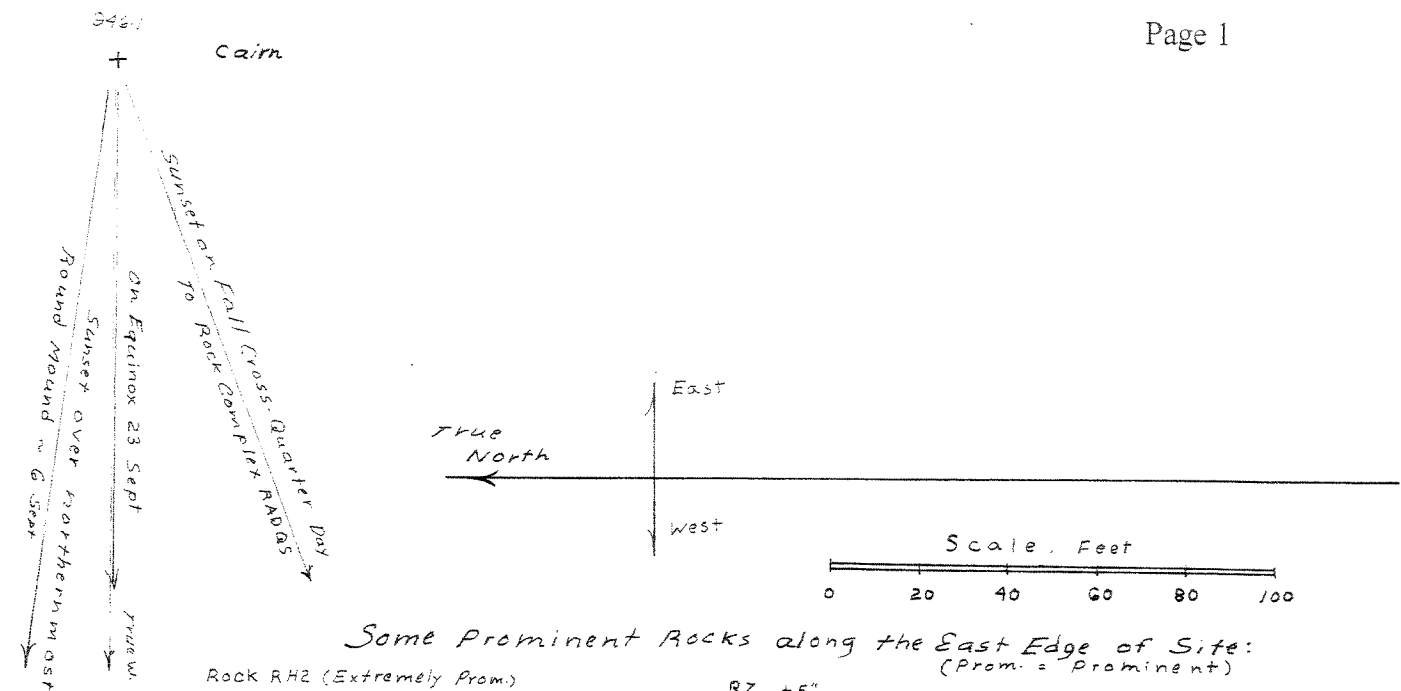
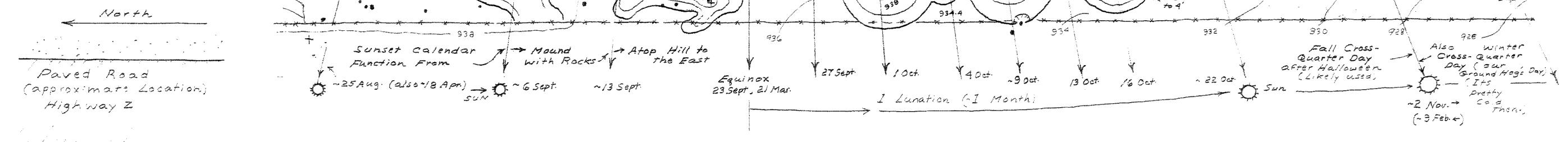


James P. Scherz,
Prof. Emeritus, Dept. of Civil Engineering,
University of Wisconsin, Madison,
July, 2015



W.D.S.C.:Disclaimer. Our teaching sessions began on the north end of the site. There was some early confusion on a few field sketches here of rocks not directly associated with the mounds, which we did not resolve. For more accurate locations in this region, refer to maps by Herman Bender, such as in "Bison Effigy Stories in Wisconsin," by Herman Bender. 2013.



Overview:

In the spring of 2015, I had agreed to run a training session to teach interested individuals the methods we had developed since the late 1980s for making maps of Indian mounds and related organized rocks. (See Annex B). The session was for interested members of the Ancient Earthworks Society (AES) of Madison and the Mid-America Geographic Foundation (MAGF), based out of Fond du Lac, Wisconsin. David Stetter and Glen Oechsner from MAGF chose the Kolterman Site, east of Waupun, Wisconsin, for the training site because it was easily accessible, and had both large round mounds and subtle effigy mounds. It also had an impressive array of seemingly organized rocks associated with the mounds. The site is located across the Horicon Marsh from Waupun, Wisc. See Figure 1. The land is owned by the Audubon Society, and James Uhrinak, Secretary of the Milwaukee Audubon Society, was in control of the site where the mounds are located.

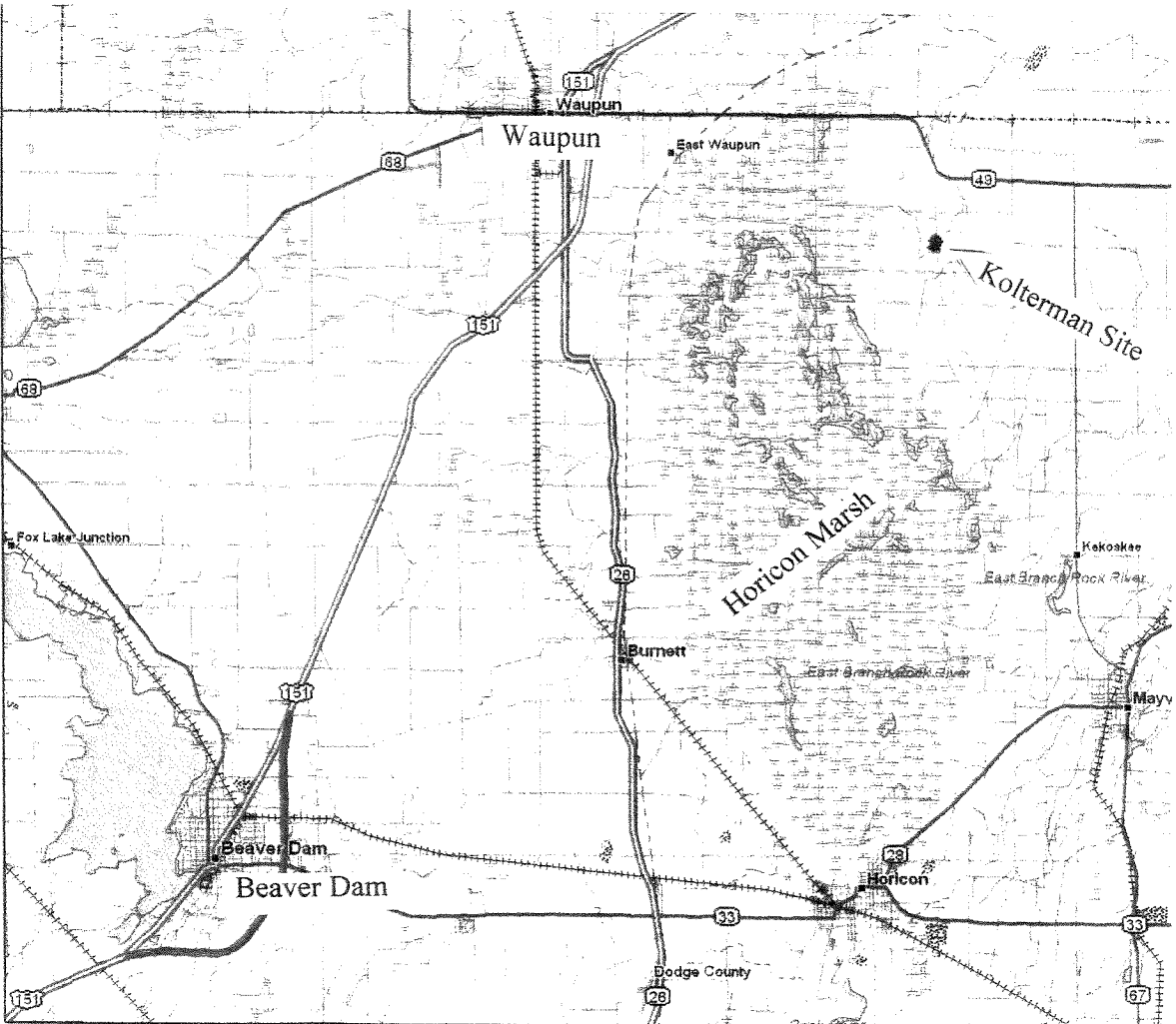


Figure 1. Location of the Kolterman Site

Previous Work at the Site and our Contributions to the General Knowledge:

Figure 2 shows an excerpt from the Wisconsin Archaeologist from Dec., 1953. It is from an article by Dr. E. G. Bruder, 1951, showing what he thought were a series of otter effigy mounds headed south, in association with some large round mounds. Before the road was built, an old Indian trail once ran just west of where the mounds are located. See Figure 3, which shows the trails and also a creek (now called Speaks Creek). It runs south in the valley east of the mounds and then west, crossing the road just south of the mound group. Figure 3 also shows the general location of a single round mound across the creek to the east which was found by Glen Oechsner and David Stetter in May, 2015. As you will see, this small singular, but distinct, mound could have been an observational point (when the land was prairie) for an observer watching the sunset over the mounds during the time of the fall wild rice harvesting season (apparently once very important in this area) and also the fall migration of waterfowl (which continues to this day). With this single Observation Mound, the entire site could have functioned as a precise long-distance solar sunset calendar at a very important time of the year (rice harvest and fall hunting). This is similar to how a small single mound across the river from Aztalan could once have been used as an observational point for a solar calendar associated with the agricultural growing season (Spring Cross Quarter Day to Summer Solstice and down to the Summer Cross Quarter Day in August-- a time to harvest the first fruits from the fields and gardens). A sunset calendar with the very same dates can also be observed at Frank's Hill near Muscoda, Wisconsin. See Annex C.

But the functional calendar found at the Kolterman Site is not the same as at Muscoda and Aztalan. The dates here are from late August, punctuated with the Fall Equinox, and continuing to the Fall Cross Quarter Day period, a time when there were great ceremonies around the world, a period we still honor with Halloween and Homecoming football games. I have been told that the Native Americans, when they were still nomadic, would gather the families and clans at that time, prior to dispersing into smaller groups for winter survival. If this was true, then the mounds at the Kolterman Site could have been used to predict the time of the wild rice harvest and the fall hunt, and end with a ceremony on the Fall Cross Quarter Day period.

The alignments from the Observation Mound in the east to just the round mounds along the ridge by the road begins on about 6 Sept., punctuates on the Fall Equinox (22 Sept.), and ends about one lunation later, with the sun setting over the southernmost round mound on about 22 Oct. (See the map on the cover page--Page 1.) The Fall Cross Quarter dates (just before 1 Nov.) are marked with special rocks, as also was an alignment to the setting moon at Minor Lunar Standstill. Like the Major Lunar Standstill, the Minor Lunar Standstill can be used to time the 18.6 year declination cycle of the moon, which is tied to maximum tides along the coasts, and everywhere to eclipse cycles. The effigy mounds and obviously organized rocks to the south of the round mounds seem to primarily relate to high geometry associated with the southernmost set of Venus (on an 8-year and 260 year cycle) and likely also to the southernmost set of the dim planet Mercury (on a 13 and 52 year cycle). Cycles of 8 years, 260 years, 13 years and 52 years were once very important in the pre-Columbian calendars of Mexico. And from the alignments in numerous sites in the upper Midwest (Jeffers Petroglyph Site, etc.) these planetary calendar cycles were apparently once important to ancient people further north, as well.

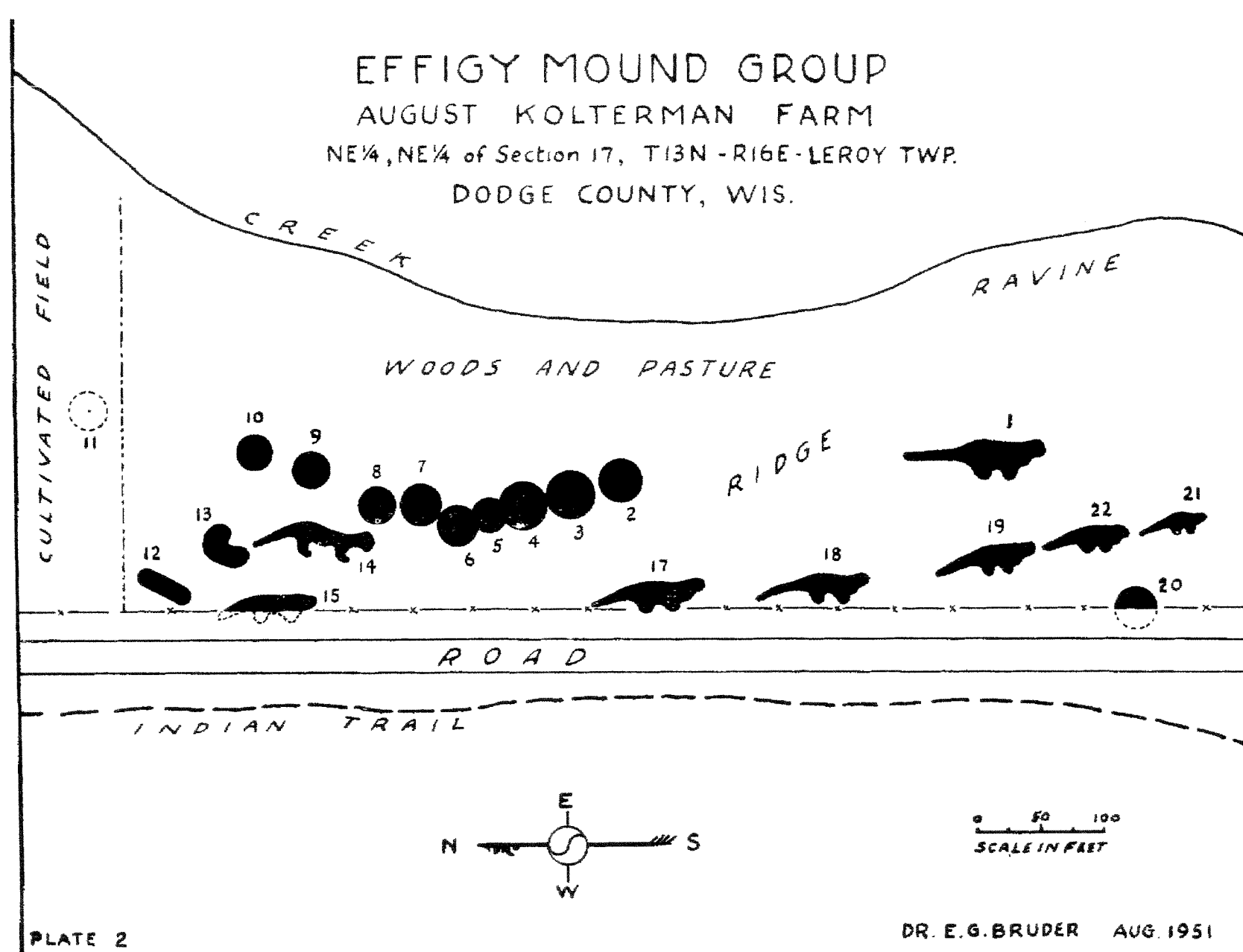


Figure 2. Map of mounds at the Kolterman Site by Dr. E. G. Bruder, 1951
 (from the Wisconsin Archaeologist, Dec., 1953)

The map shows a grid of sections numbered 7, 9, 16, 17, 18, 19, 20, and 21. A dashed line runs diagonally from the top left towards the bottom right, labeled 'General location of the Observational Mound'. A solid line runs horizontally across the middle, labeled 'Speaks Creek'. A compass rose in the bottom left corner indicates North (N), South (S), East (E), and West (W). The area is labeled 'HORICON MARSH'.

Figure 3. Ancient trails and streams shown in the article by Dr E. G. Bruder, 1951

Then, if we want to survey a series of points relative to where our instrument is set up, we merely sight the azimuth point for directional control and then measure the horizontal angle and distance to any point in our survey (a surveyed point). We used a Topcon Total Station where our distances can be measured reliably to the nearest 0.1 ft. Based on assumed coordinates of our instrument (X = East, Y = North, and Z = Elevation) we can calculate the coordinates of all the surveyed points. In the field, these were marked with playing cards, temporarily pinned to the ground with small wooden stakes. Our instrument was initially set up over the card called Six of Diamonds (6D), where we took the sunshots.

Any competent modern surveyor can also get the relative location of the surveyed points by different means (old stadia methods with a transit, a Total Station, or surveying-quality GPS). Unfortunately, most modern surveyors are not now taught how to do celestial observations for directional control. They may give you north as State Plane North, or North on a County Coordinate System, and try to tell you that is true north. It is not. On such a projection system, true north is true north only at a given meridian, say in the center of the county. By the time this coordinate system gets to the edge of a county, their County North may have deviated so far from true north that we cannot use it for accurate analysis of geometry or calendar purposes. When we survey a large mound group, we normally take new sunshots every ½ mile in the east-west direction, because the errors in direction accumulate over this distance, due to the convergence of the true meridians at the north pole. The same is true when working on a map based on State Plane or County Coordinates. If we use such data (as from a survey-quality GPS) we must somehow verify where true north is. It is needed for calendar analysis, etc.

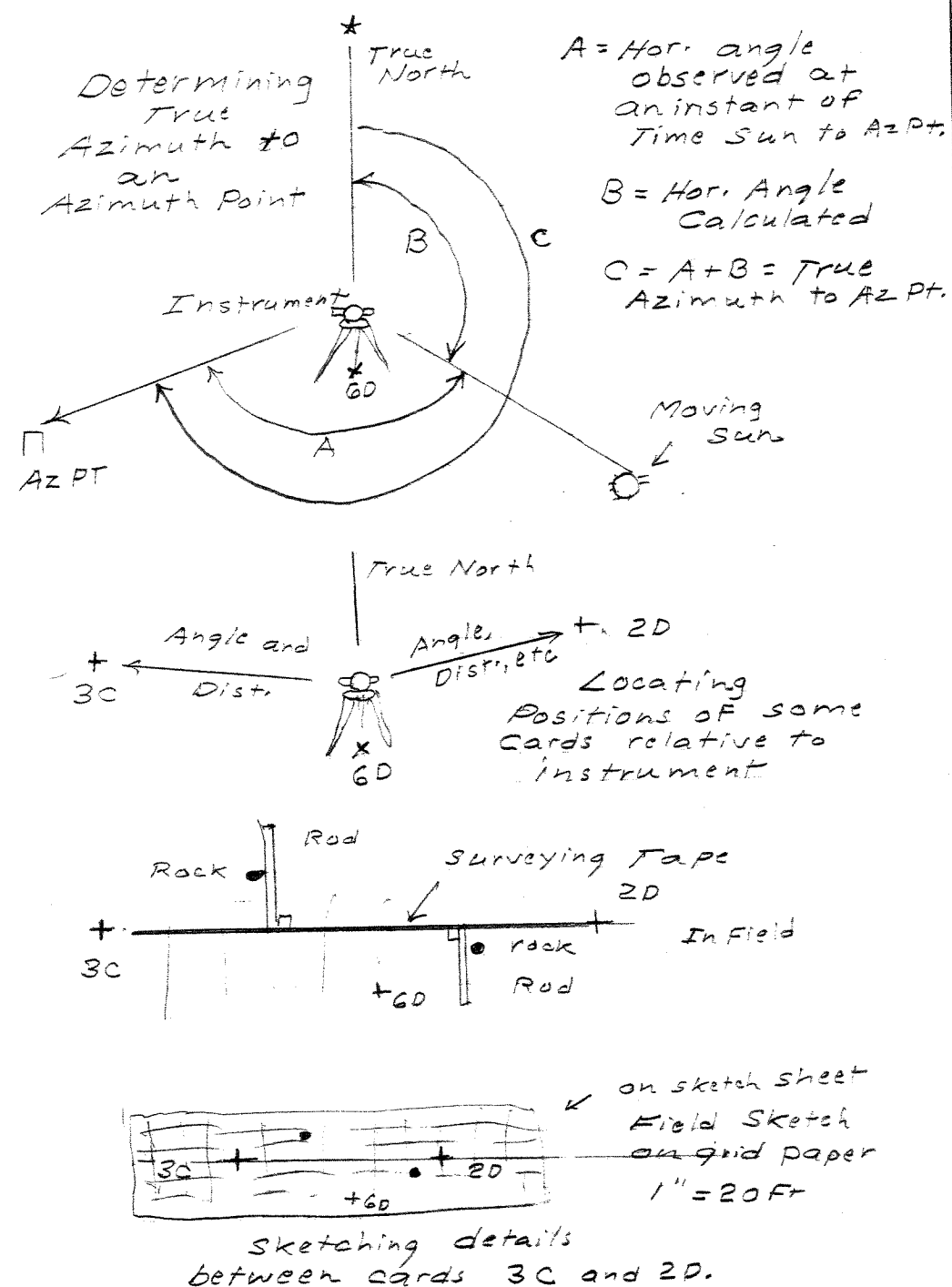


Figure 4. Surveying with Sunshots and a Total Station

Note Summary Sunshot

At Kolterman Site 2 May, 2015

Glan occupied old 6D again, shot azimuth h Point the old stations again plus a few new stations. We trained 2 field sketchers between 3D and AD. Michael Edwards and also made sketches 6D-JD; PIC-YGC JPS Did Sunshot from old 6D to Az Pt

Az sikus sw

To:	Hor Angle	clock start
Az Pt	300 58 00	21hr 12m 00'
True Az Zero of Hor Plate		Time DC = .6
From Program Sunshot 2. bas	298.9395°	Sun 1 313 49 30 (2m 35.28 sec)
	.942	Sun 2 314 05 06 (3 48.50)
	.948	Sun 3 314 24 59 (5 22.59)
	298.943°	Az Pt 300 58 30
	± .004°	

GPS

Lat 43° 36.204' / 43.6034°

Long 88° 36.362' / 88.6060°

Process data on Program Sunshot 2. bas:

True Az Zero Plate:

$$\begin{aligned}
 &298.943^\circ \quad \text{Hor Plate to Az} \\
 &300 \ 58 \ 00 \\
 &300 \ 58 \ 30 \\
 &300^\circ 58' 15'' = 300.971^\circ \checkmark \\
 &\quad \quad \quad + 298.943 \\
 &\quad \quad \quad 599.914 \checkmark \\
 &\quad \quad \quad - 360.00 \\
 &\quad \quad \quad 239.914 \pm .004^\circ
 \end{aligned}$$

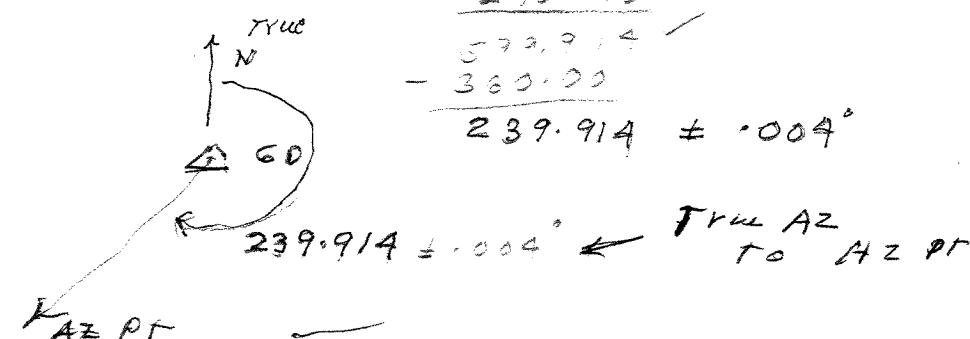


Figure 5. Notes from our sunshots at the Kolterman Site

Ancient Earthworks Society of Wisconsin SURVEY FORM

Site: Kolterman

Date: 6 May 2015

Surveyor: Scherz

Site Occupied: 80 (Tripod)



Station Sighted	Horizontal Angle (Degr/Min/Sec)	Verticle Angle (Degr/Min/Sec)	Distance (Feet)	Rod Height
GD (back)	164 03 30	89 18 06	232.94	4.6 ft
	Kicked Tripod (volaval)			
A2PT	349 09 36		232.94	
GD (back)	163 58 12	89 17 30	232.94	4.6
Acc 1/4 Queen 4 Rocks	328 51 06	93 28 12	66.74 ft	4.6
3 1/2 24	350 17 00	93 29 00	148.84 ft	11"
6 1/2 Joker	333 09 42	91 50 24	181.78 ft	11"
8 1/2	333 49 18	91 27 00	230.44 ft	11"
2 1/2 1/2 King	344 07 18	92 55 24	376.12 ft	
A22P	349 09 36			

Surveyor Signature: Jan P. Scherz

Date: 6 May 15

Figure 6. Total Station Notes for some sites at the north end of the Kolterman Site

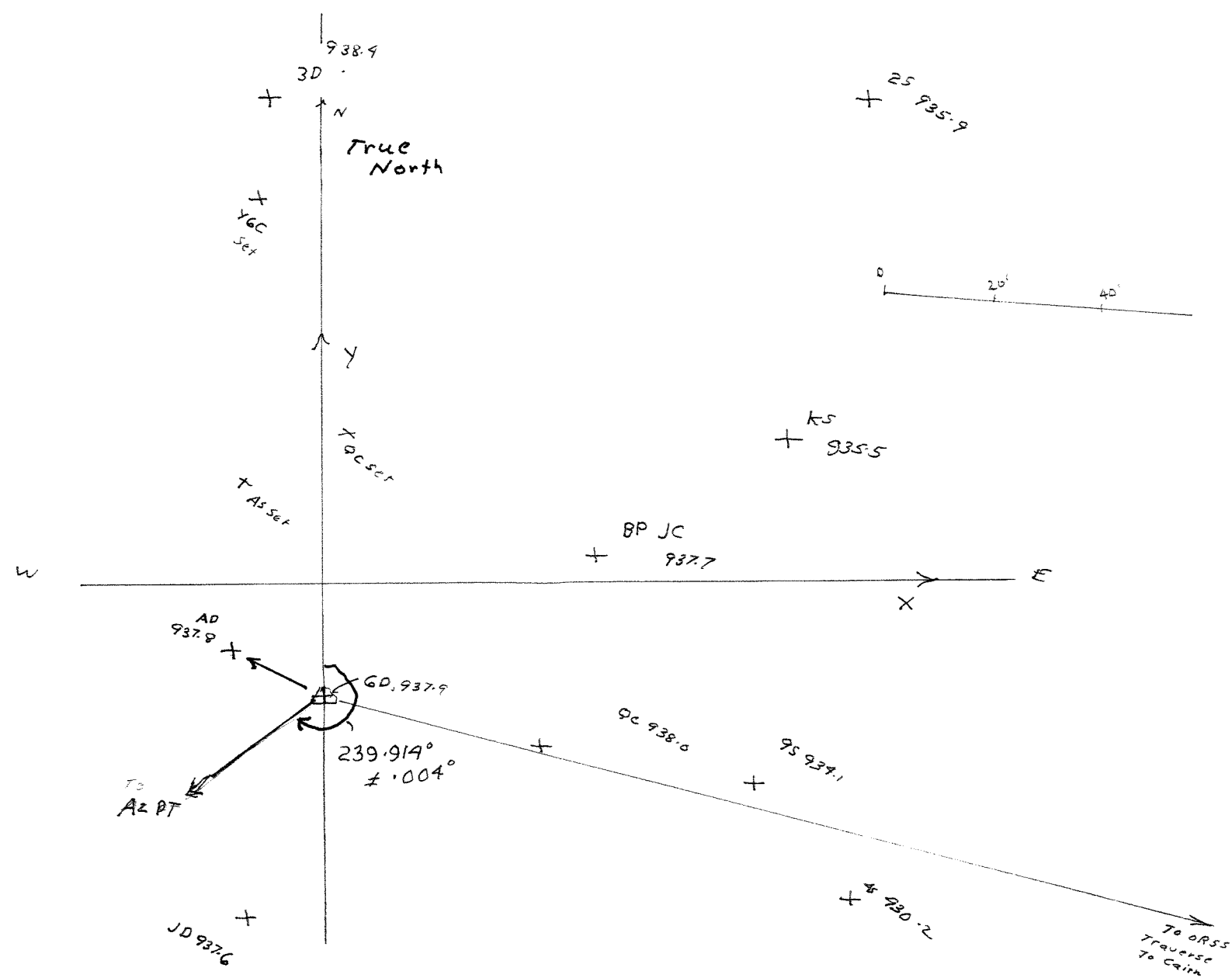


Figure 7. Some Surveyed Points plotted on a map for the north end of the Kolterman Site

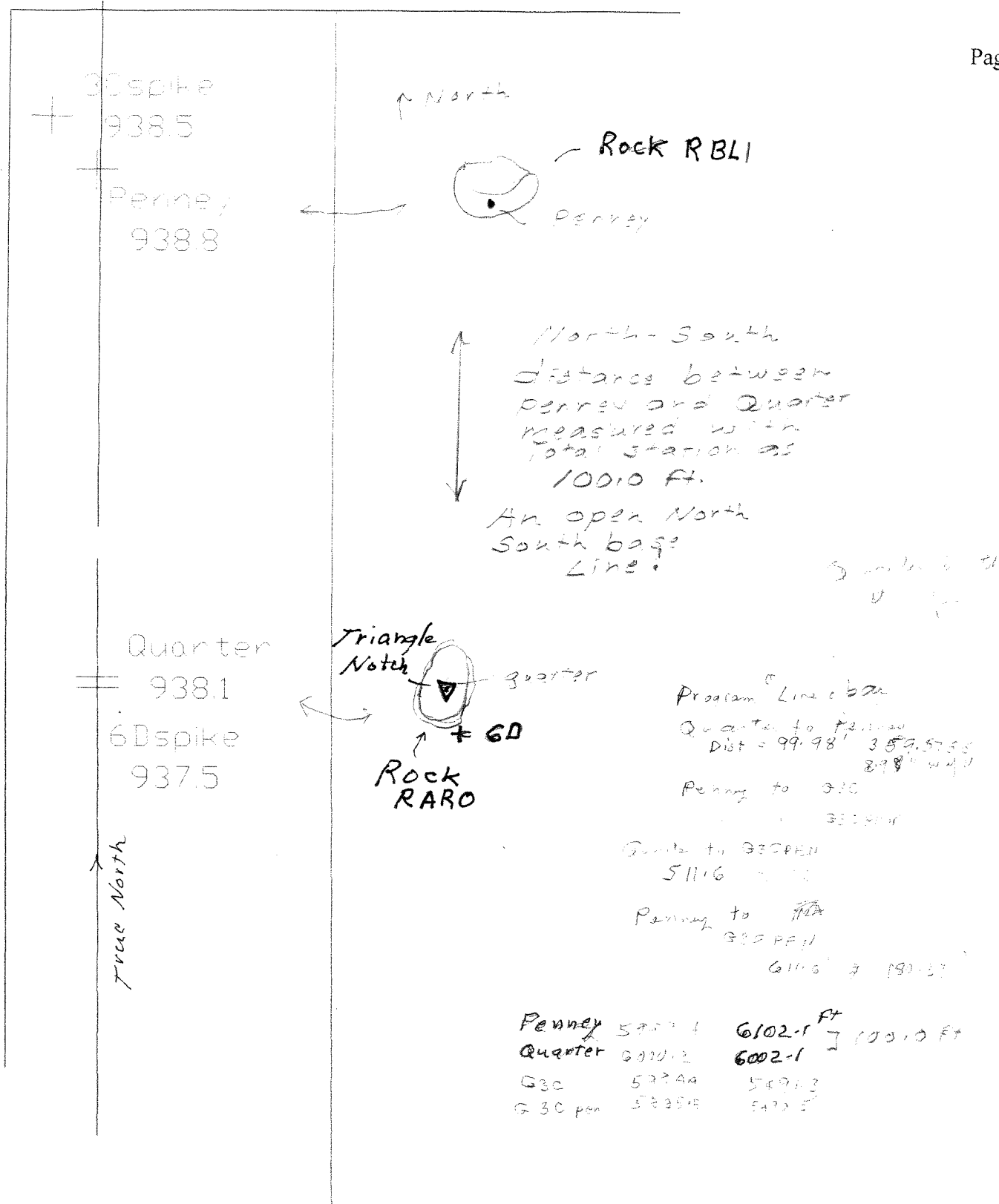


Figure 8. Precise printout for points on the special rocks at the north end of the Kolterman Site, which define a true north-south base line of 100 Statute feet

The All-Important Field Sketches:

What makes our method of surveying extremely efficient, yet adequately accurate and detailed, are the field sketches. A “field sketcher” can nicely sketch in the location of the edges of Indian mounds and rocks, and even indicate the size and the orientation of the rocks in a manner that can be done by no other means. We stretch a tape between two surveyed points, and use an extended level rod placed at right angles to the tape to create a grid system for the field sketches, which are done on grid paper at the scale of 1 in = 20 ft. The surveyed points are accurate to the nearest 0.1 ft. And if the tape is straight and the rod is at right angles to it, we can sketch in the location of scattered rocks, etc., to an expected accuracy of the nearest couple of feet. This is completely adequate for our work, and cuts the number of surveyed points to a minimum. Using a light table, we transfer the details on the field sketches to the master compilation map where the surveyed points have been plotted at a scale of 1 inch = 20 ft. If neither our Total Station operators or our field sketchers have made mistakes, the surveyed points can be matched with the field sketches, and the details traced to the compilation map sheet.

Figure 9 shows a field sketch of a mound at the northern end of the group. It is the same mound that Bruder shows as Mound 14. Our technique was to feel the edge of the mound with our feet and mark the spot with a wad of toilet paper. When we had gone completely around the mound, then the sketching began. This mound, which to some of us seemed to just be a linear mound in the tall grass, was mapped by four different teams as they learned their trade. All the field sketches showed what appears to be a bear mound headed north, not south. Where its eye should be, is a large rock. At 100 ft. north from this rock is another rock that can have several meanings, but which I saw as also representing a crescent moon. The line is true north, something that is encoded at all effigy mound groups I have surveyed. This makes this site very special, where we would expect to find other secrets of geometry, as well. I saw the image of a bear (maybe bear clan members) looking at the crescent moon. Pamita said that any Indian would recognize that a crescent image in a mound group represents “time.” To me, this suggests that there should be a very precise calendar somewhere at this site. If so, it would have to be associated with something on the ridge across the creek to the east. Glen Oechsner and Dave Stetter went to investigate and found a single mound there covered with small rocks. This led to additional surveys and analysis of the site as a calendar, similar to Frank’s Hill and Aztalan.

Figures 10 and 11 show some of the other many field sketches made by our teams. The session went very well, and we thought we might have time to finish the entire site. We did. At the end of the second weekend, the entire site was mapped. See Figures 12 to 12d. Then a few more days were required for Buck Trawicky and myself to survey the single Observational Mound and to better pin down the expected north-south base line between the rocks along the road. When it appeared that we were finished (but really had not) someone dug up a large boulder and moved it about 7 ft., and propped it up to look like a bison. This was apparently related to work at the site by Herman Bender, who in his report had shown a photo of this rock before it was dug up and said that he thought it had once been standing up, looking like a bison. Someone apparently thought they had the authority to move rocks around to make the site conform to the way that the ancient ones meant it to be. The unfortunate thing is that before this rock was moved, it had been part of an alignment to moon set on the Minor Lunar Standstill.



Figure 9. Field sketch of a mound at the northern end of the group
It is the same mound that Bruder shows as Mound 14 in Figure 2.

Kolferman survey 2 May 2015
Elevation 940
Shore - 3 m 75
45 JD who?



Figures 10. One of the many student sketches of rocks

Suggestions for the future: Try not to confuse numbers with rocks. Maybe use ink pen for the cards.

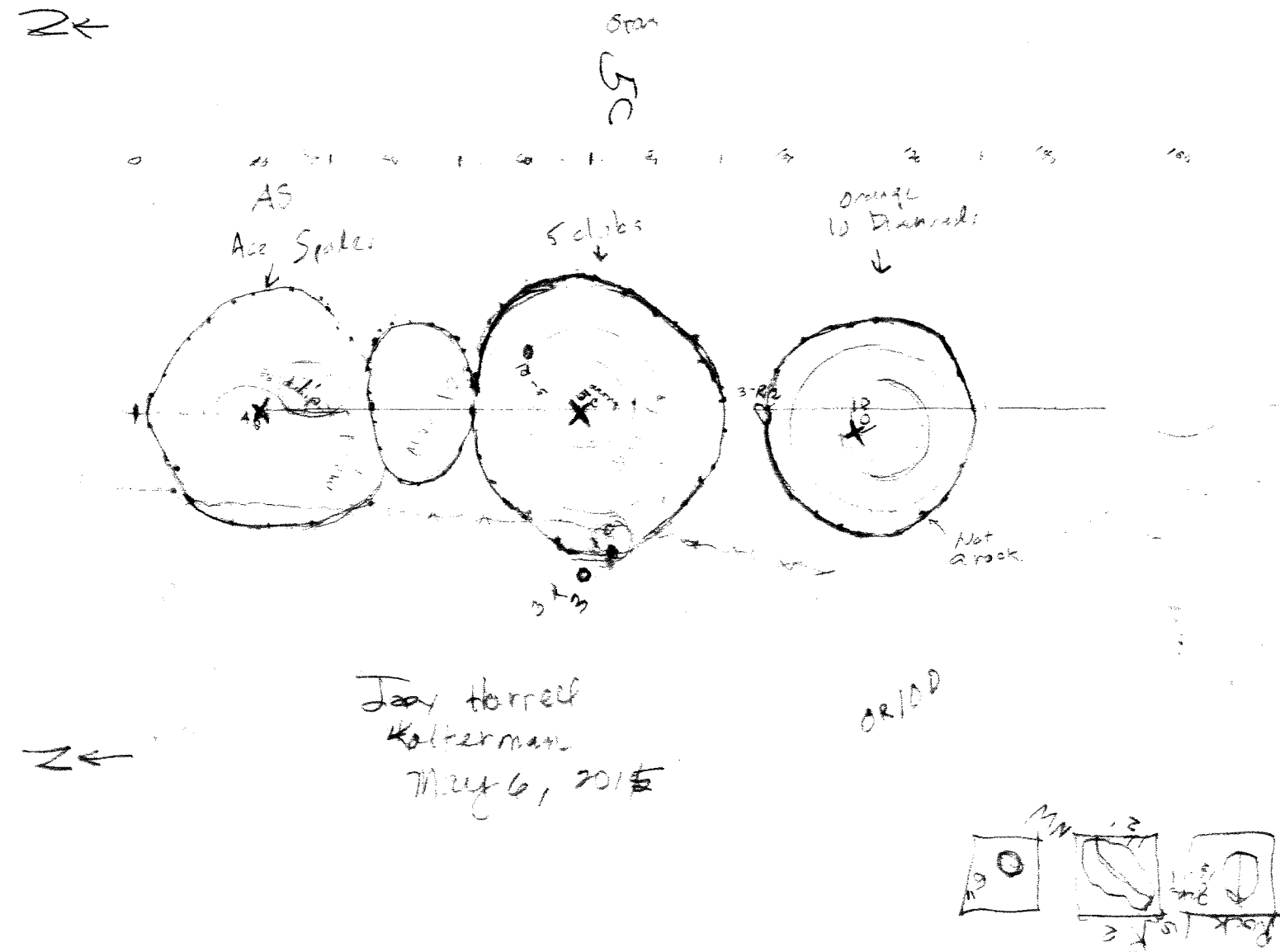


Figure 11. Sketch sheet showing round mounds and rocks

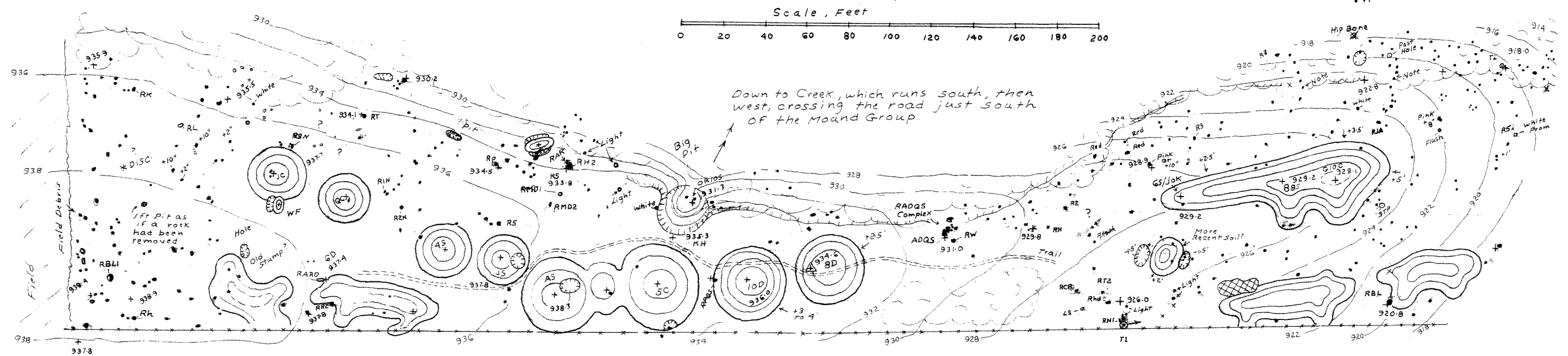
Suggestions for the future: Maybe use ink to emphasize the final outline of the mound and the rocks.
It will make it easier for the person tracing the detail.

Area A

Field Methods We used a Total Station Traverse with directional control by Sunshots (to an accuracy better than 0.01°). Surveyed points were marked by Playing Cards fastened to the ground with wooden sticks. Accuracy goals for surveyed points were 0.1 ft, if the reflector pole was held vertically. Operational accuracy can be considered better than half a foot. Details (individual rocks and edges of mounds, etc.) were located on the grid paper used by the sketch teams to a goal of the nearest 2 ft. Tapes were stretched between surveyed points, and extended level rods were placed at right angles to locate features on the field sketches. For features near the tape, the accuracy goal was the nearest 2 ft. For rocks up to 20 ft from the tape, not placing the rod perpendicular to the tape can create greater errors. The edges of the mounds were located by feeling with the feet. "Form lines" on the mounds were sketched by visualizing a flood where the water was 1 ft, 2 ft, etc., above the feet of the sketcher standing at the edge of the mound. The process allows a team to cover a large area so that patterns can be seen in possibly organized rocks. Such patterns can then be checked by a more refined survey later. This was actually done at this site for rocks that appeared to be on a true North-South Base Line (our surveys on 18 and 19 May, 2015).

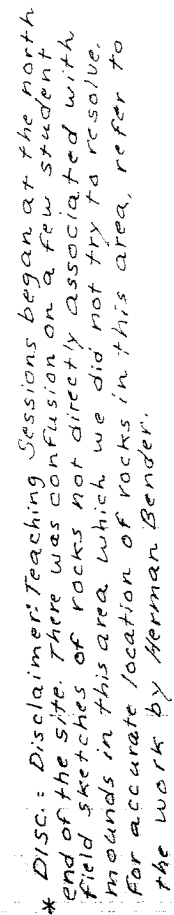
People Who Participated in the Field Work Shown on This Map:

True North

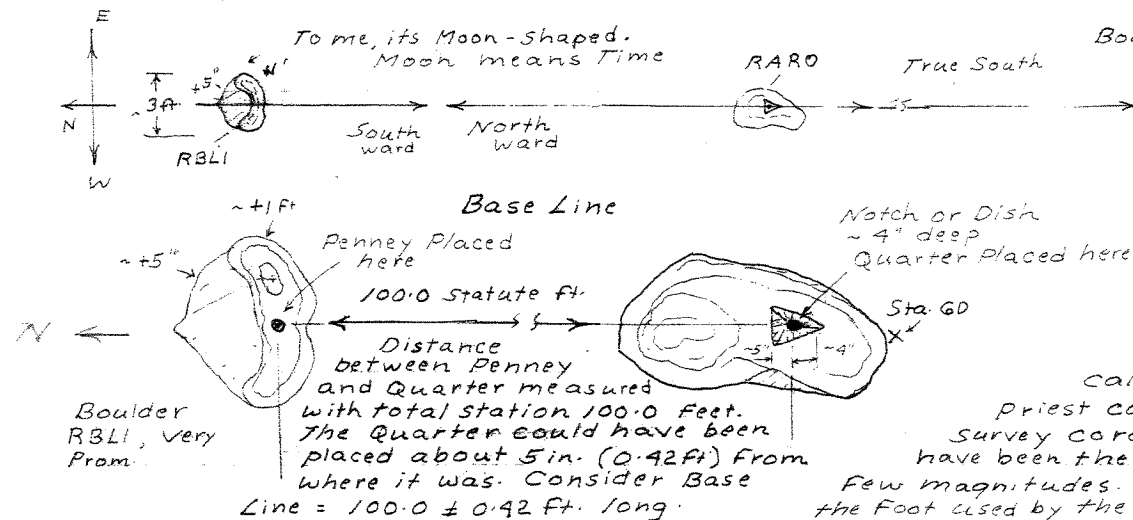


* Disc.: Disclaimer: Teaching Sessions began at the north end of the site. There was confusion on a few student field sketches of rocks not directly associated with mounds in this area which we did not try to resolve. For accurate location of rocks in this area, refer to the work by Herman Bender.

Page 12



Detailed Sketches of Some Selected Rocks and Trees:



A distance of 100.0 statute Feet suggests something very interesting to me. Before days of total stations or other electronic devices to accurately measure distances, surveyors and engineers used precise steel tapes, 100.00 ft. long. There was once a 100 Foot base line in the basement of the Civil Engineering Building on campus in Madison where standard survey tapes could be checked and rated. I can envision an ancient New World surveyor

priest coming to the Kalterman Site with his knotted basswood bark survey cords for the same purpose. The purpose and process would have been the same, although the accuracies would have varied by a few magnitudes. There were other ancient Temple sites where the distance of the foot used by the cultures were encoded. The ancient Parthenon of Athens was known as the "100 ft. Temple" (Hekatompedon in Greek). In the mid

a precise steel tape and rods. He reported that 100 Greek Feet of that day was equal to 101.35 English statute feet, making one ancient Greek Foot equal to 1.014 Statute Feet. He was so ridiculed by the academic archeologists that no other ancient temple was ever measured to the same accuracy, at least until 1971 when Prof. Stecchini published his life-long work into ancient measures in an appendix in Peter Tompkins' "Secrets of The Great Pyramid." Stecchini claims that very ancient wise men had measured a degree of latitude arc at enough places on earth that it (the Egyptian Moira) could be modeled for the earth at any latitude (as well as the local nautical mile, which is 1 min. of latitude arc or $\frac{1}{60}$ local Moira). * Athens has a latitude of about 38°. From Stecchini, p. 330, the Egyptian estimate for the Moira (Taken from ancient cubits) is given as 110,983 m. This is also 364,120 English statute ft. The corresponding local nautical mile = $364,120 \div 60 = 6068.6$ statute ft., which by definition is also equal to 6000 geographic ft. It follows that the geographic Foot at Athens is $6068.6 \div 6000 = 1.011$ Statute Ft. And the local geographic stade = 6069 ft. A second of latitude arc at that latitude is 6068.6 statute ft. / 60 sec per min. = 101.14 statute ft. For the latitude of the Koltermann Site we have for the degree, min., and second of latitude arc: 364,480, 6074.6, and 101.24 statute ft. Our Base Line (between Penny and Quarter) on RBL and P&RQ was measured with the Total Station as 99.98 ft., which rounds to 100.0 ft. As shown above, one might have measured from somewhere else in the triangular notch up to 5 inch (0.42 ft.) from where the quarter was placed. Therefore, we could have an uncertainty in the length of ± 0.4 ft. This is 100.0 ± 0.4 or a band from 99.6 ft. to 100.4 ft. Neither 100 Greek Ft. (101.35 ft.) nor a local second of latitude arc (also 100 local geographic feet or 101.24 statute feet) fall within the band of uncertainty for our Base Line. The unanswered question is how did 100 English statute feet, or the Engineers' Station get encoded into the Koltermann site, and at sites further north such as at Peguamung Point on the shores of Lake Superior and near Timm's Hill, the highest spot in Wisconsin. * See Side Note to the right.

* See Side Note to the right.

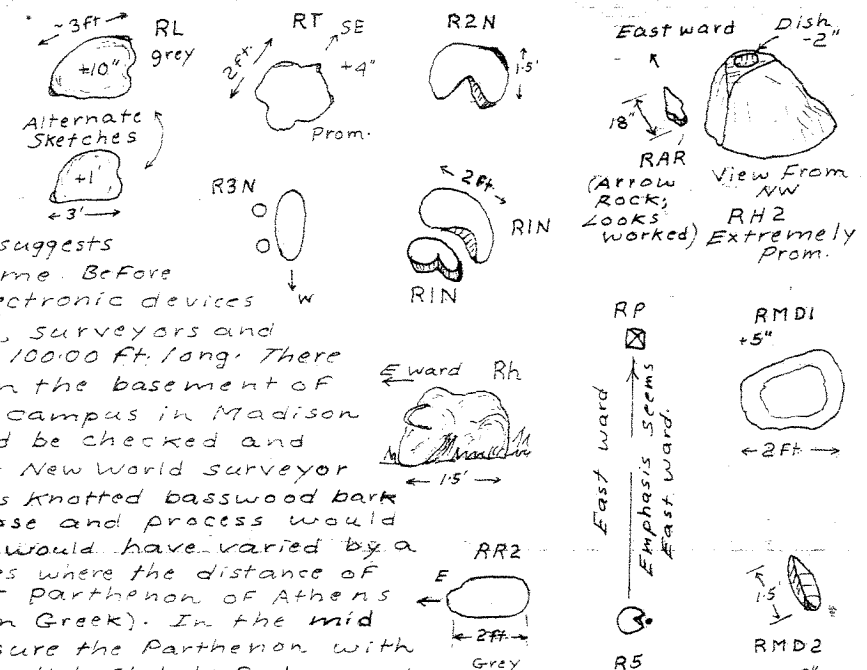
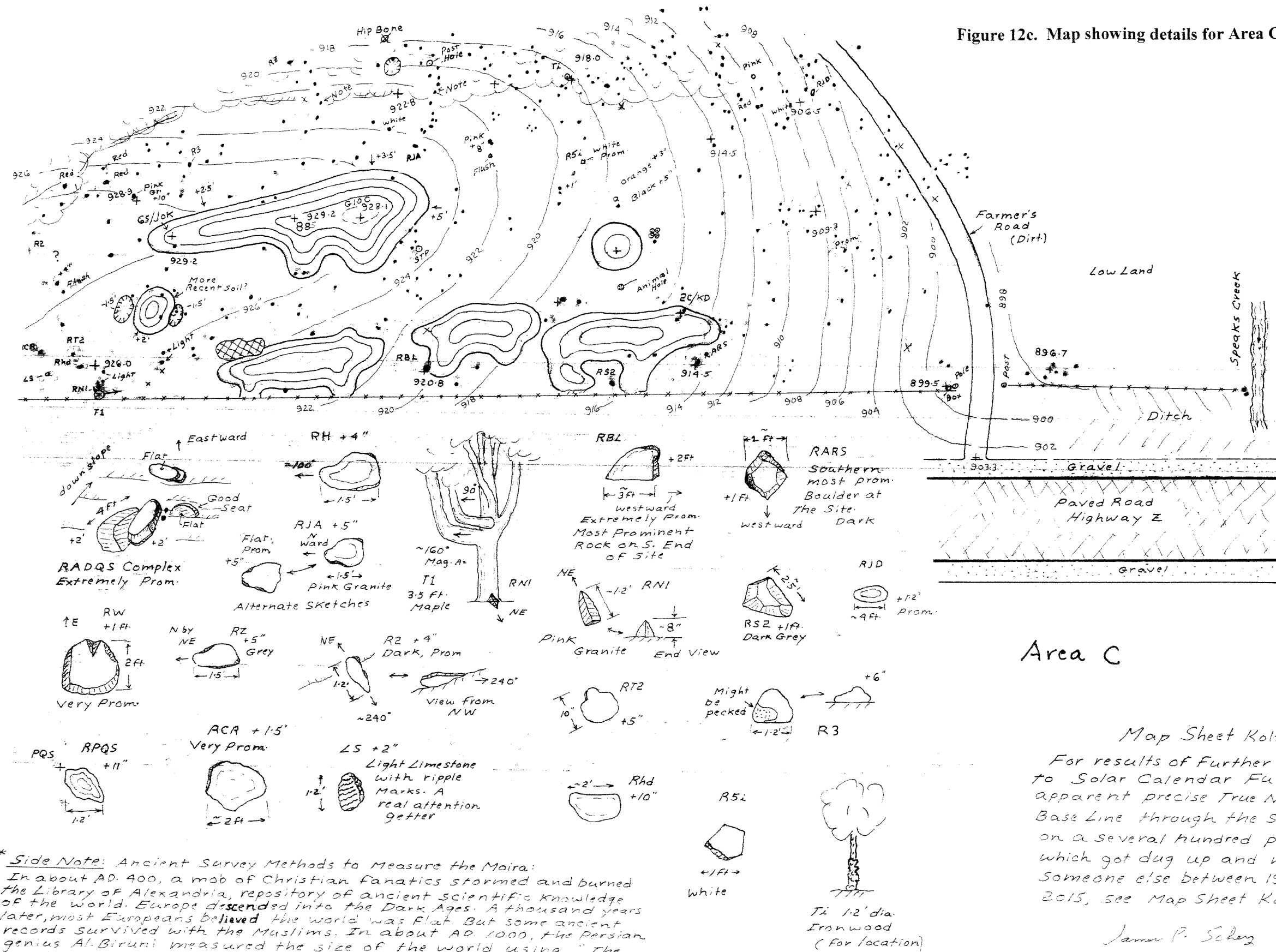


Figure 12c. Map showing details for Area C in Figure 12



Area C

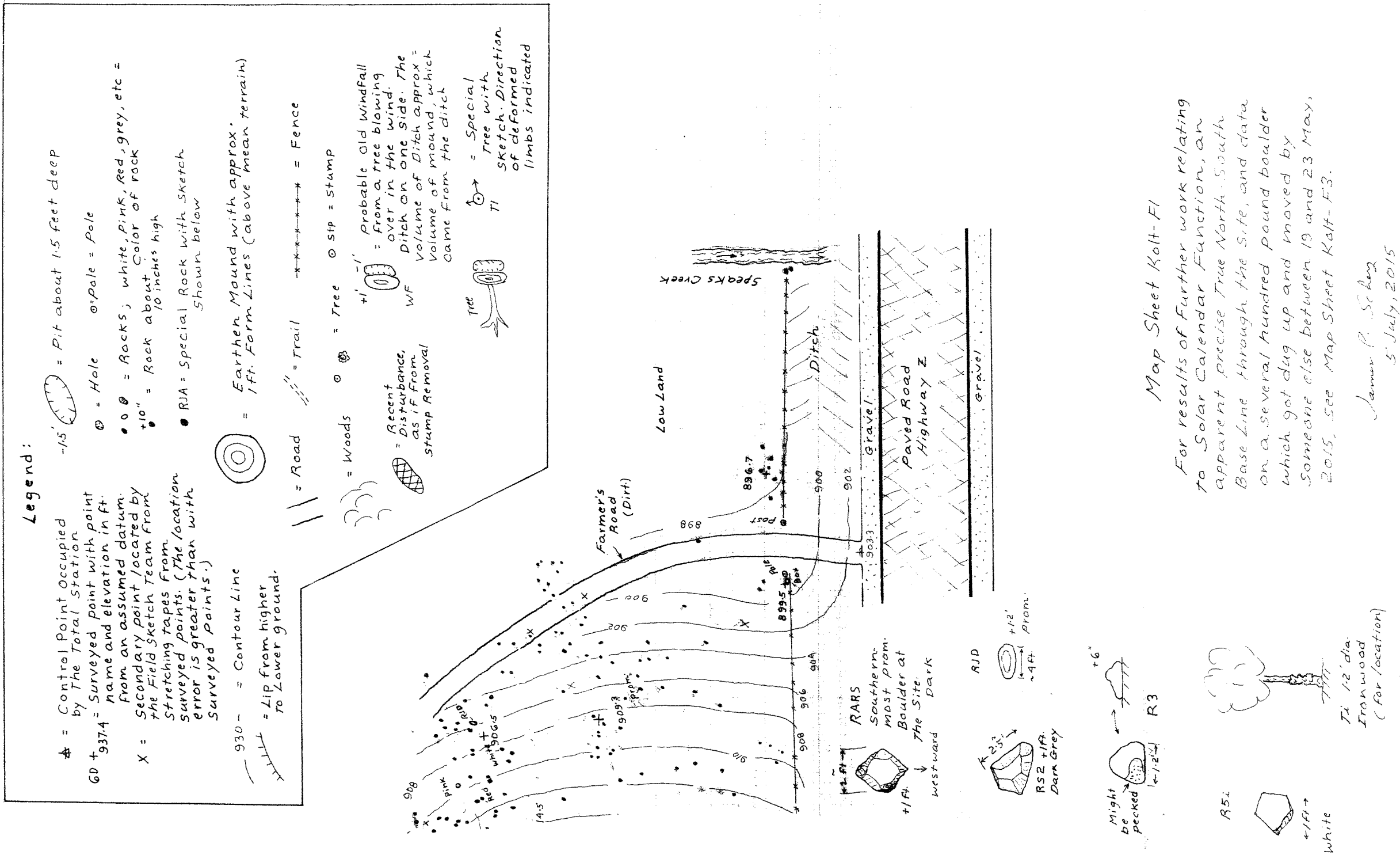
Map Sheet Kolt-F1

For results of Further work relating to Solar Calendar Function, an apparent precise True North-South Base Line through the site, and data on a several hundred pound boulder which got dug up and moved by someone else between 19 and 23 May, 2015, see Map Sheet Kolt-F3.

Jamie P. Schatz
5 July, 2015

* Side Note: Ancient Survey Methods to Measure the Moira:
In about AD. 400, a mob of Christian fanatics stormed and burned the Library of Alexandria, repository of ancient scientific knowledge of the world. Europe descended into the Dark Ages. A thousand years later, most Europeans believed the world was flat. But some ancient records survived with the Muslims. In about AD. 1000, the Persian genius Al-Biruni measured the size of the world using "The Methods of the Ancients". On flat land, he precisely measured the altitude of a culminating northern star, and then had two survey parties tape due north until the altitude was precisely one degree higher. The taped distance, in any units of measure, was a degree of latitude arc (or ancient Egyptian Moira). This could be divided into what we call the local nautical mile, the geographic stade, or a second of latitude arc.

Area D



Previous Work at the Kolterman Site by Herman Bender:

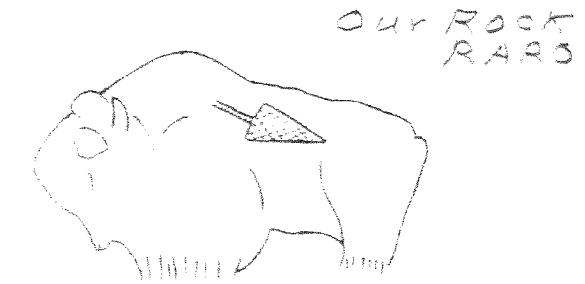
We need to acknowledge Herman Bender and his crew for previous study at the Kolterman Site and for carefully photographing some special rocks. Although we sketched in the shapes of the special rocks, Herman's photos of them give a better representation of their true and unusual shape. As our goals were different than those of Bender and his crew, we purposely did not try to precisely map the rocks at the north end of the group, where Bender had spent considerable time carefully measuring rocks which relate to what he calls the Kolterman Star Man. Our early efforts at sketching rocks were indeed at the north end of the site, but the work was for training only, and we did not try to verify the location of all the rocks that the students sketched in this area, nor is likely that we got all of the rocks hidden in the grass. And there were some unresolved errors in a few of the first student sketches in this region. For the precise location of all the rocks in this area, you should refer to Herman Bender's previous maps.

The following figures are from Bender's report "Bison Effigy Stones in Wisconsin," 2013. Besides our figure numbers, we will also show Bender's figure numbers from his report so the reader can better follow his notations. Some of his special rocks are the same as rocks we mapped and show with different notations in Figures 12 to 12d. As far as possible, I have tried to coordinate his photos with the names and sketches we give for the same rocks. Our locations and sketches are on our maps in Figures 12 to 12d.



Figure 44. The vulva rock which sits near the broken and tipped bison effigy rock (Fig. 35, 36) and is aligned to the winter solstice sunrise. Vulvas and bison share a profound, feminine association with giving life and by sustaining it through renewal of the buffalo herds and emergence (Sundstrom 2004:83-88).

Figure 13. Herman's Vulva Rock, which we call rock Rw in Figures 12 and 12c.

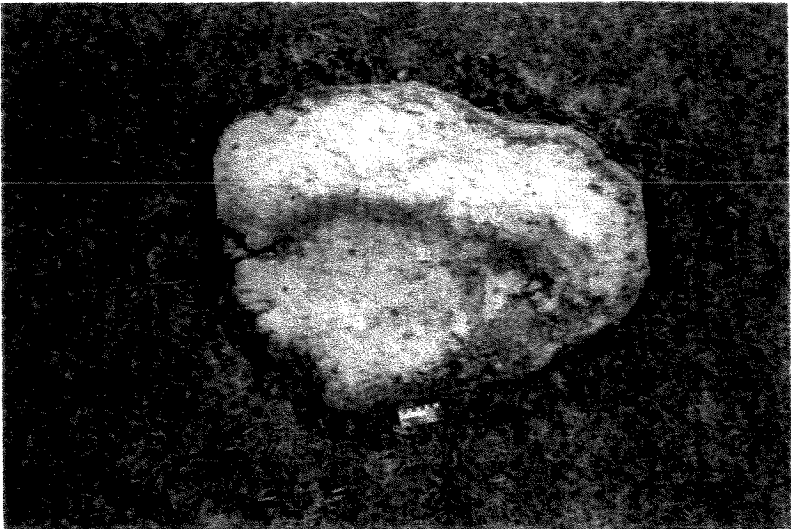


Figures 23a. Photo of Bruder's rock and sketch showing buffalo features for comparison.



Figure 23b. Buffalo in profile same as that of the Bruder's rock effigy (Fig. 23a). Barb Smits photo.

Figure 14. Bruder's Rock in Hermans report, which we call rock RARO in Figure 12b.



our Rock RBL1

Figure 39a. Photo of the overhead view of the Star-being headstone with its dual humps.

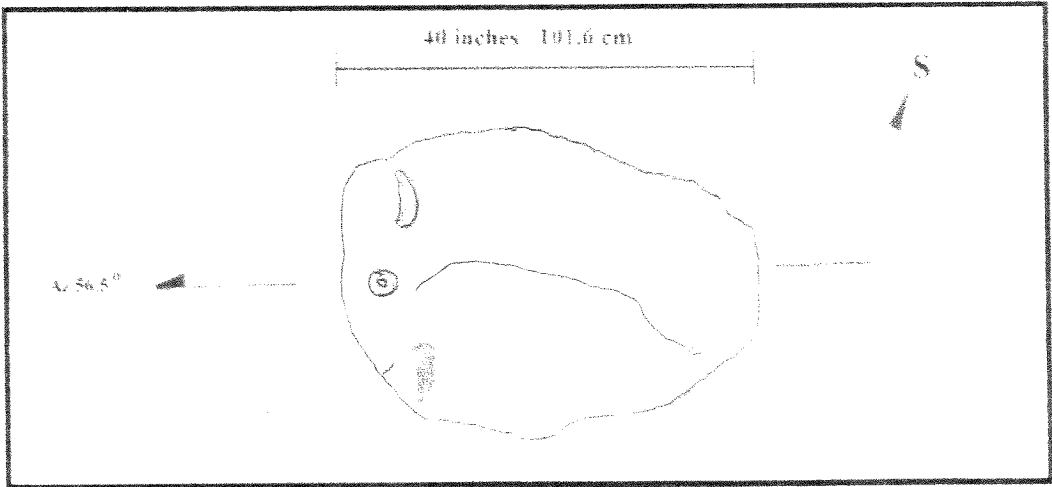


Figure 39b. Outline drawing the two-headed bison effigy rock with horns and eye added to suggest the dual bison profile viewed from either the north or south. At the latitude of Kolterman, the Azimuth 56.5° is near the 0° elevation of the first flash of the summer solstice sunrise. The Cheyenne Tsistsistas preserved origin stories about *Haztovo hotaxceo*, or “two face star people” (Bender 2004:17, Schlesier 1982:79,135).

Figure 15. The rock which Bender calls the Star-being headstone, and which we call RBL1

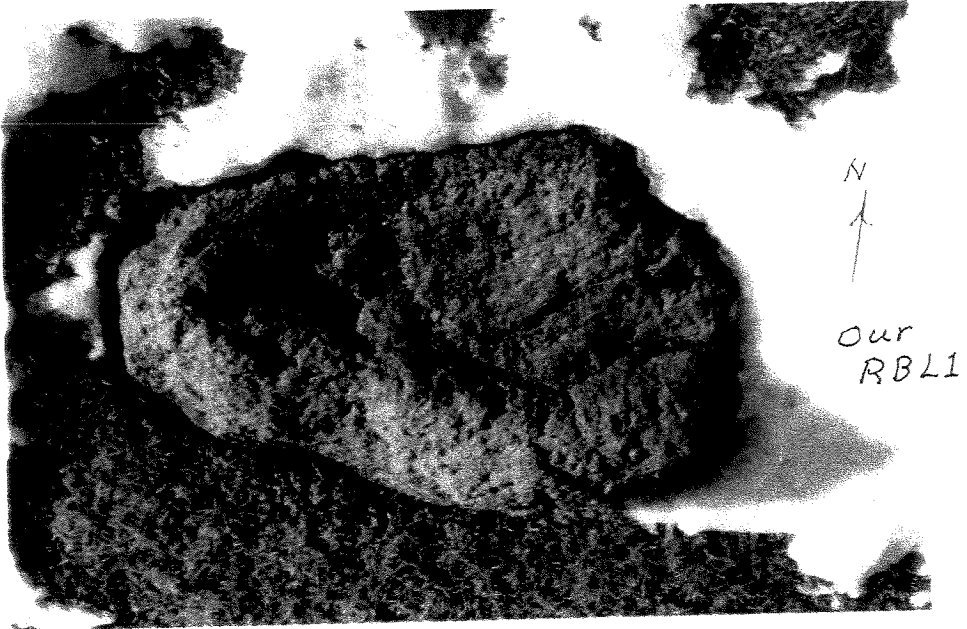
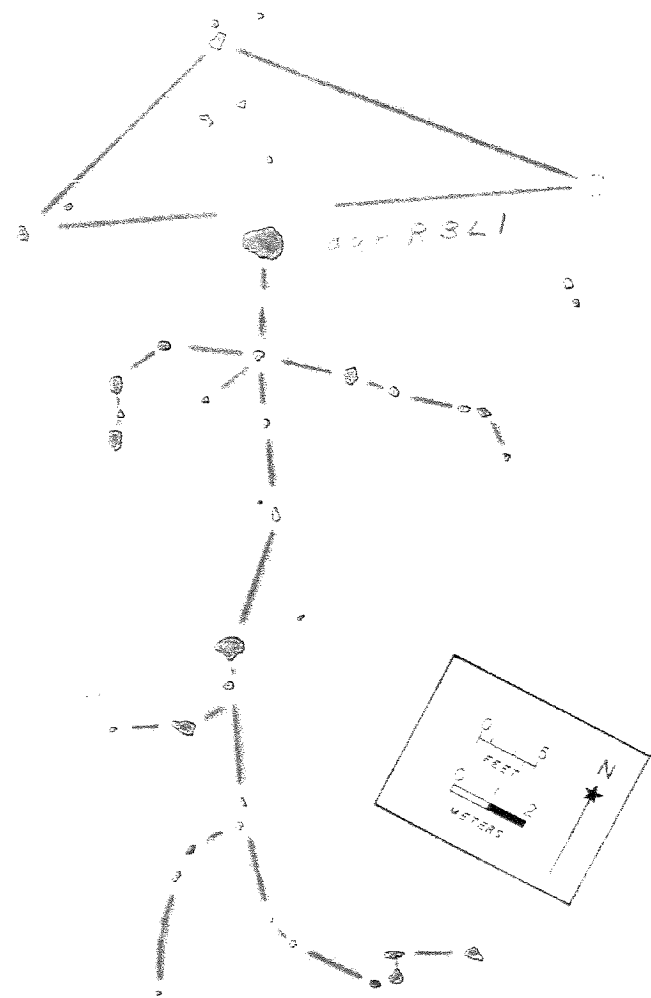


Figure 38a. Photo (top) of the highly weathered, Star-being bison-shaped headstone. In the grazing light of the late Fall and early Winter the eye detail and what may have been a horn are apparent. Note the cleaved flat, straight and perpendicular back (west) end and dip like that on buffalo in viewed in full profile (bottom photo). When fresh, the headstone, red rhyolite porphyry, was a deep red color.

Figure 15a. Another photo of the Star-being headstone, shown as our RBL1 in Figure 12b



Kolterman petroform effigy

Figure 37. Map of the Kolterman Star-being, a human-like petroform effigy with a red-colored, bison-shaped headstone (Fig. 38a).

Figure 16. Bender's Kolterman Star-being, which has what we call RBL1 as its head



Figure 27a. Recumbent or *emerging* bison effigy aligned to face the summer solstice sunrise. Note the concave depression used to form the head similar to the Milk River bison effigy (Fig. 7a).

OUR ROCK RH2

RH2
JP5
/



Figure 27b. Comparison profile views of a recumbent bison and the recumbent bison effigy rock.

Figure 17. Prominent rock on the eastern side of the mound group, which we call RH2
Note the depression or dish on top which might have been used for tobacco offerings.



Figure 33. Large, bison effigy rock shattered into three pieces. Note the extreme hump, flat back end and base rock at top right on which it stood when whole. This bison bull effigy faced west.

Figure 18. A pair of very prominent rocks on the eastern edge of the mound group, which we call the RADQS Complex. --To a person at the Observation Mound to the far east, the sun would set over these two rocks on the Fall Cross Quarter Day period, which divides the time between summer solstice and the winter solstice. We celebrate the dates from Halloween to All Soul's Day. --

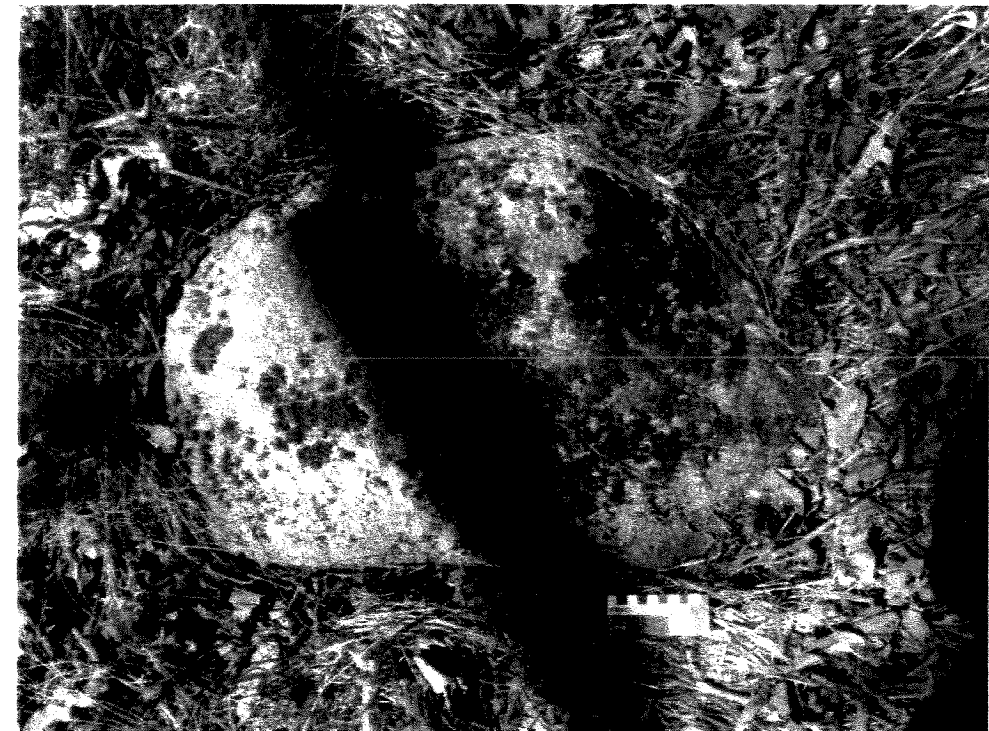


Figure 43a. Photo of a north-facing bison effigy rock which likely stood on its flat base, the head at right partially buried. It is very highly weathered red granite.



Figure 43b. Buffalo in a head's down profile for comparison to Fig. 43a. Barb Smits photo.

Figure 19. A large low-lying boulder which was originally about 11 inches high, which Bender thought was once "a north-facing bison effigy rock which likely stood on its flat base . ." See rock Rhd in Figure 12c. --This is the boulder which got dug up and moved between 19 and 23 May, 2015. After it got moved, it is shown on our maps as RhdM in Figure 21f, etc. --

The Rock That Moved:

The boulder shown in Figure 19 appears to be the rock which we located and sketched as Rhd in Figure 12c. But on 23 May, 2105, it was clear that this large boulder had been dug up and moved about 7 ft. onto the true north-south base line. There, it was propped upright to look like a Bison Rock about $1\frac{1}{2}$ ft. high, headed north. The moss that was once on the exposed upper surface (as it was when shown in Figure 19), was now on the eastern side, and the formerly unexposed area of the rock was now on the western side. See Figure 21f. The base of the rock was resting on the top of the sod, and the area where it had once been located was crudely covered in with dirt and topped with sod and wilting weeds from new borrow areas not far away. (See Annex A.) Concerned that our group might be suspected and accused of moving this rock onto the true north-south base line, I notified authorities and called for an investigation. Our studies at the Kolterman Site came to an abrupt end as the site was posted with no trespassing signs, while the investigation proceeded.

But before this happened, we were able to precisely map the new location of this boulder, which we called RhdM. Both the new and original locations of this boulder are shown in Figures 21, 21f, and 21h. These same figures also show the geometry and apparent calendar function of the mounds and rocks along the road as seen by an observer at the Observation Mound on the hill to the east, across Speaks Creek.

Long Range Calendar Alignments:

Once we had included the Observation Mound in our surveys, we were then able to see how it could have worked as part of a sunset calendar when the trees east of the site did not interfere with the lines of sight. Figures 21 to 21h show the resulting maps.

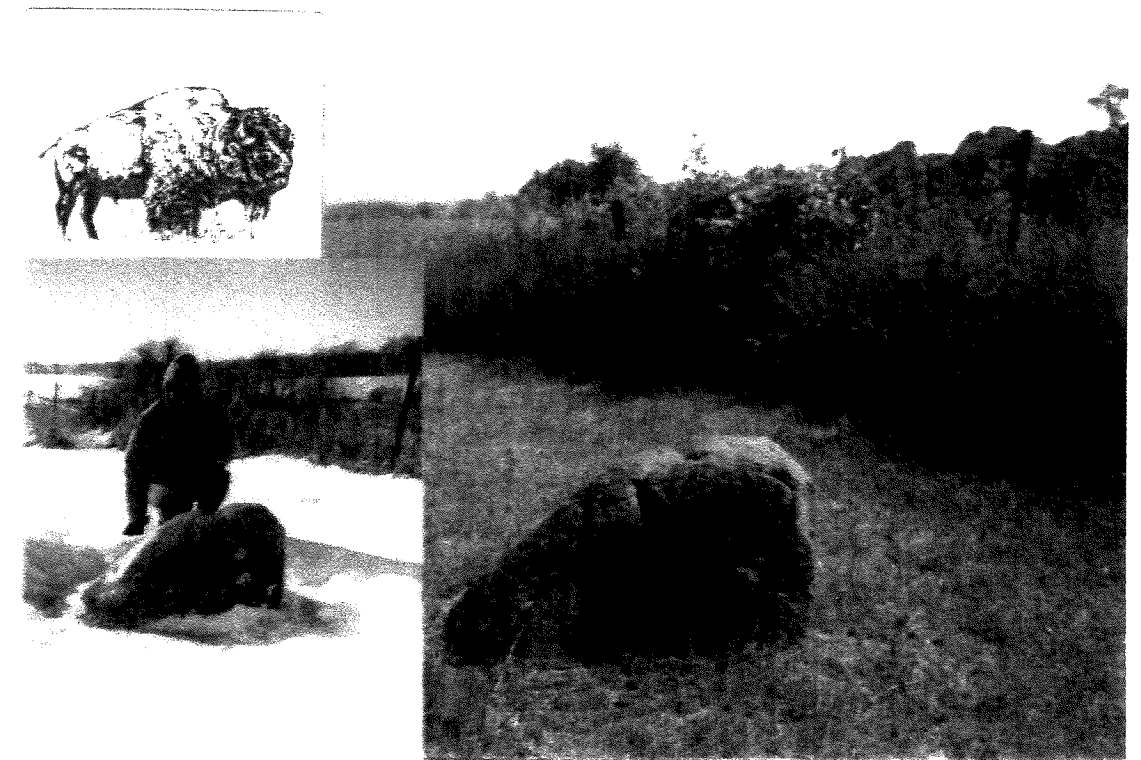
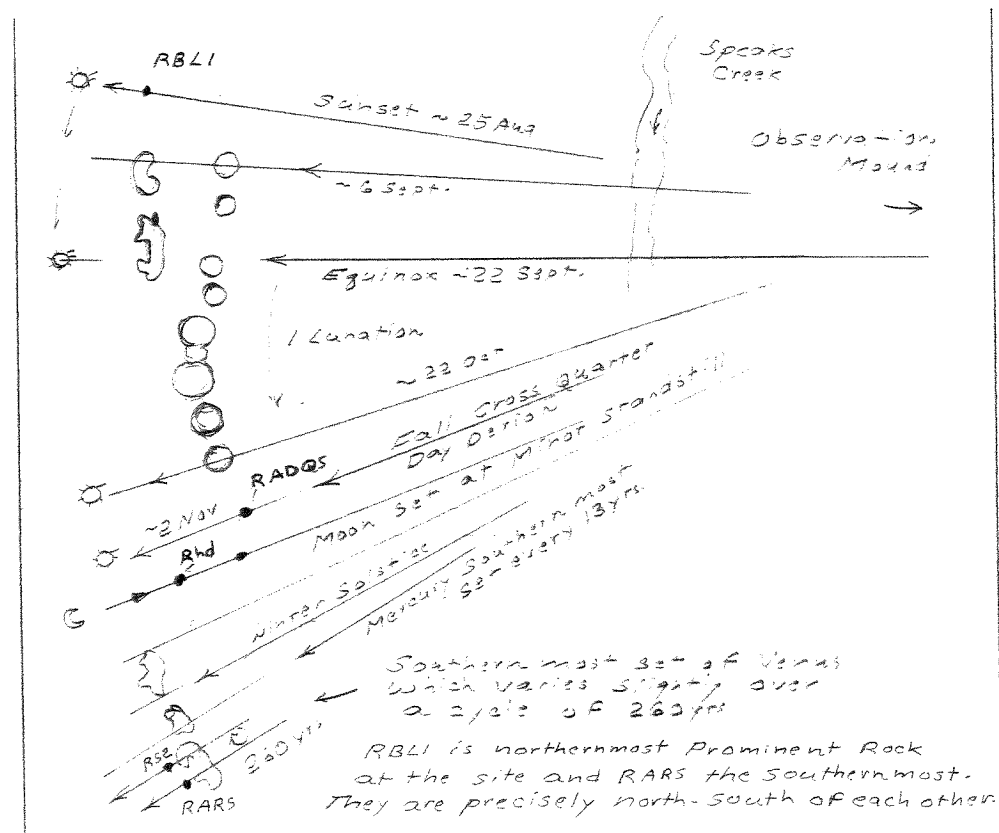


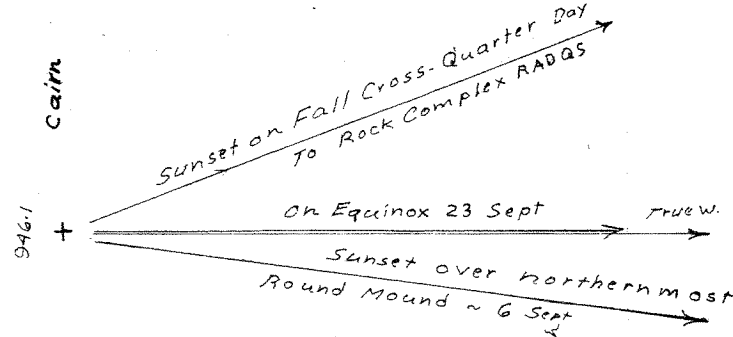
Figure 25. Recumbent or *emerging* bison effigy at the Kolterman Mounds. It is aligned to face the summer solstice sunset. Note the profound congruence of the profiles between the sketch of a buffalo and the effigy rock. Herman Bender with the bison effigy in the inset photo at lower left.

Figure 20. The most impressive rock on the south end of the mound group. As shown, it looks like a bison. It is shown as RBL in our map and field sketches in Figure 12c and 21f.

Map of the Koltermann Mound Group Site in Dodge County, Wis. Made in May, 2015

Note: The Cairn is located about 300 Ft. East of where shown below.

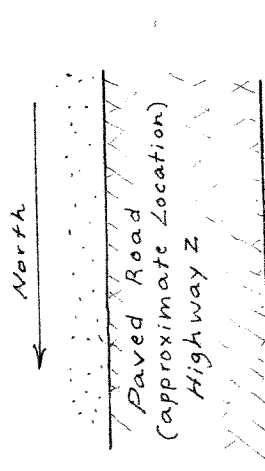
Observation Point at the Koltermann Site (assuming no trees) is the center of a small mound about 1.5 ft. high, covered with stones and apparent votive offerings.



A Calendar Site:
Like the string of round mounds at Aztalan, and those at Franks Hill at Muscoda, Wis., the round mounds at the Koltermann Site can also function as a sunset calendar site with an observer at a fixed point to the east. (For data relating to Aztalan and Muscoda, refer to "Surveys at Christmas Hill in May 2012," 8 June, 2012, and "What We Have Learned from Surveying Effigy Mounds," 17 Jan, 2015, by James P. Scherz; or other related AES documents.) At Aztalan and Muscoda, the functional Sunset calendars are from the Spring Cross-quarter Day period (our May Day) to the Summer Solstice, and then on to the Summer Cross-quarter Day period in early August (celebrated as Green Corn Festivities or First Fruits Ceremonies in some cultures and a time preserved in Britain as Lammas Day). The periods punctuated by the calendars at Muscoda and Aztalan relate to planting, maximum vegetation growth, and harvest of crops, and therefore have been referred to, by some, as Agricultural Calendars.

At Aztalan, the single observation point is a small isolated mound atop Christmas Hill to the east. At the Koltermann Site, it is a low, round mound on a hill in the woods, covered with small rocks, etc., which is here referred to as "The Cairn". On the Equinoxes, an observer at the Cairn could watch the Sun set due west over the northernmost of a row of 7 round mounds near the road. In the fall, this would be on about 22 Sept. A month later (one lunation) the Sun would set over the southernmost round mound in this row of 7 mounds (about 22 Oct.). About 10 days later, the Sun would set over an extremely prominent group of rocks shown here as the RADQS Complex. This is the last clear solar date in the fall calendar, as shown here.

But north of the row of 7 round mounds near the road are two other round mounds and some other features. These relate to a period from late August to the Fall Equinox. This corresponds to the beginning of the wild rice harvest, which was once very important in the nearby Horicon Marsh. After the wild rice harvest, immense flocks of migrating waterfowl would have followed. Dare we call the inherent calendar function of this site a Rice Harvest and Hunting Calendar?



There is an apparent North-South Base Line between the largest boulders at the north end of this site (Rock RBL1 and RAR0). This makes the Koltermann site unique, since at other effigy mound groups, the true north is always encoded. Here, it is open and extends from the northernmost prominent rock, RBL1, to the southernmost prominent rock, RAR0. Herman Bender had previously found this true North-South alignment but apparently did not realize its significance. See his paper from 2013, pages 47 + 49.

In late May, 2015, I met Herman near rocks RCR and Rhd. We could not see from there to the north end of the group. He said that these rocks were directly south of the northernmost large boulder. Our ongoing survey indicated that RCR was, but that Rhd was not. On its side and about 10 inches high, the shape corresponded to special rocks at Powers Bluff which marked the corners of triangles you can make with a tape which can be used to get angles of 1 deg. On 25 May, 2015, Rock Rhd had been dug up and propped upright at the position shown as Rhd M. It was then on a precise true North-South line with RCR, RPQS, RAR0, and the northernmost and southernmost rocks RBL1 and RARS. The North-South base line had been accented but other important geometry was lost in the process.

*DISC: Disclaimer. Our teaching sessions began on the north end of the site. There was some early confusion on a few field sketches here of rocks not directly associated with the mounds, which we did not resolve. For more accurate locations in this region, refer to maps by Herman Bender, such as in "Bison Effigy Stones in Wisconsin," by Herman Bender, 2013.

Area A

Figure 21a. Map showing details for Area A in Figure 21

Mapping of The Kolterman Mound Group in Dodge County, Wisconsin (NE¼ of NE¼ of Section 17, T13N,R16E) in May,2015 ; ASI No.47-00-155 ; Latitude = 43°36', Longitude = 88°36'.

These surveys were done by members of the Ancient Earthworks Society (AES) of Madison and the Mid-America Geographic Foundation (MAGF) of Fond du Lac, Wisc. Supervision was by James P. Scherz, Prof. Emeritus, Dept. of Civil Engineering, Univ. of Wisc., Madison. Field Survey methods were a Total Station oriented to true north by sunshots (to an accuracy of better than 0.01 deg), and by field sketches using tapes stretched between surveyed points and with extended level rods. The accuracy goals for the surveyed points were the nearest 0.1 ft., and for points on the field sketches to a few feet (although greater errors can be expected with beginning sketch teams for rocks up to 20 ft from the tape, using extended level rods). Efforts began as a simple training site for people who wanted to learn how to survey Indian mounds and associated rocks. David Stetter (from MAGF) chose this site for training because it has both well-defined and very subtle Indian mounds and many associated rocks. He obtained permission to conduct classes here on two weekends from James Uhrinak, Secretary of the Milwaukee Audubon Society, Inc., who is in charge of the site. The two planned weekends were 2-3 May and 9-10 May, 2015. David Stetter and Glen Dechsner learned how to operate the Total Station, and about ten people were trained in field sketching on the first weekend. Things went well, and we essentially finished surveying the north part of the mound group. We discussed how the row of round mounds along the road have similarities with round mounds on ridges at Aztalan and Frank's Hill at Muscoda, which can serve as sunset calendars with an observer at a fixed point to the east. Could the Kolterman site follow the same pattern from some similar small mound on the hill in the woods to the east? Soon Glen and David announced they had found such a mound in the middle of the woods on a hill to the east. It was covered with rocks and a few bricks. From some similar small mound on the hill in the woods to the east? I took these to indicate that the site had been used in recent historical times, that the mound had been covered by votive offerings, and that it likely was still in guarded verbal histories (an "active" site). If we could carefully locate this rock-covered mound (herein called the "Cairn") we could examine the possible calendar function of the site. After reducing the data from the first weekend, it became apparent that the two most prominent rocks at the north end of the site (herein shown as RBL and RAR) were on an open North-South Base Line, and were about 100 statute feet apart (the Engineer's station). A distance of 100 statute feet was also found near Timm's Hill and at Peguaming near Lake Superior, but not open on a true north-south line. A true north-south base line was found at the Dolmen Site in Minn., along with a unit distance of the Geographic Stade (1/10 of a nautical mile, "a mariner's unit of measure"). But in no other effigy mound group in Wisconsin have I seen the important North-South line openly displayed. Although the geometry of all such sites is based on true North (Star North), the direction of true north is otherwise deeply hidden and encoded with clear prime alignments from true north at key angles you can make with a rope (60°, 45°, these angles bisected, or the Ancient Golden Ratio Angles of 51.8° and 38.2°). The open North-South base line and the Cairn turned this site from a simple training area to a very special mound group which needed careful and thorough investigation.

On the second weekend, some of the students trained in field sketching returned to essentially finish the work on the south end. Also Buck Trawicky (from AES) and I returned to run a traverse to the Cairn and to more precisely locate boulders and rocks along the west edge of the area, possibly associated with the true North-South Base Line. The results are shown below. People from MAGF and AES who worked on the Kolterman site in May 2015 include David Stetter, Glen Dechsner, Jody Harrell, Buck Trawicky, Donna and Bill Stehling, Mike Edwards, Gene Shugart, Patty Brooks, Lisa and Tony Roman, Jay Mullins, Tom Solberg, and David Weier. There must have also been a crew of several other people not in our groups who dug up a several hundred pound boulder (shown as Rhd) between 19 and 25 May, after it appeared our work was done, and propped it upwards to be on line with our extended base line, which long ago had been encoded into the site. The new location of this boulder is shown as Rhd M. We had previously precisely mapped this boulder in its original location on 18 and 19 May, and I discovered that it had been dug up and moved on or about 23 May. The moss which had been on top of the rock was now on its eastern side. And the hole it had been removed from was crudely filled in with dirt from a borrow area, clearly showing where spade fulls of earth had been removed. There were also wilting weeds in the covered hole from another borrow area. On 25 May, Jay Mullins and I precisely surveyed the location of the moved rock and the borrow areas. To me, this was a gross violation of an ancient ceremonial site, where wise men apparently tried to preserve their ancient knowledge of surveying, geometry and astronomy. Before being moved, Rock Rhd seems to have encoded the survey distance of the rod (16.5 ft) which is also found at Peguaming, Mich. This rock also encoded a 16.5-13.8 ft triangle, which is the most efficient triangle I have seen which could have been used by ancient surveyors or architects. As the 3-4-5 triangle can be used (and still is) to create a 90° angle with tapes, so also the 16.5-13.8 triangle can be used to create an accurate angle of one degree. Also, before being moved, Rock Rhd (along with special rocks R2, RTR, and RNL on line) defined to the Cairn, the minimum moon swing at the site. Long range precise alignments (to the Cairn) at maximum moon swing are missing at this site. But they are not needed to set the 18.6 yr. lunar cycle (associated with eclipses) if the maximum moon swing is used instead. Lest it be suspected that the crew under my supervision moved this important rock, I call for an immediate and thorough investigation. James P. Scherz

Area B

Figure 21b. Map showing details for Area B in Figure 21

Mapping of The Kolterman Mound Group in Dodge County, Wisconsin (NE¼ of NE¼ of Section 17, T13N R16E) in May, 2015

ASI No. 47-00-155 ; Latitude = 43°36' Longitude = 88°36'

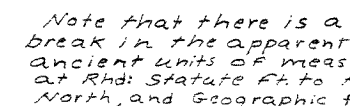
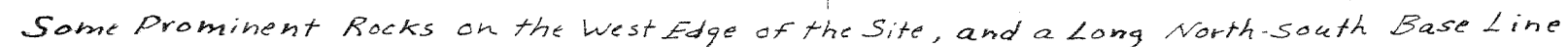
Dept. These surveys were done by members of the Ancient Earthworks Society (AES) of Madison and the Mid-America Geographic Foundation (MAGF) of Fond du Lac, Wisc. Supervision was by James P. Schertz, Prof. Emeritus, Dept. of Civil Engineering, Univ. of Wisc., Madison. Field Survey points oriented to true north by sunshots (to an accuracy of better than 0.01 deg), and by field sketches using tapes stretched between surveyed points and with extended level rods. The accuracy goals for the surveyed points were the nearest 0.1 ft, and for points on the field sketches to a few feet. Although greater errors can be expected with beginning sketch teams for rocks up to 20 ft from the tape, using extended level rods. Efforts began as a simple training exercise for people who wanted to learn how to survey Indian mounds and very subtle ridges at Aztalan. Things went well, and we essentially finished the North-South Line, and were about 100 statute feet apart (the Engineer's station). A distance of 100 statute feet was also taken from some similarities with round mounds on the hill in the woods to the east? Soon Glen and David announced they had found a mound in the middle of the woods on a hill to the east. It was covered with rocks and a few bricks. I took these to indicate that the site had been used in recent historical times, that the mound had been covered by votive offerings, and that it likely was still guarded (the Engineer's station). If we could carefully locate this rock-covered mound (herein called the "Cairn") we could examine the possible calendar function of the site. After reducing the data from the first weekend, it became apparent that the two most prominent rocks at the north end of the site (herein shown as RB1 and RB2) were on an open North-South base line, and encoded with clear prime alignments from true north at key angles you can make with a rope (60°, 45°, these angles bisected) or the Ancient Golden Ratio Angles of 518° and 382°. But in no other effigy mound group in Wisconsin have I seen the important North-South line openly displayed. Although the geometry of all such sites is based on true North (Star North), the direction of true north is otherwise deeply hidden and encoded with clear prime alignments from true north at key angles you can make with a rope (60°, 45°, these angles bisected) or the Ancient Golden Ratio Angles of 518° and 382°. The open North-South base line and the Cairn turned this site from a simple training area to a very special mound group which needed careful and thorough investigation.

Area B

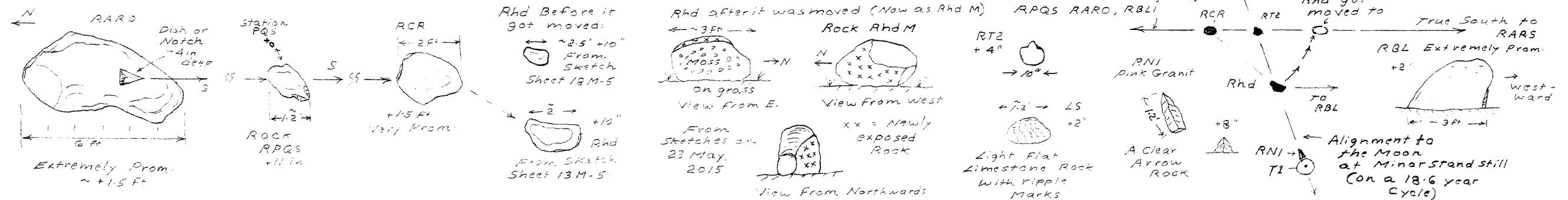
Figure 21c. Map showing details for Area B in Figure 21

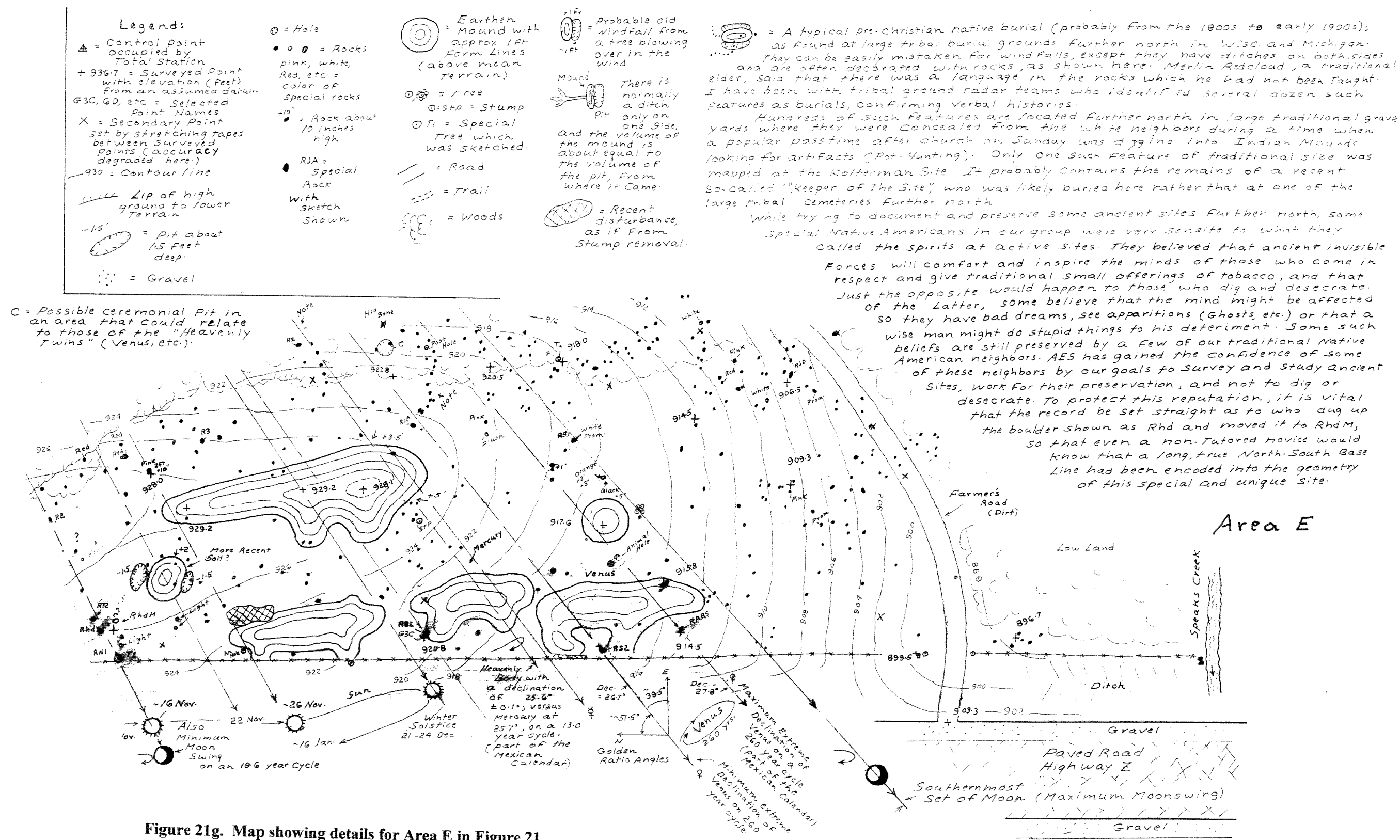
On the second weekend, some of the students trained in field sketching returned to essentially finish the work on the south end. Also Buck Trawicky (from AES) and I returned to run a traverse to the Cairn and to more precisely locate boulders and rocks along the west edge of the area, possibly associated with the true North-South Base Line. The results are shown below. People from MAGF and AES who worked on the Katterman Site in May 2015 include David Sketler, Glen Oechsner, Jody Harrell, Buck Trawicky, Donna and Bill Stehling, Mike Edwards, Gene Skugart, Patty Brooks, Lisa and Tony Roman, Jay Mullins, Tom Selberg, and David Weier. There must have also been a crew of several other people not in our groups who dug up a several hundred pound boulder (shown as Rhd) between 19 and 25 May, after it appeared our work was crudely filled in with dirt from a borrow area, clearly showing where spade fulls of earth had been removed. The moss which had been on top of the rock was now on its eastern side. And the hole it had been removed from was crudely filled in with dirt from a borrow area. On 25 May, Jay Mullins and I removed the location of the moved rock and the borrow areas. To me, this was a gross violation of an ancient ceremonial site, where wise men apparently tried to preserve their ancient knowledge of astronomy and geometry. Also, before being moved, Rock Rhd seems to have encoded the survey distance of the rod (16.5 ft) which is also found at Peguaming, Mich. This rock also encoded a 16.5-13-8 ft triangle, which is the most efficient triangle of one degree. Also, before being moved, Rock Rhd could have been used by ancient surveyors or architects. As the 3-4-5 triangle can be used (and still is) to create a 90° angle with tapes, so also the 16.5-13-8 triangle can be used to create an accurate angle of one degree. Also, before being moved, Rock Rhd could have been used with special rocks R2, R3, and R4 (on line) defined to the Cairn, the minimum moon swing at the site. Long range precise alignments (to the Cairn) at maximum moon swing are missing at this site. But they are not needed to set the 18.6 yr lunar cycle (associated with eclipses) if the minimum moon swing is used instead. Let it be suspected that the crew under my supervision moved this important rock. I call for an immediate and thorough investigation. James P. Schuch

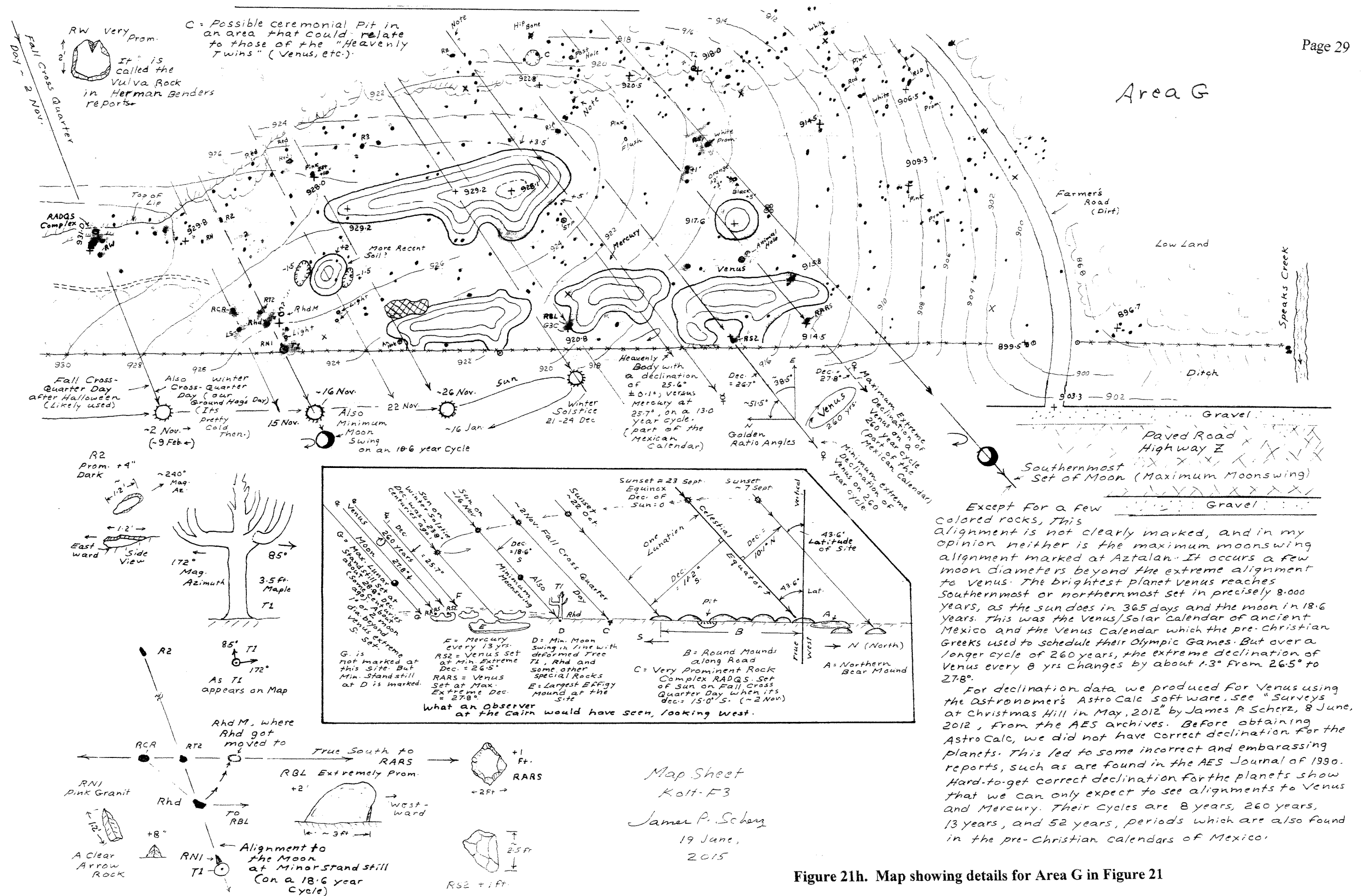
Figure 21d. Map showing details for Area B in Figure 21



Also 600 Geographic Ft. (The geographic Stade).
Ancient navigators used 6000 geographic Feet in a nautical
mile, which varies from about 6046 statute ft at the
equator to 6108 statute ft. near the poles. The geographic Stade
is $\frac{1}{10}$ of a nautical mile (between 605 and 611 statute ft.).
The distance of 605 ft is found at the Dolmen
Site in Minn. (the only other site I have seen with
open N-S base lines). And 611 ft. is found here. R2







Summary:

The envisioned simple field exercise to teach some people how to sketch mounds and rocks at the Kolterman Site on two weekends in early May, 2015, was so successful that we mapped the entire site. The form of a bear mound apparently looking at a crescent-shaped rock at the north end of the site seemed to signify "time." This prompted us to think that a precise long-distance calendar site might be present. Glen Oeschner and Dave Stetter went to investigate and found a single round mound covered with rocks on a hill across the stream to the east. We call this the "Observational Mound." This single mound changed the site into an apparent very precise long-distance calendar system which had to be thoroughly analyzed.

The site would have worked for a fall sunset calendar beginning in late August, punctuating on the Fall Equinox (about 22 Sept.) and ending when the sun set over the southernmost round mound on about 22 Oct., one month after the fall equinox. Some very special rocks which we show as the RADQS Complex and Rw (a rock which Bender calls the Vulva Rock) also correspond to where the sun will set of the Fall Cross Quarter Day period which we honor as Halloween (Hallows Eve) on 31 Oct., to All Soul's day on 2 Nov. This is not an agricultural calendar like we seem to see at Aztalan and at Frank's Hill near Muscoda. Instead, the apparent sunset function at the Kolterman Site corresponds to the time of Wild Rice Harvest and the southern migration of northern waterfowl (a likely important food source).

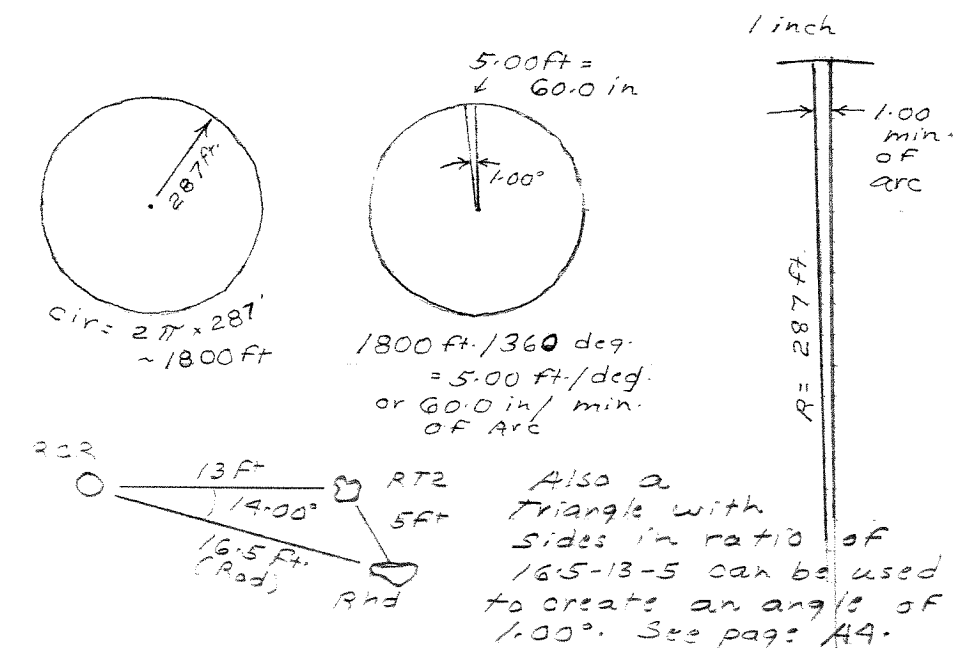
The geometry of the mounds at the south end of the mound group correspond to the extreme set of the planet Venus, as is also seen at Aztalan and the Jeffers Petroglyph Site in Minnesota. The extreme set of Venus is on a cycle of precisely 8,000 years (to the day). This cycle was a very important part of the pre-Christian calendars of Mexico. The precise place where Venus will set on the western horizon changes over the generations by a very small, but observable, amount over a period of 260 years. This cycle is also found in the ancient calendars of Mexico. From the Observation Mound, one could have also watched the 13 year and 52 year declination cycles of Mercury at the Kolterman site, as at other special ancient sites, such as at the Jeffers Petroglyph site in Minnesota, etc.

There is also an open extended true north-south base line of essentially 100 ft., 287 ft. and 360 ft. at the Kolterman Site. Since the all-important true north-south direction at other effigy mound groups is not open, but encoded (with angles easily made by ropes such as 60 deg. or 45 deg., etc.) it being open at the Kolterman Site, makes the site unique. The distance of about 360 ft. suggests dividing the circle into degrees. A circle with a radius of 287 ft. creates a circumference of about 1800 ft. And one degree subtends a distance of $1800 / 360 = 5.00$ ft., or 60.0 inches. With such a circle and a normal surveying tape, one could create a precise angle of one degree or one minute of arc without using an elaborate vernier, as on modern surveying instruments. The large boulder that got moved also seems to have been originally part of a very special triangle which will yield an angle of one degree. As shown in Figure 21f and page A-4, this triangle apparently had sides of: 16.5 ft. (the rod), 13 ft., and 5 ft. This is a very special triangle, indeed, in that one of its angles is 14.00 deg. Compared to an angle of 15.00 deg. (easily and precisely made with a rope) this gives us 15.00 - 14.00 deg., or also 1.00 degree. See page A4.

The distance of 100 statute ft. has shown up at other sites, as well (see page B3). But nowhere has it been shown as precisely as at the Kolterman Site. This distance is known as the Engineer's Station, which was still used to design highways in Wisconsin in the 1960s, when I worked with the Wisc. Dept. of Transportation as a graduate student. The distance of the chain of 66 ft. clearly shows up with the distance of 100 ft at an ancient site near Tim's Hill, highest point in Wisconsin (page B3). Consequently, I must conclude that some of the ancient surveyors who laid out ancient sites in Wisconsin were using essentially the same measuring system as we were using in about 1960.

We got our metrology of the degree, the foot, chain and engineer's station from England. And instead of inventing their system, the English apparently got their sacred metrology from some other very ancient sources, according to Prof. Stecchini (in "Mysteries of the Great Pyramid" by Tompkins).

The geometry in the north-south base line at the Kolterman site can be measured so precisely that we can use the apparent measured values of about 100.0 ft., 287 ft., and 360 ft. to reliably fine-tune the unit of the foot used. It was essentially 1.004 ft. to 1.005 ft. This is not precisely our standard English statute ft. (1.000 ft.). It seems to correspond to the length of the earlier Roman Foot. This makes us wonder about the Roman coins which have been reportedly found along the Wisconsin River, at the falls of the Ohio River, along the Arkansas River, and the Green River, near the gold mines, etc. They all date from the time when the old Roman Empire began to fall in Britain in the late AD 300s. But that is a topic for a separate report after we can get back on the Kolterman Site, and carefully check these particular distances.



References:

- AES Journal: "The Journal of the Ancient Earthworks Society", Vol. 3, Autumn 1990, Madison, Wisc.
- Bender: "Bison Effigy Stones in Wisconsin" by Herman Bender, President & Founder (of) Hanwakan Center for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, Inc., Fond du Lac, Wisc., 2013
- Scherz, James P., 4 April, 2009, "Survey Report for Eagle Rock"
- Stecchini, Livio Catullo, in the appendix of "Secrets of the Great Pyramid" by Peter Tompkins, 1971

Annexes:

- Annex A. "The Rock That Moved at the Kolterman Site"
- Annex B. Examples of our Surveys
- Annex C. Agricultural-type Calendars at Aztalan and Muscoda

The Rock That Moved at the Kolterman Site
Between 19 and 23 May, 2015:

By
 James P. Scherz
 19 May, 2015 (Revised 19 July, 2015)

We held field mapping classes for members of the Ancient Earthworks Society (AES) from Madison, and the Mid-America Geographic Foundation (MAGF) from Fond du Lac, Wisc., at the Kolterman Effigy Mound Site on the weekends of 2-3 and 9-10 May, 2015. It became apparent on the first weekend that there was an open true North-South Base Line at this effigy mound group. It begins as precisely 100.0 statute ft. long, between the rim of the northernmost prominent boulder at the site (called RBL1) and a remarkable notch in the second very prominent boulder south (in rock RARO). This length is a surveyor's unit called the Engineer's Station, which we had found at two other special ancient sites further north. This makes the site very special in that at all the other effigy mound groups we had surveyed, true north is encoded with prominent alignments and angles easily made by rope geometry (such as the angle of 60 deg.).

Pamita, trained in the Menominee traditional lodges, said that the important geometry at such sites was encoded and hidden from the commoners even at the time that the mounds were built. But he said there were clues in the inconspicuous rocks, especially those on the mounds, which the initiated priests could use to unlock the useful geometry at the sites. For data on rocks herein mentioned at the Kolterman Site, see the accompanying Map Sheet Kolt-F3.

Only at the Dolmen Site in the portage area between the waters of Lake Superior and Hudson Bay, had I seen an open true North-South Base Line. There, the distance of the geographic stade (1/10 of a nautical mile) for latitudes near the equator, was encoded at about 605 statute ft. At the Kolterman Site, the only other site I have seen with an open true North-South Base Line, the distance of the geographic stade (1/10 of a nautical mile in northern latitudes near the poles) is encoded at about 611 statute ft. The Kolterman site is therefore a very special site, indeed. Besides the open North-South Base Line of 100.0 ft., and a distance corresponding to the geographical stade, we might expect other gems of ancient surveying and metrology to have been encoded, as well.

After the training sessions were over, Buck Trawicky (from AES) and I returned to the site on 18 and 19 May to more precisely map the positions of rocks which might be associated with an extended north-south base line. We found that the southernmost prominent boulder at the site (RARS) was precisely on a true north-south line with the northernmost two boulders (RBL1 and RARO) about 700 ft. and 600 ft. to the north, respectively. We knew from other surveys that the ancient New World surveyors could determine true north to an accuracy of about 0.1 deg. In 700 ft., an error of 0.1 deg. will correspond to a distance off line of 1.2 ft. We could easily determine such distances with our refined surveys, which we consider accurate enough to locate the center of a rock to the nearest foot. We also found along this north-south base line (to a reasonable tolerance) boulders (RPQS at 287 ft. from RBL1) and RCR at about 360 ft. south from the remarkable notch in RARO.

The distance between the north end of the base line (RBL1) to an extremely prominent large boulder near the southern end of the mound group rock RBL (also known as the Emerging Bison) was measured at 611 statute ft. (This is the geographical stade near the poles of the earth). Rock RBL is about 4 feet west of the extended true north-south base line. But it was essentially due south of Rock Rhd, which was originally also west from the base line. Rock Rhd appeared to be 16.5 ft. south-west from RCR and about 4 feet west from the extended base line. The distance of 16.5 ft. suggests the surveyor's Rod, which is found at an ancient site at Pequaming, Mich. A clear distance of four rods (66. ft., or the Chain) is also found at a special active site near Timm's Hill in Wisc., along with the Engineer's Station of 100 statute ft. (This is a site visited in recent times by Native Americans, as the Kolterman Site apparently also was.)

Between 19 May and 23 May, when trying to refine our measurements along the base line, I met Herman Bender near rocks RCR and Rhd, with one of his friends. They were engaged in some type of activities on the ground there. Herman had long been working with the rocks at the Kolterman Site, and naturally wanted to know what we were doing. I said that there was an open true North-South Base Line between the two northernmost large boulders at the site (RBL1 and RARO), and that in my mind this made the Kolterman Site one of the most unique effigy mounds anywhere, and that I was trying to refine our surveys on other rocks along this extended base line.

Herman said that I should have come to him because he had measured the position of rocks at the site to the nearest 1/8 of an inch. I said that we did not work to that accuracy, and that we had to finish our work using our own established techniques based on Sunshot observations. But if both of our surveys were correct, the data should match and we could compare results later. He also said that the rocks where they were sitting (RCR and Rhd) were directly south of the northernmost rock (shown as RBL1). I suspected that one was, but that the other (Rhd) was not. But since our work was ongoing, I did not push the issue.

On 23 May, I returned to find that the large boulder Rhd had been dug up and moved about 7 ft. to the southeast. It had been propped up on top of the grass, and its once low upper side (with accompanying moss) was now to the east. It looked like a Buffalo Rock, and was directly on the north-south base line through the site. (The moved boulder, as it stood after 23 May, 2015, is shown as RhdM.) The hole from which it had been taken had been crudely filled in with earth from a nearby borrow area, where one could still see where seven spade-fulls of earth that had been removed. There was also another borrow area from which grass and some wilting weeds had been removed. They had clearly been used to cover the hole from which the boulder had been taken. The once flat boulder (about 10 inches high) was now propped upward about 1.5 to 2 ft high, with the moss side to the east and the newly exposed side to the west. (See Figure 1. It contains sketches I made of the newly moved rock on 23 May. Figure 2 shows sketches of the rock Rhd before it was moved.)

On 25 May, 2015, by chance, I met Jay Mullins at a nearby filling station, and together we surveyed the rock which had been moved (now called RhdM) along with the borrow areas and a few other nearby rocks. See Figure 3.

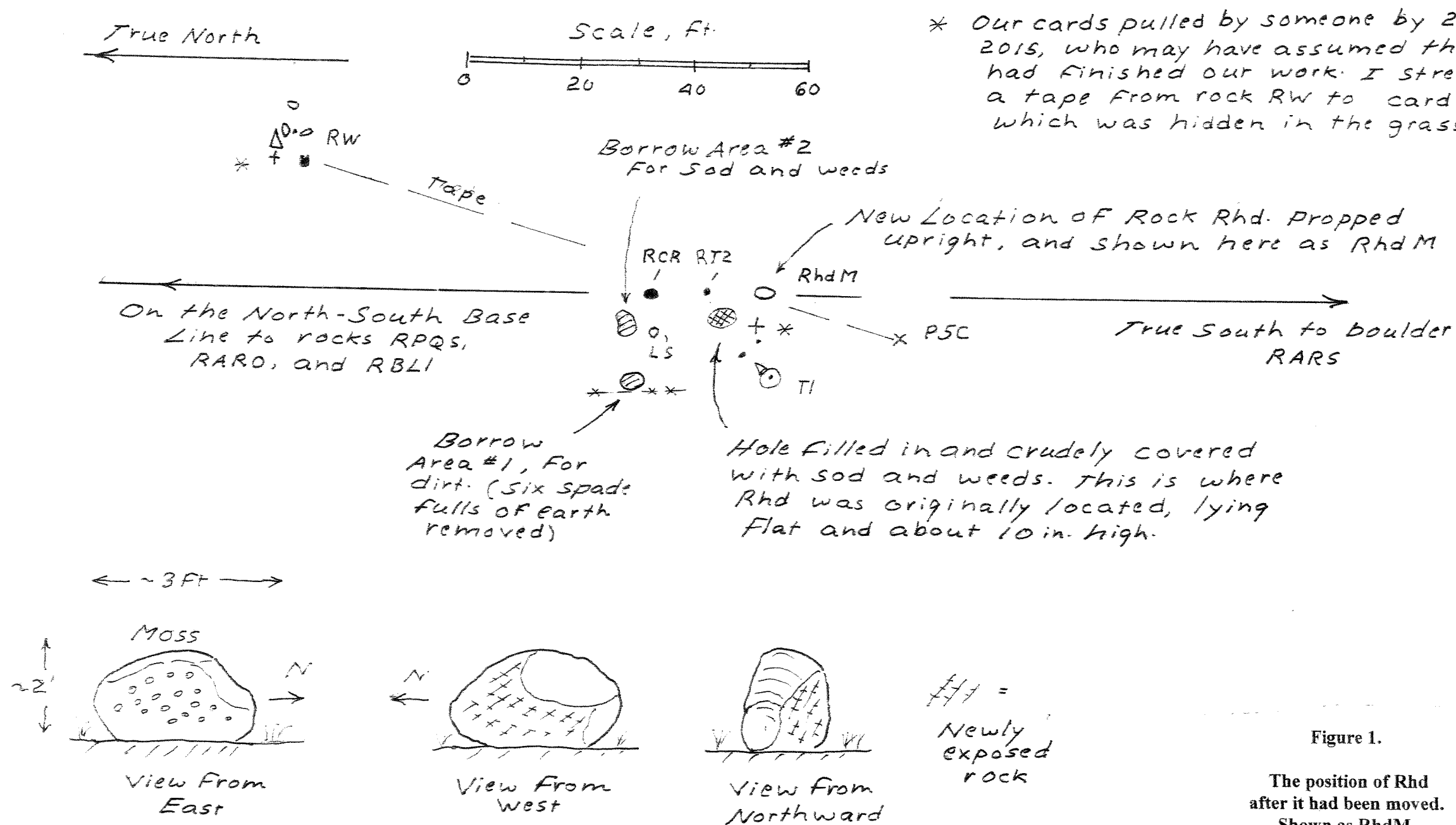
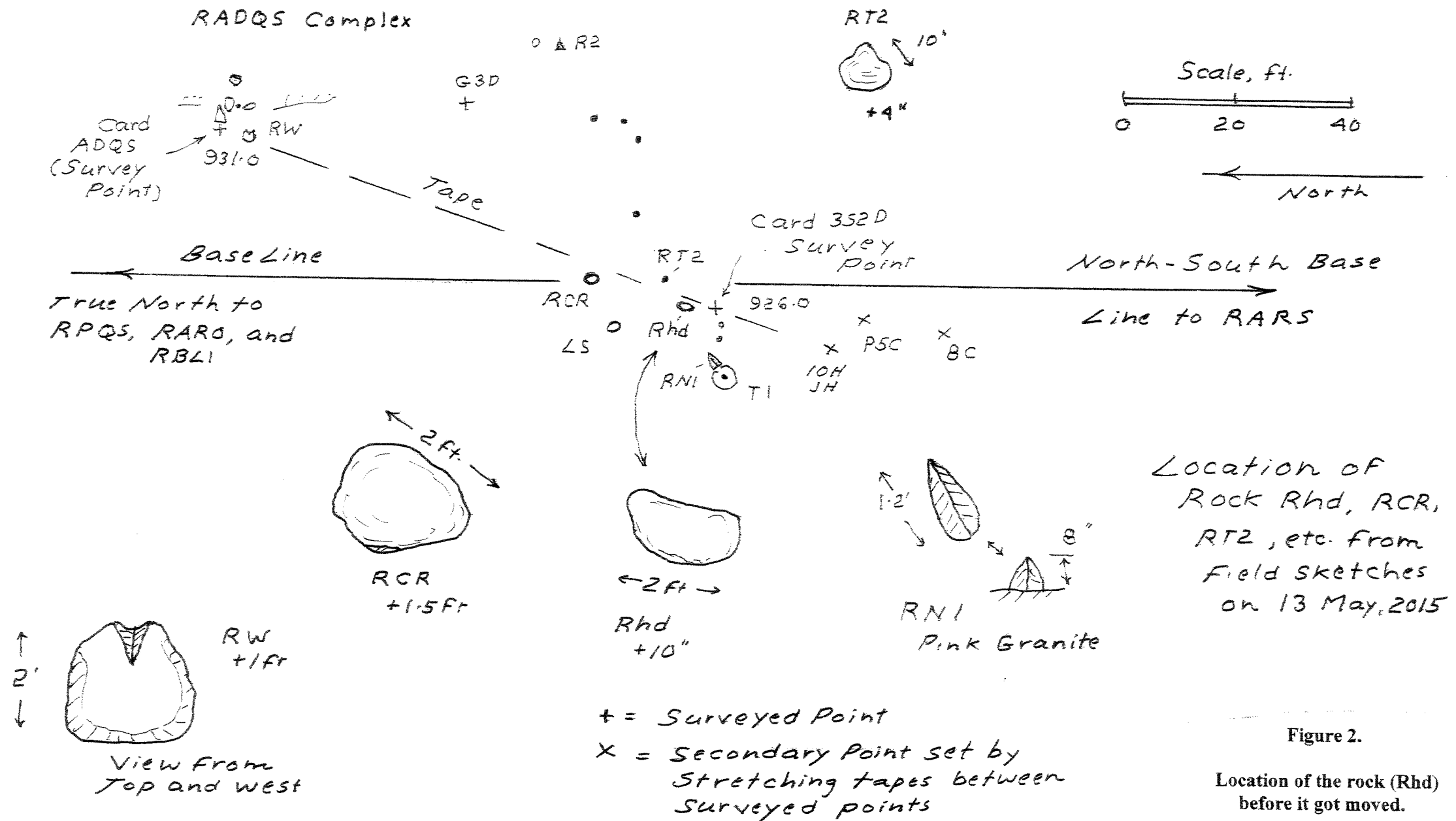
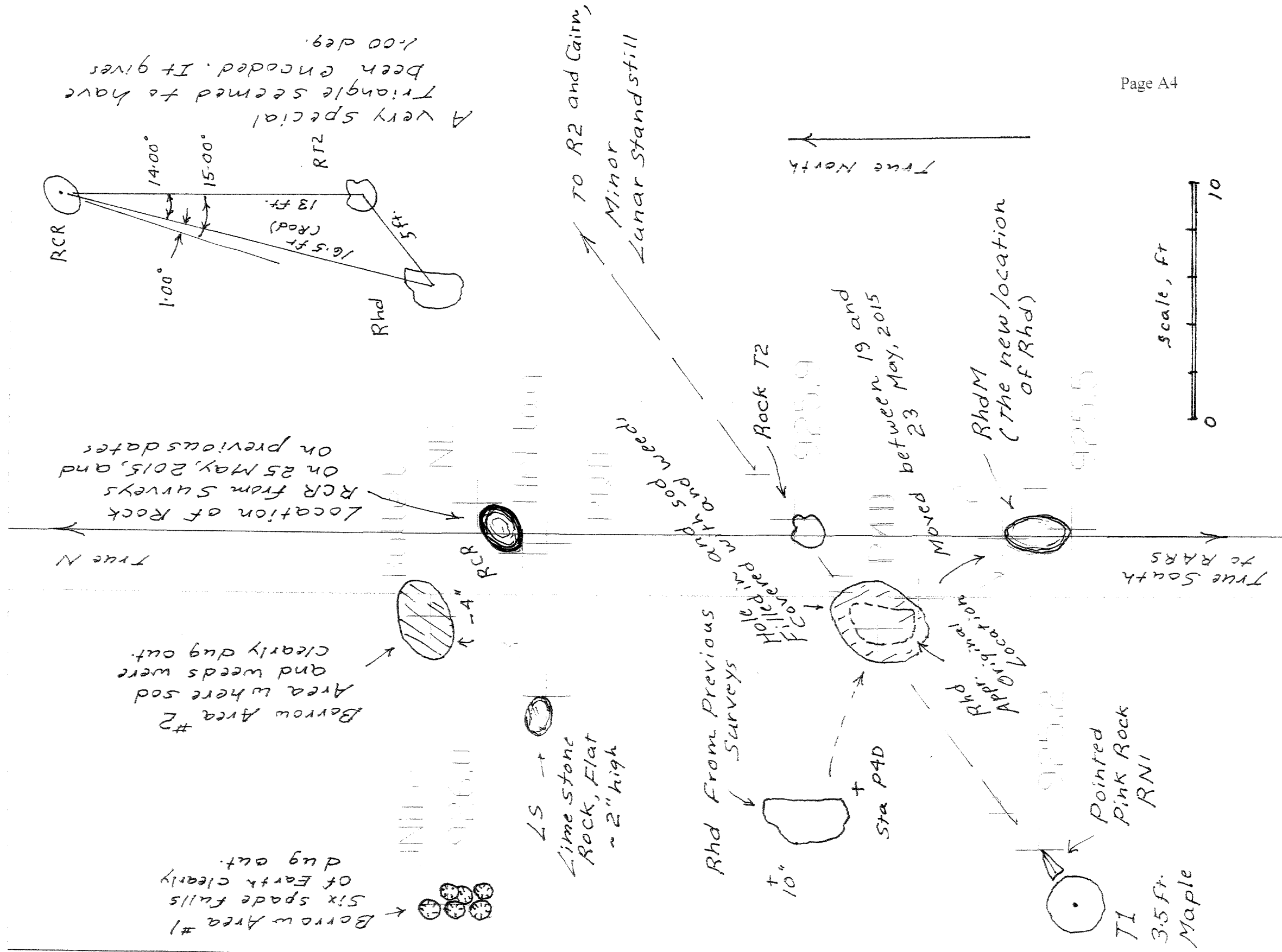


Figure 1.

The position of Rhd after it had been moved.
Shown as RhdM.
Sketches made 23 May, 2015

Rock RhdM on 23 May, 2015
(From Field sketches on 23 May, 2015
by James Scherz)





The Boulder Rhd before it got moved as shown in a Paper by Herman Bender:

(From "Bison Effigy Stones in Wisconsin" by Herman Bender, 2013)

Herman Bender deals at length with some bison-shaped stones at the Kolterman Site. From page 3 of his above mentioned paper, we have: *"Based on prior research and experience, I attributed the form to what are known as Manitou stones, a class of boulders and standing stones documented in the upper Midwest and held sacred by the native inhabitants (Bender 2003). Because they had a sacred quality, conjecture was that many of the boulders with a flat base, now lying prone, had been deliberately tipped by Indians in an attempt to hide their existence from the Christian missionaries."*

Bender is very devoted to what he calls bison shaped effigy rocks. I completely agree that some likely were meant to be. But there are other possible interpretations, as well. What he calls the Bison Effigy rock at RBL1, I also see as a symbol of the crescent moon, with its background still visible (a shape also found at Lizard Mound Park, and other sites). One interpretation does not rule out the other. As in Indian art and in the Mexican codices, different alternate meanings were worked into the ancient art, to imply different levels of understanding to different people. When I was talking to Pamita about crescents in the Indian mounds, he said that any Indian would realize that the symbol of the moon means time (which I had not realized). Based on this clue, a crescent shape in the northernmost large boulder at the Kolterman Site (RBL1) is consistent with a calendar site encoded here, which we did find at the site.

The readers can study for themselves the shape of the rocks we sketched at the Kolterman Site. But I also see shapes (besides bisons) which bring to mind the turtle, heads of bears and wolves, arrows, etc., all of which obviously carry meaning. And these same shapes also appear at other ancient sites, as well. There is also a very special shape I call the Crooked Mountain Symbol. It is a low flat rock with a straight bottom (or base) and a nose or toe (not unlike a shoe). This shape shows up at many special northern sites, where they seem to signal important measurements to be made (usually from the end of the nose, as from an ancient survey marker). They are usually low lying and appear rather flat. Some are as large as 10 feet long and a foot or so high. This is the shape I saw in the rock Rhd before it got dug up, moved and propped upright. Of this category, Bender writes: *"... that many of the boulders with a flat base, now lying prone, had been deliberately tipped by Indians in an attempt to hide their existence from the Christian missionaries."* This may be a belief-- to which everyone is entitled. But a belief is not a proven fact. Nor does it justify a person digging up a flat boulder and propping it upright so it looks like a bison effigy, in accordance with beliefs as to what things were meant to be.

Bender's Figure 43a (p. 50) shows a photo of rock Rhd before it was dug out, moved about 7 feet, and then propped upright (with flat base side down). He writes: Figure 43a is *"a photo of a north-facing bison effigy rock which likely stood on its base, the head at right is partially buried."* A sketch from this photo is shown in my Figure 4.



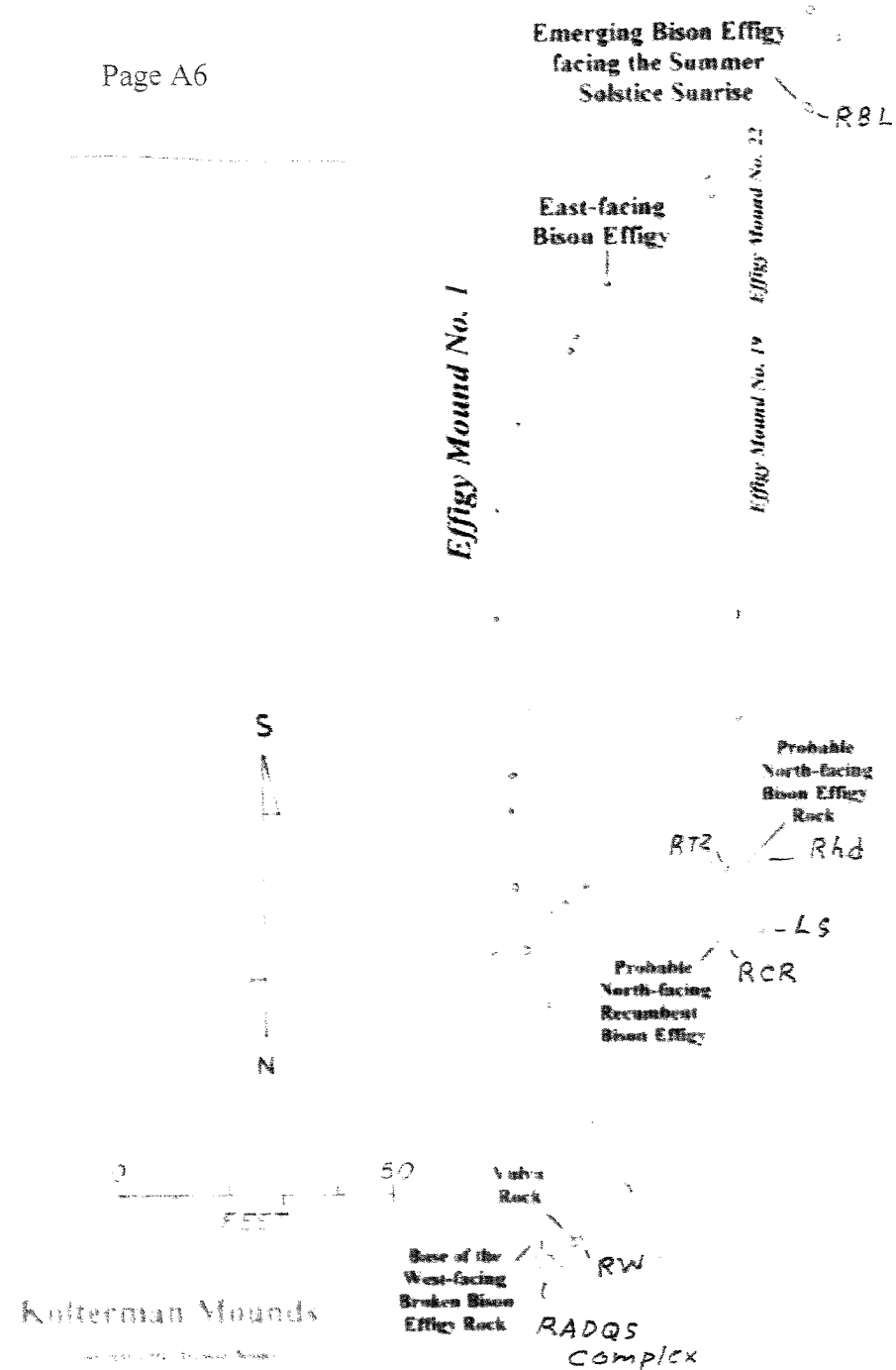
Figure 4. Sketch from Bender's Figure 43a (2013)

Bender's Figures 32, p. 37 and Figure 35, p. 40, show the location of what he calls "Probable North-facing Bison Effigy Rock [our Rhd] and Probable North-facing Recumbent Bison Effigy [our RCR]. These are shown in our Figure 5. From this data alone, one could clearly deduce that the present location of RhdM is not where the Probable North-facing Bison Effigy Rock [Rhd] was once located. It is now directly south of RCR and RT2, as shown in our Figures 1 and 3.

Rock Rhd was apparently moved by someone who thought they had the authority and right to move the rocks around to make them conform to how the ancients wanted them to be.

This is Serious Business:

Whatever the reason that the several hundred pound boulder Rhd got dug up and moved to its new position RhdM, a few days after it must have appeared that we had finished our surveys of the site, it is important that it be proved that people under my supervision did not move it. In the area where people are trying to use the Scientific Method to get at the ancient truths, besides repressing and destroying offensive data, tampering with basic data (cooking the data to make it conform with one's beliefs) is a unforgivable offense. Such actions simply cannot be tolerated in any scientific community.



Bender's Figure 32

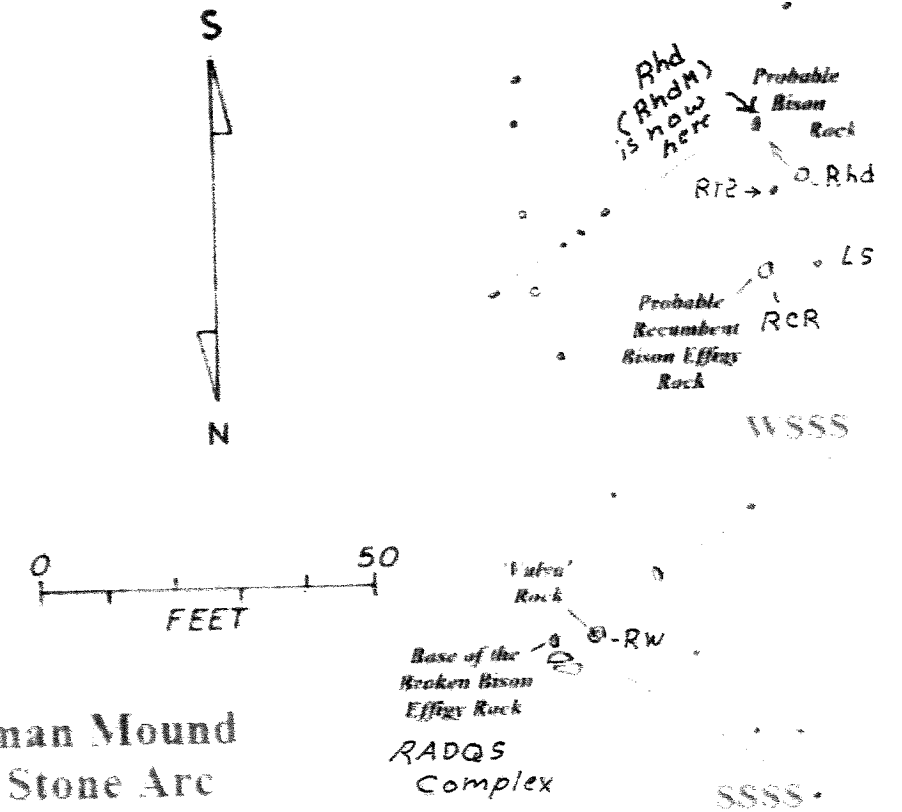


Figure 35. Portion of Fig. 32 map showing the summer solstice sunset (SSSS) and winter solstice sunset (WSSS) alignments of spaced rock which radiate from the base of the buffalo bull effigy base rock (Fig. 33, 34).

From Bender, 2013, p. 40

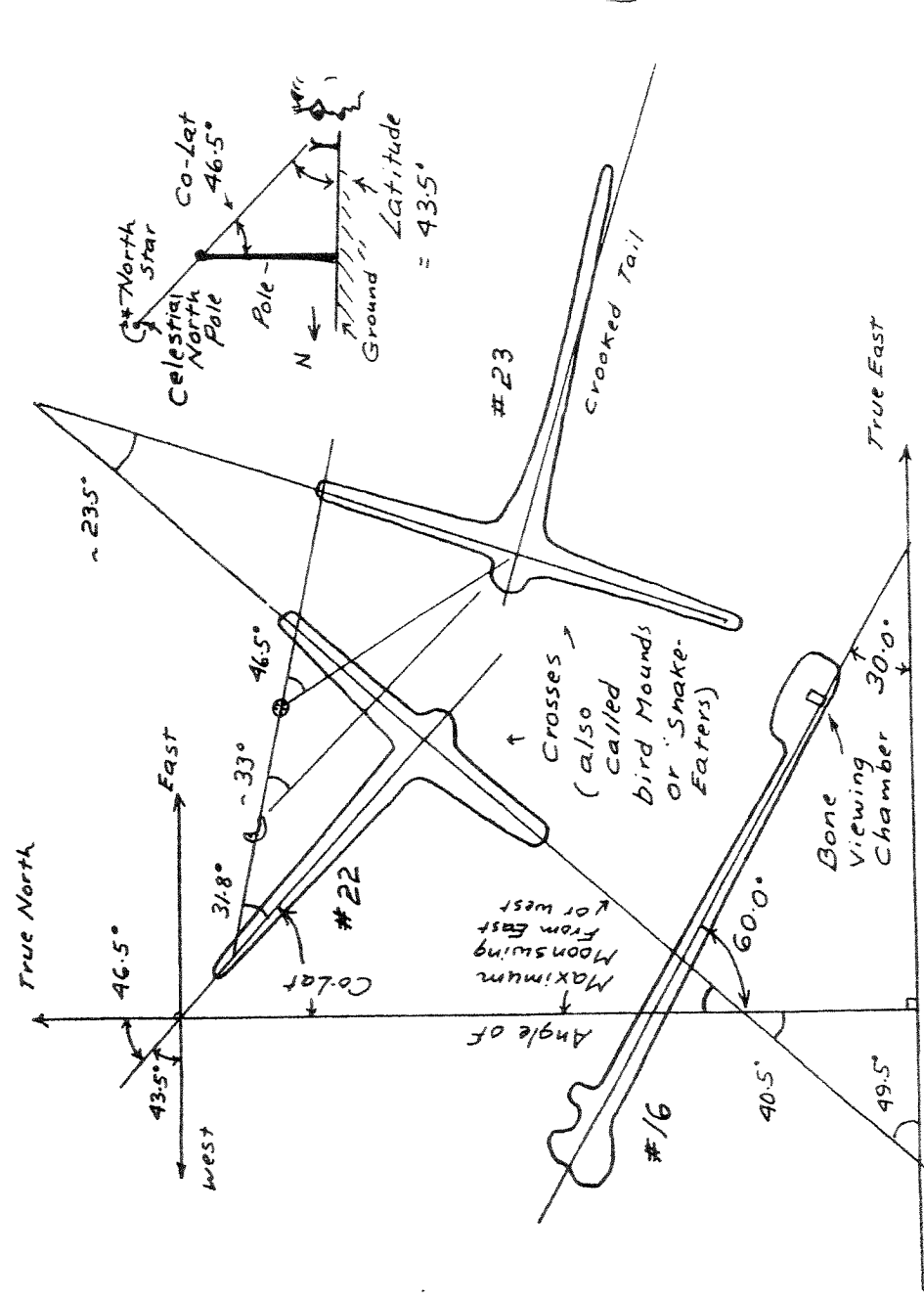
Figure 5. Excerpts from report by Herman Bender, 2013 relating to the original location of Rock Rhd

Note: What are shown as RBL, RT2, Rhd, LS, RCR, RADQS Complex, and RW are my notations added to pages copied from Bender's report.

Reference:

"Bison Effigy Stones in Wisconsin" by Herman Bender, President and Founder of Hanwakan Center for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, Inc., Fond du Lac, Wisconsin, 2013

Annex B. Examples of our Surveys

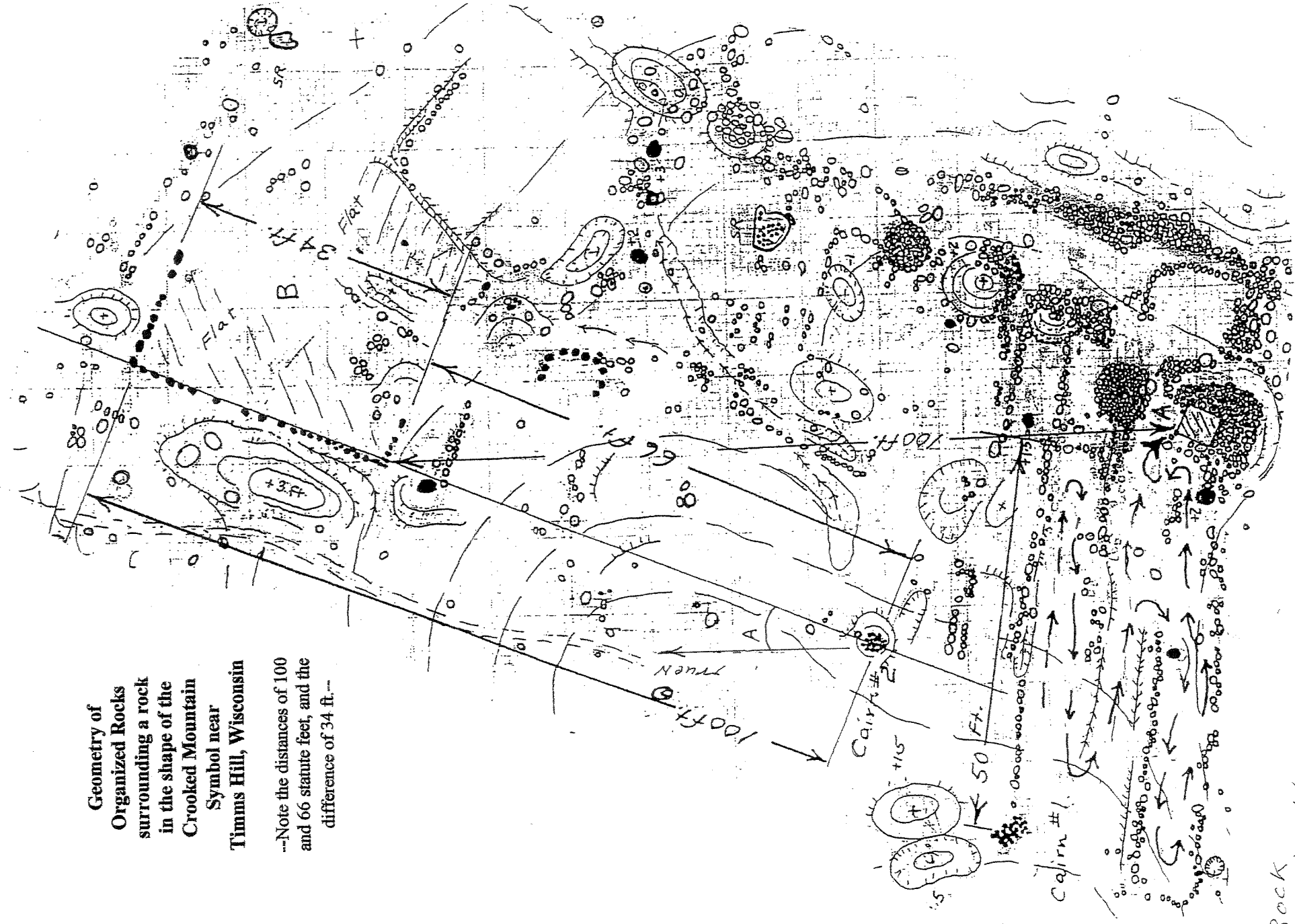


Some interesting geometry in the Northwestern part of the Lizard Mound Group. Such geometry primarily relates to the true cardinal directions defined by projecting the celestial north pole to ground level. Mound #16 makes a 30° - 60° - 90° triangle with the cardinal directions. This is a basic construction 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.

Figure B-1
Some Geometry at Lizard Mound Park,
where we surveyed by using sunshots and the old Stadia Method of getting distances
before the days of laser-based Total Stations.

Besides the solar calendar, which is also at this site, we see other interesting encoded geometry, such as the latitude and co-latitude of the site and the angle corresponding to the declination of the sun on the solstices (about 23.5 deg.). With these angles, we can calculate where the sun will rise or set on the solstices, provided we know the direction of true north-south or east-west lines. (Besides using a pocket calculator for the computations, we can also use a special triangle which we found encoded in the geometry of the mounds, and only rope geometry.) But the all-important true cardinal directions (true north, south, east, or west) are not found in the geometry of this site nor at any other effigy mound group we have surveyed, before we came to the Kolterman Site. Instead, these all-important directions are encoded from key alignments with angles which can be easily and accurately made by ropes. Here we see angles of 30.0 deg. and 60.0 deg.

At other sites further north, the key angles are 45 deg. and 45 deg. bisected. (See Figures B-2 and B-3.) Pamita (trained in the semi-secret Menominee Native Lodges) said that the important geometry was encoded from the non-initiated commoners, even at the time that the mounds were constructed. But he said that the survey priests had left clues which they could use to unlock the useful geometry, clues which the commoners would easily overlook. It was all designed that way.



Geometry of
Organized Rocks
surrounding a rock
in the shape of the
Crooked Mountain
Symbol near
Timms Hill, Wisconsin
--Note the distances of 100
and 66 statute feet, and the
difference of 34 ft.--

Rock
SR is in the
Shape of the Crooked
Mountain Symbol

A = Encoded True North
A = 22.5° = 45.0° bisected,
an angle you can
make with a rope.

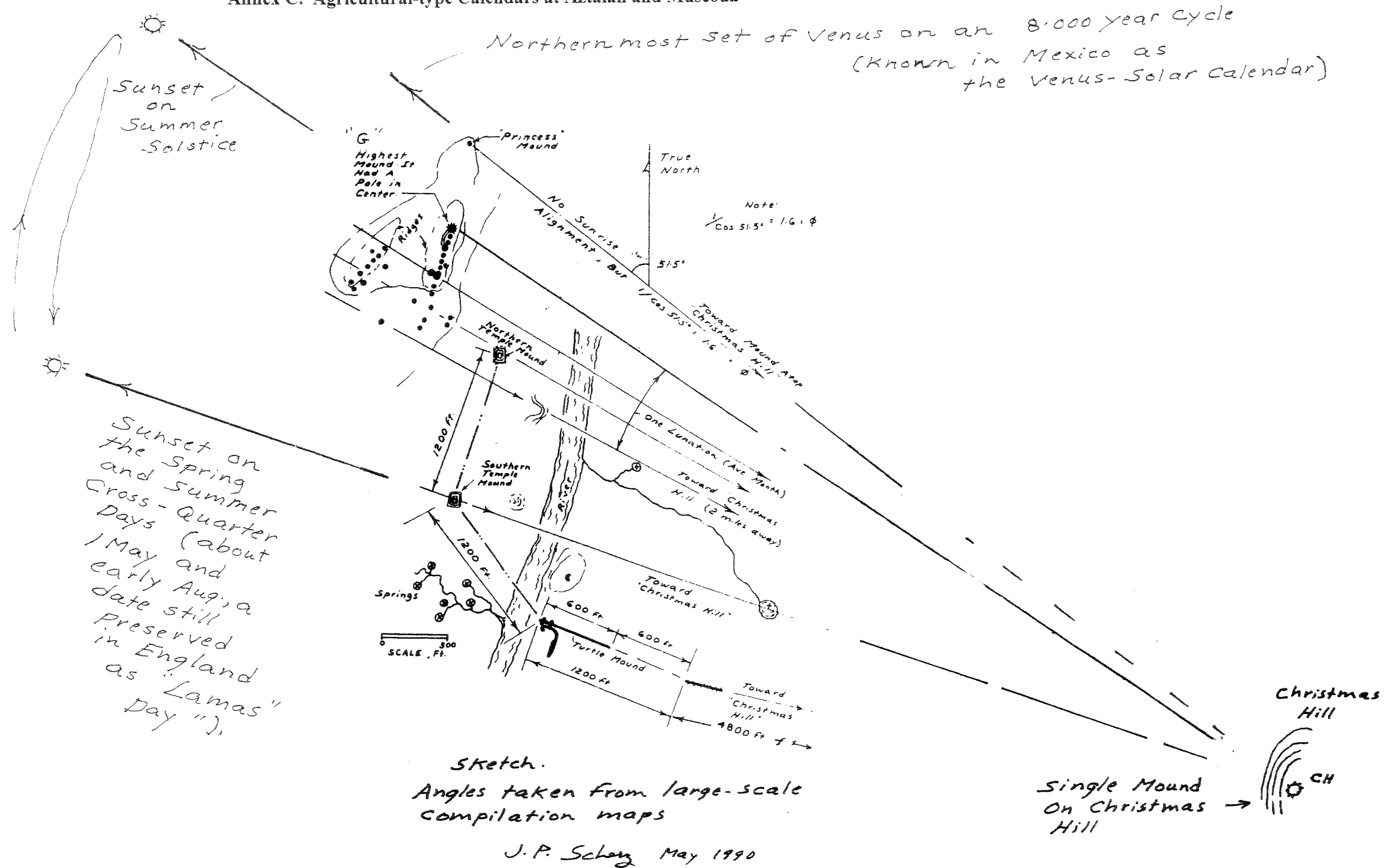
**Units of Distance in layout of rock structures at an ancient site near
Timms Hill, Wisconsin showing the Chain and Engineer's Station
based on the Statute Foot**

The distance of 66 statute feet corresponds to what is called the surveyor's chain. Surveyors who laid out the sections in Wisconsin in the 1800s used the chain of 66 ft. to do so. There are 10 square chains in an acre of land. There are 10 chains in a furlong. And in a statute mile, there are 8 furlongs or 80 chains. The distance of 100 statute feet is known as the engineer's station. The highways that one travels over when driving to Timms Hill before about 1970 were designed and laid out using curves based on the 100 ft. engineer's station. But this is all changing to the meter because those who push for the change say that the meter is superior to the ancient foot because the meter is related to the size of the earth.

Figure B-3.
Example of our surveys on a site of organized rocks

Note that True North is encoded with an angle of 22.5 deg., which is 45 deg., bisected.
Also note the units of measure of 100 statute ft. (the Engineer's Station) and 66 ft. (the Surveyor's Chain), reliable to the nearest foot.

Annex C. Agricultural-type Calendars at Aztalan and Muscoda

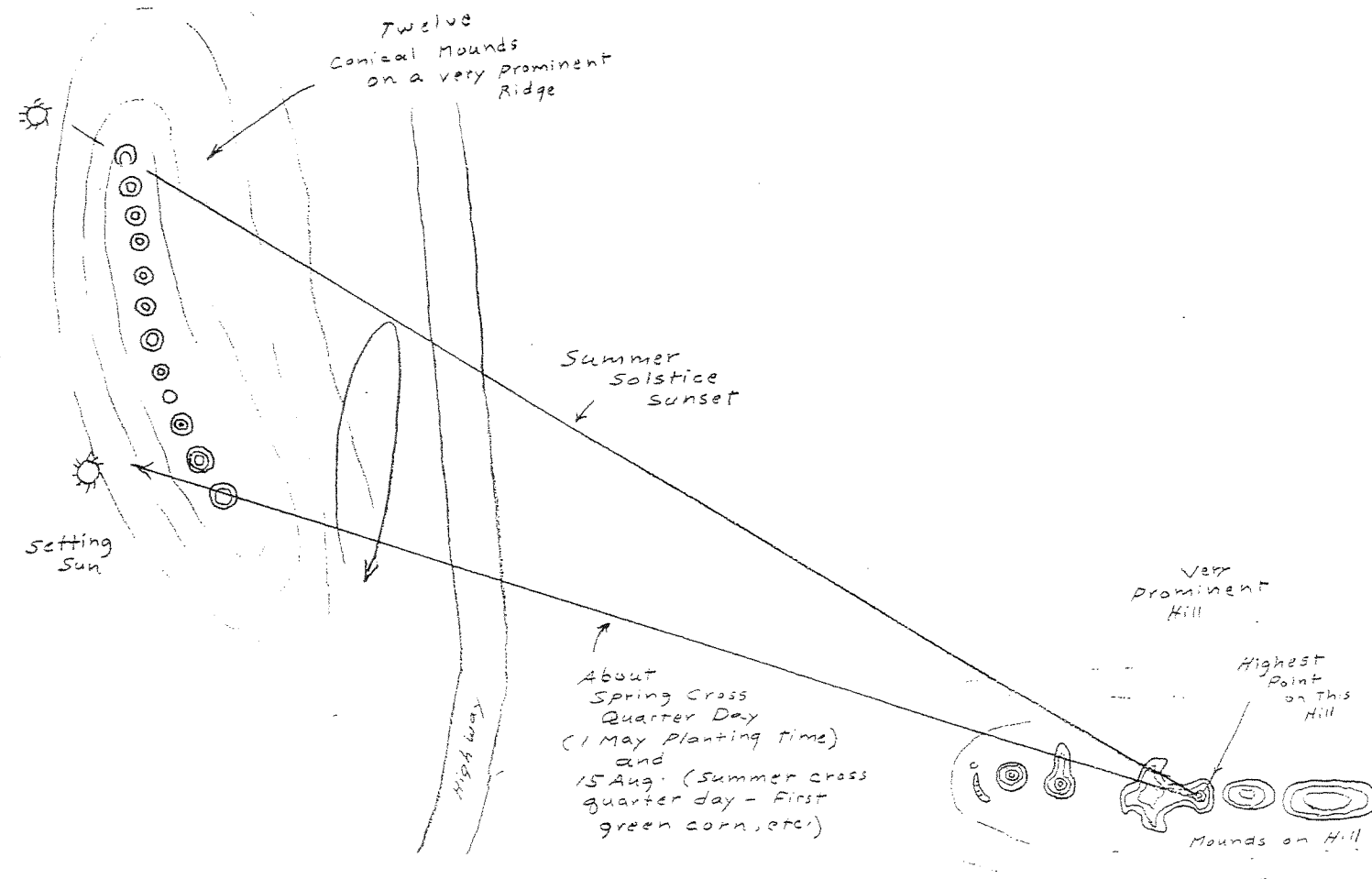


Page C1

Figure C-1. An "Agricultural Calendar" encoded into the geometry of earthen mounds associated with Aztalan Park, in southern Wisconsin

Modified from AES Journal, 1990, page E3.

The same dates of the Spring Cross Quarter Day (time to prepare the fields), to the Summer Solstice (time of maximum plant growth), to the Summer Cross Quarter Day period (time of the First Fruits from the fields) is also found at Frank's Hill near Muscoda, in southern Wisconsin. See Figure C-2.



An apparent solar calendar created by Indian Mounds near Muscoda, Wisc.

--This calendar seems to be associated with agriculture. It functions for the spring cross-quarter day (time to plant) to the summer solstice (time of optimum plant growth) to the summer cross-quarter day (time of first fruits--green corn, etc.)--

Figure C-2. An "Agricultural Calendar" encoded into the geometry of earthen mounds on Frank's Hill near Muscoda in southern Wisconsin

From Scherz, 2009, p. 36

Unlike at Aztalan, where trees now block the view of the setting sun, at Frank's Hill, the setting sun can be clearly observed, and dozens of people do so.