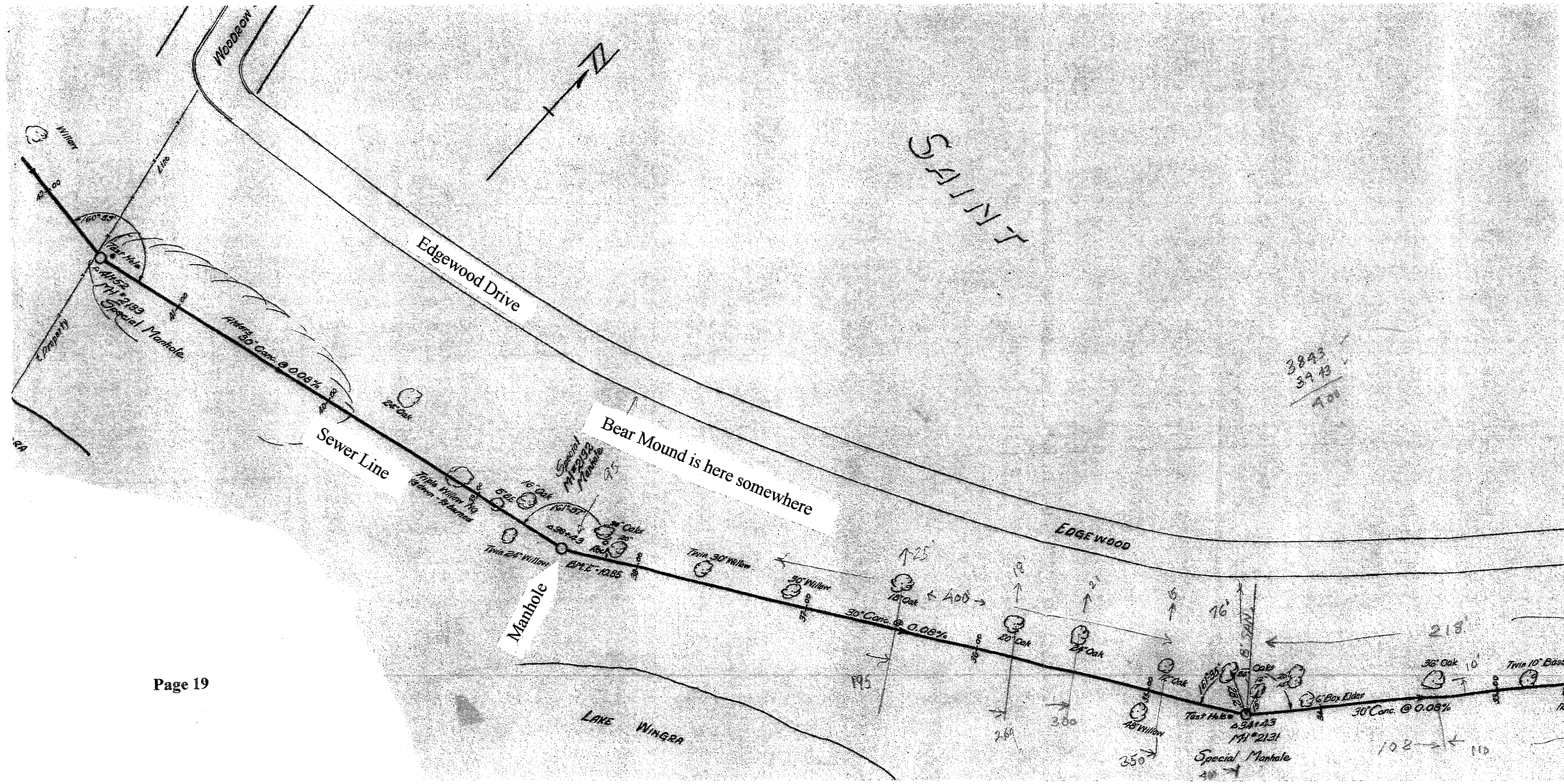


← Westward to Page 19

Eastward to Page 17 →



Eastward to **Page 18** →



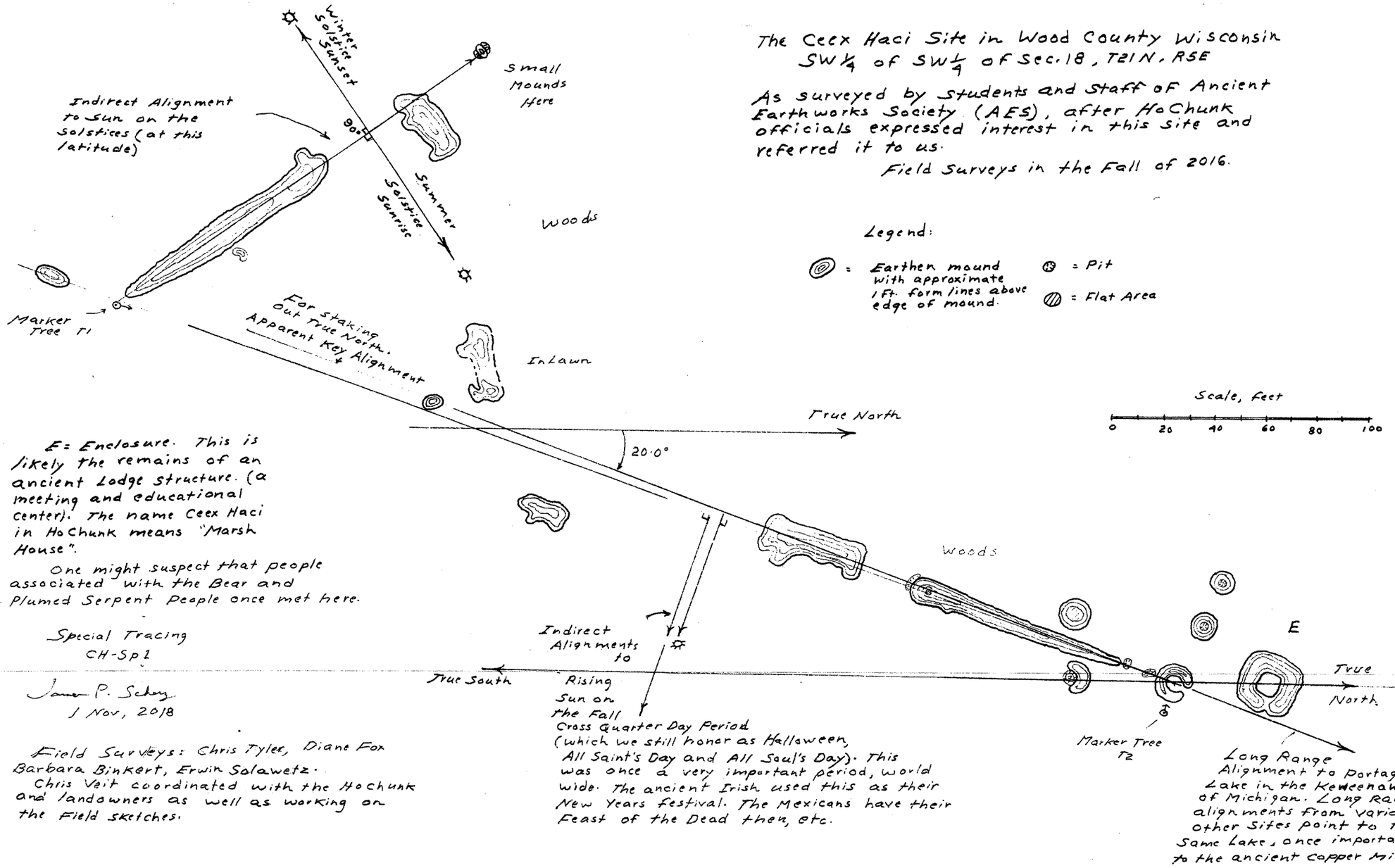
Page 19

For Notes

The Ceex Haci Site in Wood County Wisconsin
SW¼ of SW¼ of Sec. 18, T21N. R5E

As surveyed by students and staff of Ancient Earthworks Society (AES), after HoChunk officials expressed interest in this site and referred it to us.

Field Surveys in the Fall of 2016.



Legend:

= Earthen mound with approximate 1 Ft. form lines above edge of mound.

= Pit

= Flat Area

E= Enclosure. This is likely the remains of an ancient Lodge structure. (a meeting and educational center). The name Ceex Haci in HoChunk means "Marsh House".

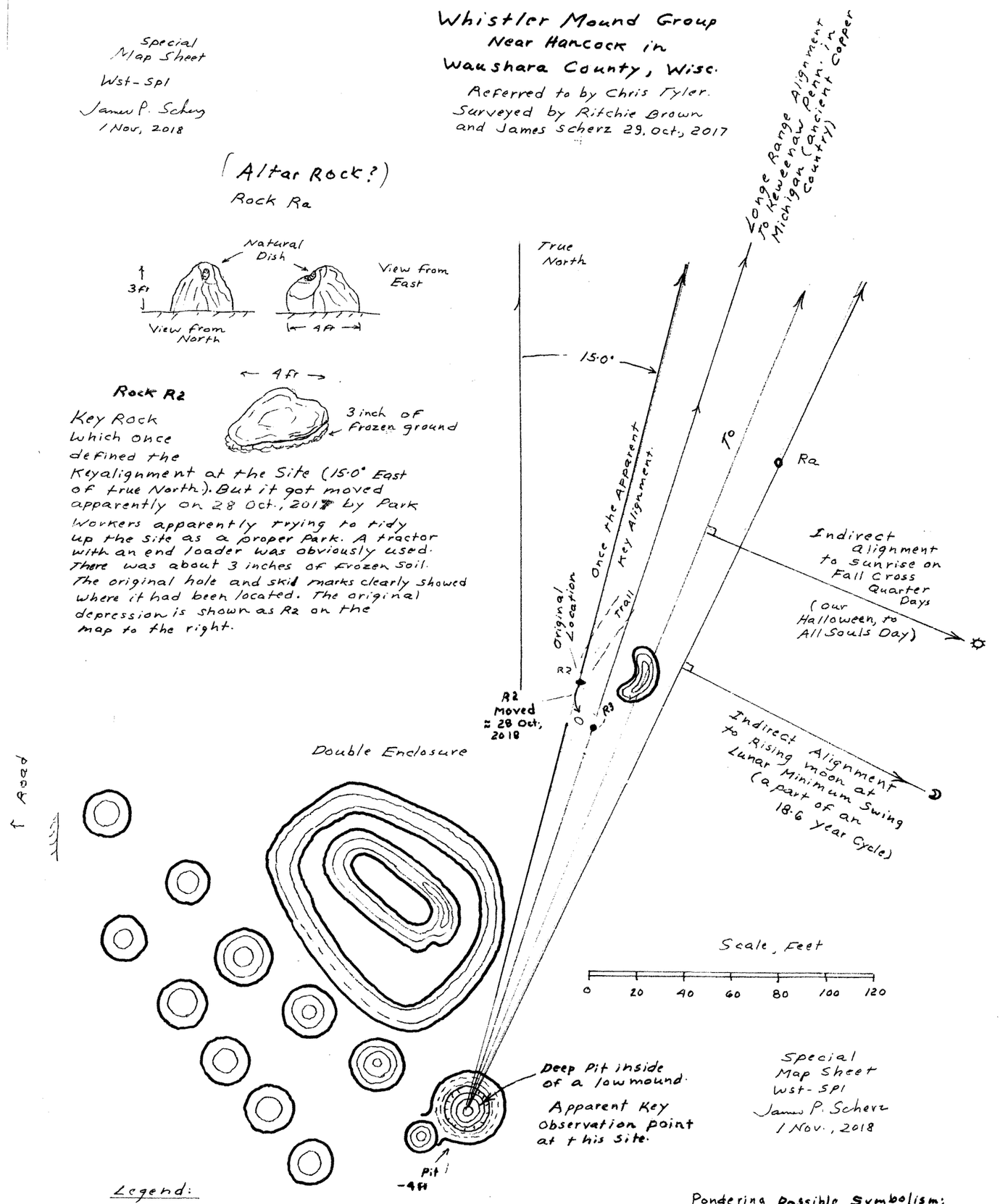
One might suspect that people associated with the Bear and Plumed Serpent People once met here.

Special Tracing
CH-Sp1

James P. Scherz
1 Nov, 2018

Field Surveys: Chris Tyler, Diane Fox Barbara Binkert, Erwin Salawetz.
Chris Veit coordinated with the HoChunk and landowners as well as working on the Field sketches.

Annex V: Example of a final map from another site (The Ceex Haci Site)



Annex VI: Example of a final map from the Whistler Mound Group

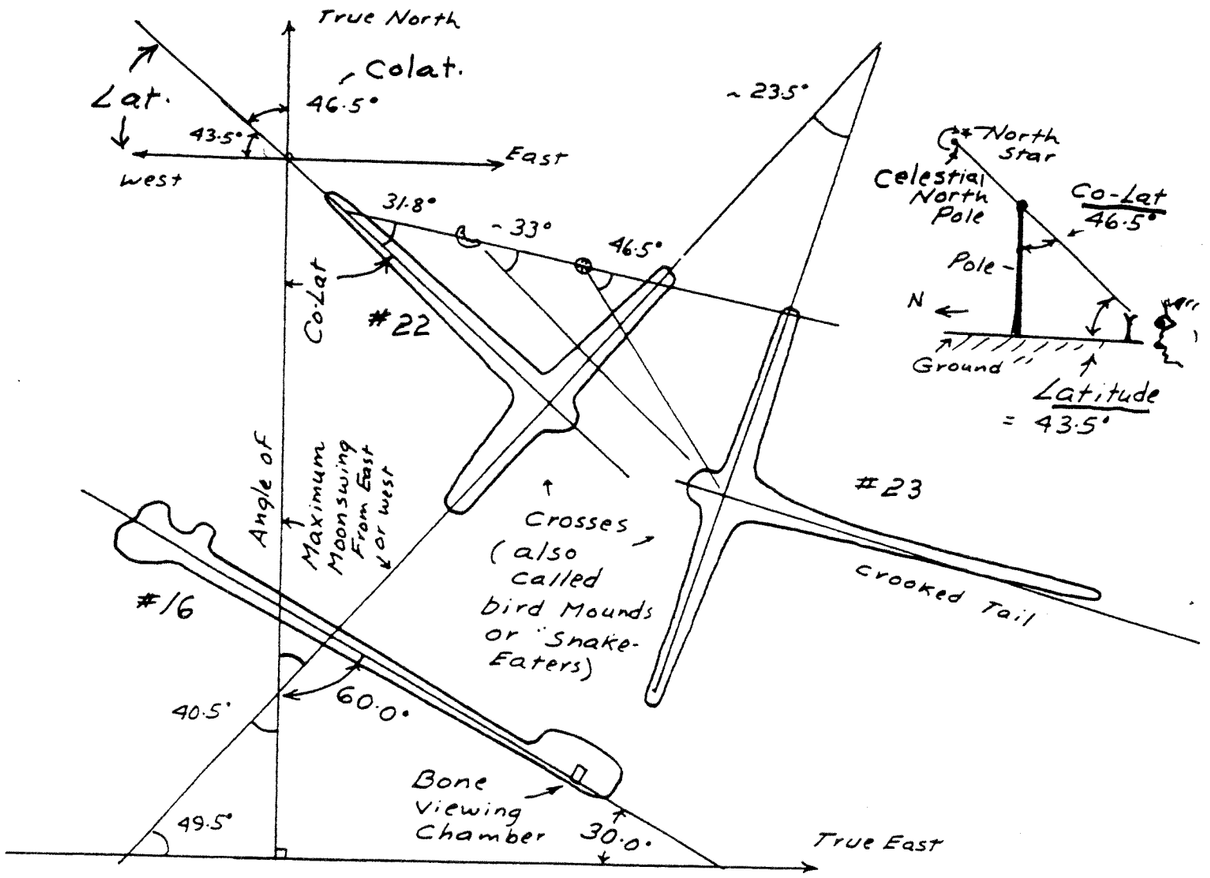
Annex VII: Encoded Geometry Related to True North

Similar to Old World Temple Colleges and Mystery Schools, the most important geometry at ancient sacred sites in the New World also seems to have been encoded. Pamita, who said he had been trained in the ancient Fire Lodge (then still active near the Menominee Reservation in Wisconsin) said the same thing. He said that the important geometry was encoded by the surveying priests at the time that the commoners constructed the mounds. But he said that the initiated priests had ways of accessing the important encoded geometry which was meant to be overlooked by others. Our surveys indicate that the key geometrical framework consisted of true north-south lines. These seem to have been established from lengthy observations of northern stars revolving around the celestial north pole. The celestial north pole and the point directly below it, known as the true north pole of the earth, have been used since very ancient times for precise surveys and maps, (and for navigation) right down to this day. But at all but a very few special New World sites, true north is not open. It was purposely encoded by key lines , and key angles . Key angles are those easily made by rope geometry, such as 60 deg., 30 deg. (60 deg. bisected), 15 deg. (30 deg. bisected), etc.

After establishing true north at a mound site, the ancient surveyors apparently constructed a "key alignment" at some simple angle from true north. Both the key alignment and the key angle could be passed on verbally to new initiates, while keeping the information secret from the non-initiated commoners. Our precise surveys oriented to true north, cut through such apparent secrecy and expose all this information to those who will study the maps.

With a true north-south line established, then a 90 deg. angle can be constructed from it to create all four of the true Cardinal Directions (N, S, E, and W). From these, the latitude and co-latitude of the site (by products from observing true north and the position of the north celestial pole) can be encoded, as well as other geometry important to the site.

Alignments to the rising or setting sun on the solstices and/or the ancient cross quarter days are found at most mound sites. At some sites, alignments to the rising or setting moon at its maximum and minimum moonswing can also be found. Such astronomical calendar alignments appear two ways. They appear as what we call "direct" or "indirect" alignments. A direct alignment is one which points directly to the rising or setting sun on the given dates (or to the moon). An indirect alignment is where one must construct a 90 deg. angle from the alignment to make the calendar observations. An indirect alignment provides another layer of encoding, but also has practical advantages over a direct alignment. Along a direct alignment, a tree or other vegetation can grow up to obscure the view of the sun (or moon). But along an indirect alignment, it is almost always possible to find a spot where a 90 deg. angle can be constructed and temporary stakes set to observe the rising or setting sun (or moon). The following and preceding pages show examples.



Some interesting geometry in the Northwestern part of the Lizard Mound Group: Such geometry primarily relates to the true cardinal directions defined by projecting the celestial north pole to ground level. Mound #16 makes a 30° - 60° - 90° triangle with the cardinal directions. This is a basic construction triangle (still used by draftsmen). Angles of 60° and 30° are first steps in dividing a circle into smaller workable units. The tail of Mound #22 creates angles of 46.5° and 43.5° with the cardinal directions. These correspond to the latitude and co-latitude of the site (latitude is shown on all modern maps). This latitude corresponds to the position of the site between the equator and the north pole of the earth. Angles of 23.5°, 31.8°, 33°, 40.5° and 49.5° relate to the migration of the sun and moon across the celestial equator and to universal principles of sacred geometry.

Example of True North Encoded with a 60 deg. Angle from the long Body of the Panther Mound at Lizard Park in Wisconsin

The so-called long Panther Mound is also shown as Mound #16. This is what we call the "Key Alignment" at this site. The "Key Angle" is 60 deg., easily and accurately made by use of rope geometry. This information could have been easily passed along verbally to a new initiate or "Keeper of the Site" (as Pamita said he was). Knowing these two important bits of information, first determine the centerline of the Long Panther Mound #16. Then construct a 60 deg. angle from this centerline. Put in temporary stakes along the resulting true north-south line.

Other useful angles for this site, such as latitude and co-latitude are easily accessible. As Pamita said years ago, the important geometry was encoded from view of commoners even when the mounds were constructed. But the initiated priests had ways of accessing it. (It was likely from verbal passing of information, which still happens today in certain circles, including in some of our governmental offices.) Our modern precise maps oriented to true north help us cut through such ancient secrecy and encoding.

SURVEY REPORT
LIZARD MOUND PARK
WASHINGTON CO., WISCONSIN

Survey By

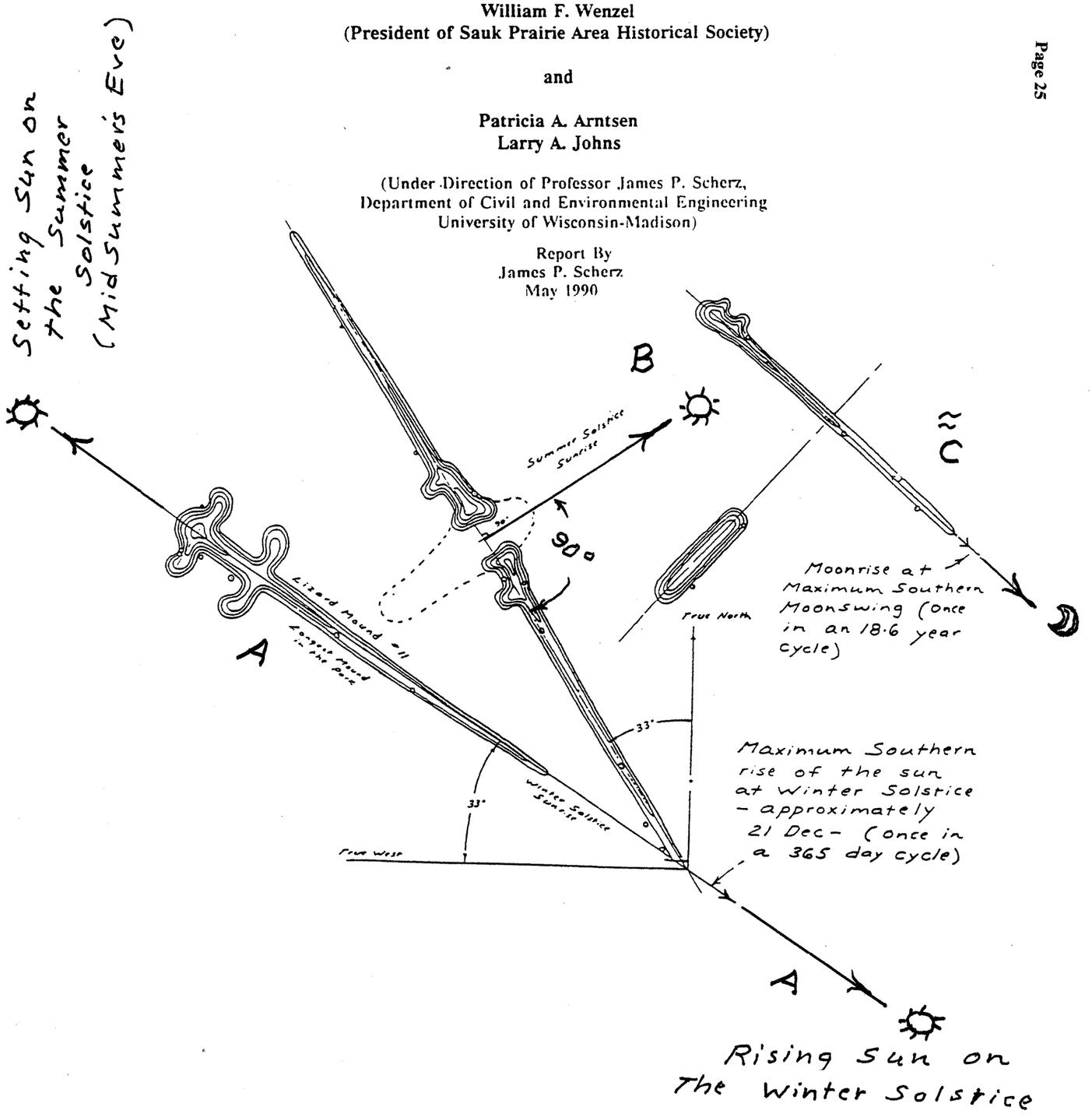
William F. Wenzel
(President of Sauk Prairie Area Historical Society)

and

Patricia A. Arntsen
Larry A. Johns

(Under Direction of Professor James P. Scherz,
Department of Civil and Environmental Engineering
University of Wisconsin-Madison)

Report By
James P. Scherz
May 1990



Direct and Indirect Alignments at Lizard Mound Park

A — **Direct Alignments to the Sun on the Solstices**

B — **An Indirect Alignment to the Rising Sun on the Summer Solstice**

≈ C — **A Direct Alignment to the Southernmost Rise of the Moon every 18.6 years**

For Notes

Annex VIII:

Possible Involvement for Students and Staff at Edgewood College:

(By James P. Scherz, 1 Nov., 2018)

In the fall of 2018, we are getting ready to begin a series of night classes at AES on surveying Indian Mounds. We have decided that instead of starting with number-crunching on computers, we will begin by reducing the survey notes of T. H. Lewis, by the method he would have used (in the late 1800s). This is by using a sheet of paper and a protractor and engineer's scale. In the field, he measured from an occupied point to another point using a known direction and a taped distance. For directions, he used what are called bearing angles, measured from either North or South to the East or West. A bearing is always 90 deg. or less. See Annex I and Annex II. Today, we use azimuths which are clockwise angles from north (given as angles between 0 and 360 deg.) This change was partly a convenience for airplane pilots, etc.

Modern surveyors also use azimuths, and our protractors ('plates') in modern field instruments are graduated from 0 to 360 deg. But modern surveyors must also deal with the older bearings, because they show up on historical surveys and maps. It must be second nature for a surveyor to convert between bearings and azimuths. This skill should be mastered after beginning students have plotted a few maps from the T. H. Lewis notes.

Another vital bit of information which must be taught is the notation that Lewis used for the location of mounds he surveyed (such as NW-NW-27-7-9 in Annex II). This is translated as a parcel of 40 acres in the NorthWest Quarter of the NorthWest Quarter of Section 27, in Township 7, Range 9. More than two centuries later, we still use this same basic framework for our surveys. Any map for a registered Indian mound must be referenced to property corners tied to this legal framework. After drawing a few mounds from the Lewis notes, and plotting their location on a county map, the new students should then be more comfortable with surveying a mound on their own, and tying their surveys to some legal property corner.

For students preparing to operate modern Total Stations to survey Indian mounds, several classes with the Lewis notes should serve as a good introduction of how to also convert angles and distances they measure to modern maps. But all students who take these classes will be well prepared to reduce other Lewis notes, if they desire, without learning how to operate modern field equipment. And the need for reducing more of his notes is vast. There is a real opportunity for people who understand how to decipher and reduce the survey notes of T. H. Lewis.

Between 1880 and 1893, T. H. Lewis, surveyed about 12,000 Indian Mounds east of the Rockies to Michigan, and from southern Manitoba to the mouth of the Missouri River. He worked for Alfred J. Hill from St. Paul. Their plan was to map representative ancient earthworks in this area and then to publish the results-- to be written by Lewis. But Hill died, and the survey notes of Lewis went to Hill's heirs in England and Canada. Lewis was left without his field notes and died as a pauper, unable to finish his planned work.

In the early 1900s, the survey notes of Lewis were acquired by the Minnesota Historical Society, where they were archived, and indexed. During WPA days, they were also copied to typewritten format in an attempt to better preserve the data. A few generations later, in the late 1900s, a few surveyors who knew of their existence and could translate his work, would occasionally travel to St. Paul and refer to the Lewis notes.

After a few visits when working for the HoChunk of Wisconsin, I became horrified by the crumbling of his valuable notes each time they were examined. Archive officials were asked why they had not been microfilmed, like old newspapers. I was told that they had wanted to do this, but there was political pressure by a group not to have this done, lest the public have wider access to these records. I referred the matter to some HoChunk elders. They all agreed that the greater danger to the remaining mounds was destruction by ignorance and development rather than from pot hunting. They were in favor of microfilming the Lewis notes themselves, if the state would not do it, and arranged to bring their own microfilm cameras to the Historical Society. But they were convinced not to do so. The state would do the work and give the HoChunk a copy of the microfilms, and send a copy to the Wisconsin Historical Society Library.

Since that time, people at the Minnesota Historical Society can now access microfilms of the Lewis Surveys just like those for old newspapers. But at Wisconsin, you first have to know that this historical society also has a copy (not in the general index) and then go to the State Archeologist's office to ask permission to see the microfilms. Yet, the Lewis notes are legally available, if one knows how to access them. The office of AES also has a purchased copy of the 9 reels of microfilm which comprise the Lewis notes. And we also have working indexes listing the areas where Lewis surveyed. For Dane County, Wisc., alone, there are 63 sites similar to the mounds in Annex I and Annex II. Some sites contain many, many mounds. And Dane County is just one county in Wisconsin, and Wisconsin is just one of the states where Lewis worked.

For those interested in the ancient earthworks of this nation, there is a vast need for someone to finish reducing the survey notes of T. H. Lewis. Keep in mind that most of the mounds that Lewis surveyed have been destroyed and that there are no other general open records of their location or shape. Converting his notes to map format (as in Annex I and II) is not overly hard, once one has learned how. But it takes care and a good system of record keeping, as one would find in any library or archive office. The task is greater than what can be presently accomplished in the offices of AES. We must focus on surveying mounds which still exist and which have not yet been cataloged. But we have worked out the process of efficiently and accurately reducing the Lewis notes, and are willing to teach what we know.

An opportunity exists for others to do this work and find funding for doing so. A logical way to start would be to reduce the field notes for all the mounds that Lewis surveyed in an individual county, such as Dane Co., Wisconsin. Then there are other counties in the state, and other states in the nation. If officials at Edgewood College want to teach students to better appreciate the famous effigy earthworks which were once centered on southern Wisconsin (including some on their campus), then they might want to consider what could be developed using the survey notes of T. H. Lewis, from the late 1880s to the early 1890s.

For Notes