



MINNESOTA

Spring 2024

Volume 32 • Number 2

# SURVEYOR



MINNESOTA  
IT SERVICES  
GEOSPATIAL INFORMATION OFFICE

## Public Land Survey System Monument Grant Requests

### Overview

Discover the significance of the Public Land Survey System (PLSS). Instituted in 1785, this system divides land into townships and simplifying land identification and description.

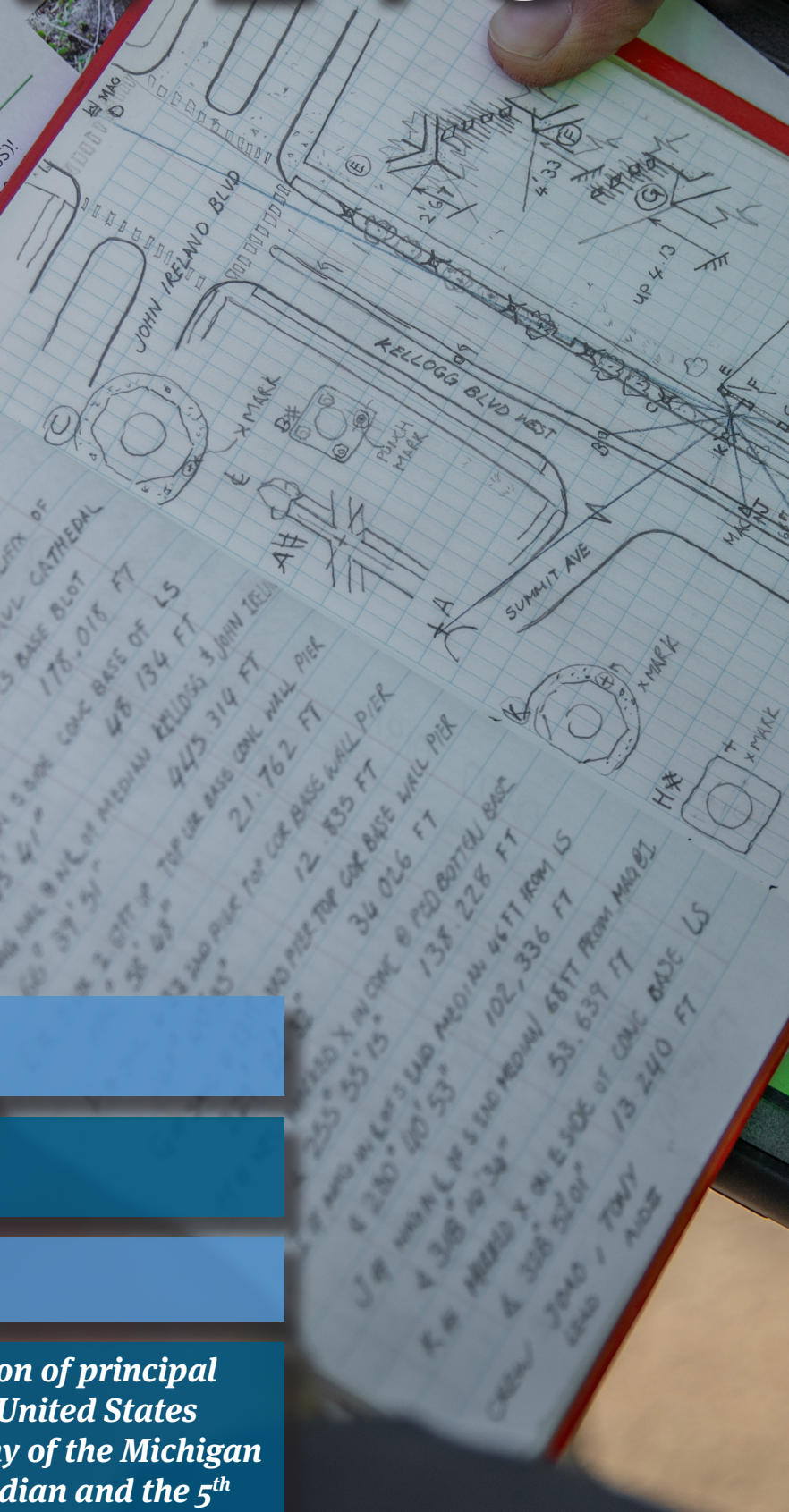
## INSIDE

**7** MSPS Chapter One -  
22nd Annual Trig Star Program

**12** Public Land Survey System  
Monument Grant Requests

**14** Relocation of Lost Corners

**18** Commentary on "The distribution of principal  
meridians and baselines in the United States  
reflects no system." A Geography of the Michigan  
Meridian, the 4<sup>th</sup> Principal Meridian and the 5<sup>th</sup>  
Principal Meridian





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## MINNESOTA SURVEYOR

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# INDEX

From the President.....5

MSPS Chapter One - 22nd Annual Trig Star Program.....7

Public Land Survey System Monument Grant Requests .....12

Relocation of Lost Corners .....14

Commentary on “The distribution of principal meridians and baselines in the United States reflects no system.” A Geography of the Michigan Meridian, the 4<sup>th</sup> Principal Meridian and the 5<sup>th</sup> Principal Meridian .....18

Firm Member Directory .....37

Sustaining Members.....38

Support Future Land Surveyors .....39

## Minnesota Surveyor Upcoming Content Deadlines

Issue	Due Date	Publication Date
Summer 2024	July 1, 2024	July 2024
Fall 2024	October 1, 2024	October 2024
Winter 2024-25	January 1, 2025	January 2025
Spring 2025	April 1, 2025	April 2025



# FROM THE PRESIDENT

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VIRGINIA WINBERG



The Minnesota Society of Professional Surveyors (MSPS) Board of Directors met twice in March, on March 1st at the annual meeting and on March 28th at Elevate's office (in person and virtually). At the annual meeting, the board completed the usual tasks of assigning board liaisons for Chapters and Committees. It also approved a request from Dunwoody's students for financial support for attending the NSPS Student Competition in Arlington, VA in April. The Public Relations Committee will keep membership updated on the competition through our social media channels leading up to and during the competition. The participating students will write an article describing their experience.

The second board meeting was productive, reviewing chapter status and committee goals. The common theme in the chapter reports is that attendance at chapter meetings is low across the state. The Board decided that it needed more information from MSPS members about the reasons for attending/not attending chapter meetings, which can be a good source of information for what is happening in the survey world at the national, state, and local levels. Such meetings are great social events. We have a unique professional community and I wonder why so few of us participate in it?

Committee goals. The Board spent considerable time reviewing each committee's objectives. If there is something about surveying that you are super passionate about, now is the time to join a committee.

**Events.** This committee plans the annual, spring, and winter meetings. The Board asked the committee to consider planning a "giving back" activity during the next annual meeting in Bemidji, MN, a DEI session topic, and a CFedS session topic. The committee is also looking for a new chairperson.

**Government.** The Board had to limit the number of ideas for the committee to consider as goals for the year. The number one focus is to continue the funding PLSS remonumentation effort. Other topics discussed included the AELSLAGID board bill and the existing statutory requirements regarding Mylar.

**Membership.** From year-to-year MSPS membership numbers ebb and flow, but the overall trend is a slow decrease which relates to our aging population. The Board feels we could have higher membership numbers and we asked this committee to explore how we might increase these numbers. For example, MSPS only has 18 Firm Members, which support the work our committees can do on behalf of membership.

**Board Development.** The goals are always the same, nominations for directors and officers, which is simple in theory but difficult to accomplish. The opportunity to serve the members of the surveying profession will provide you with experiences you can't necessarily get in your career, and perhaps, may help you. I encourage you to chat with the committee, or a current/former board member and learn more about it. In-person attendance is not required for board meetings, although it can be more fun. So, if you live some distance from Eden Prairie, MN, and want to be on the Board, on-line attendance is an option!

**Public Relations.** The committee is continuing working on their goal of hosting the land survey summer camp this July. This is our first response to the Board assigning the committee the goal of workforce development last year. If you missed the informational webinar on the topic, another link to the recording will be provided soon. The committee will continue to keep membership updated and asks for your help. The committee is also starting to update the MSPS branding and website, creating content for social

## FROM THE PRESIDENT

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media and populating and promoting the volunteer/calendar pages. The committee asks all other MSPS committees and MSPS chapters to review the website and provide feedback on changes. Feel free to contact a board member or send an email to [info@mnsurveyor.com](mailto:info@mnsurveyor.com).

**Journal.** The committee will be working on article content, specifically, a list of topics we would like to see in the magazine. Do you have an exciting or complex survey you've completed? Is there a technology you would like to see described? Let us know what you want to read! As part of the website update, the committee would like to index all issues of the magazine to make its content more accessible.

**Trig Star.** We have a couple of chapters which regularly host a trig star event. The Board would like to see more of these events throughout the state. Let us know if you'd like more information about how to get started in your community.

**Budget.** As the Board conversed about goals for committees it realized there may be a need for allocating more money to each the committees.

**Awards.** A new task for the committee will be to prepare an "in memoriam" observation during the annual meeting of members who have passed away.

**Historical.** The committee would like to spruce up the monument at the initial point of the Fifth Principal Meridian by recognizing the 6 states whose surveys depend on this point, Minnesota included. The committee would also like to add more land survey content signage at the park.

**Young Professionals.** This committee will continue to work through the efforts of Chapter 7.

**Education.** We've seen survey education programs in the State struggle over the years. The Board would like to help these programs thrive and asks MSPS members for help in understanding the current situation. The Board would also like to see the mentorship program grow.

**DEI.** The committee will be working on session content that coincides with their mission and objectives for the annual meeting.

The Board will be meeting April 25, June 27, July 25, September 26, and November 21. If you have a concern or topic you would like addressed by the Board, please let a Board member know, or send a message to [info@mnsurveyor.com](mailto:info@mnsurveyor.com). prior to a meeting. Better yet, present the topic yourself in person or virtually.

Whew! Did you catch all that? March was also a busy month for surveyors celebrating National Surveyors Week. I thoroughly enjoyed seeing surveyors across the country post about their activities on LinkedIn, Facebook, and Instagram. In Minnesota, Phil Raines brought legislators to the History Center, a short walk from the capital building, for a "Meet Me At The Corner" event during surveyors' week. Check out our post about the event on our social media.



# MSPS CHAPTER ONE - 22ND ANNUAL TRIG STAR PROGRAM

*JANELE FOWLDS, MSPS CHAPTER ONE*

On Friday, March 8, 2024 on the South Central College Mankato Campus, MSPS Chapter One, sponsored another successful Trig Star program, an annual competition that recognizes the best students of trigonometry from high schools in Minnesota! The program consisted of a 1-hour written exam, followed by small group presentations on land surveying and an awards ceremony. One hundred thirty students from five different high schools took part in the event; Fairmont High School, Lake Crystal Wellcome Memorial High School, Mankato West High School, Nicollet High School, and Maple River High School.

All participating Students received a Certificate of Participation, a mechanical pencil, and a 2024 Trig Star T-shirt.



Students Taking the Exam & Attending Survey Learning Sessions



# MSPS CHAPTER ONE - 22ND ANNUAL TRIG STAR PROGRAM

MSPS sponsors the traveling trophy awarded to the school with the highest cumulative score of the top ten finishers from each school. The schools that attended Chapter Ones’ competition ranked as follows:

1st Place	Mankato West High School
2nd Place	Fairmont High School

## MANKATO WEST HIGH SCHOOL - TOP 10 CUMULATIVE SCORE



Students during break and our volunteers grading the exams



The school with the top overall average score was given the STAR trophy sponsored by Chapter One.

1st Place	Fairmont High School
2nd Place	Mankato West High School

**FAIRMONT HIGH SCHOOL -TOP OVERALL AVERAGE SCORE**



The overall top five placed students received a total of \$400 in cash prizes; the top three places will also be given an engraved plaque to be presented at their individual high school awards night. The teachers of the top two overall place winners were each awarded \$50.

# MSPS CHAPTER ONE - 22ND ANNUAL TRIG STAR PROGRAM

## TOP FIVE OVERALL INDIVIDUAL WINNERS



From r-l

1st Place	Samuel Grogin, Fairmont High School
2nd Place	Kennedy Becker, Fairmont High School
3rd Place	Ella Olson, Mankato West High School
4th Place	Abigail Harpestad, Mankato West High School
5th Place	John Voracek, Mankato West High School



1st & 2nd Place Students with Teacher Jerry Brooks



We acknowledge and thank sponsors listed below, with whom we raised \$2,800 for the 2024 Trig Star event.



Autographed by Participating Students

We would also like to thank all of the students and their teachers for participating in the 2024 Trig Star program. We hope to see everybody at the 2025 Trig Star program set for Friday, March 14, 2025!

# Public Land Survey System Monument Grant Requests

## Overview

Discover the significance of the Public Land Survey System (PLSS)! Instituted in 1785, this system divides land into townships and sections, simplifying land identification and descriptions, and enabling efficient land management and real estate transactions. PLSS monumentation involves physically marking important PLSS locations, such as corners of a section or township, with markers called monuments.

In Minnesota, where PLSS surveys were pivotal for early settlement and development, neglect threatens the integrity of these historic markers. But change is underway.

Thanks to critical legislation passed last year, Minnesota is investing \$9.7 million in the Monument Grant Program, empowering counties to preserve and update PLSS records and monuments. This initiative ensures that our state's property infrastructure endures.

The impact? Immense! By maintaining the PLSS, certainty and stability of land boundaries will be provided. A stable PLSS will support infrastructure development, land management, and environmental stewardship.

The PLSS isn't just history—it's our foundation. Join us in preserving this vital system, securing Minnesota's legacy for future generations.

Find more information on the [Preserving the Public Land Survey System](#) webpage.



Brass-capped aluminum pipe monument (front) compared to previous wood post monument (back).

## Initiated Requests for Funding

The PLSS Monument Grant Request for Proposal (RFP), launched on February 1, 2024, closes on April 5 for full applications. Prior to this, applicants were required to submit a letter of intent by February 22. This step aimed to assess county interest and the demand for PLSS work and funding.

Grants range from \$50,000 to \$300,000, and counties can submit multiple requests. This document shares a summary of the estimated scope of proposals based on received letters of intent. The available grant funds of \$9.1 million (after administrative costs) will not meet the anticipated requests of over \$16 million.

**The response indicates significant interest and need for PLSS preservation funding, signaling that current one-time funding falls short of demand.**

## Funding requests reflect current challenges:

- Rural counties have conflicting characteristics of vast area and significant public lands vs. limited tax base and low population.
- The overwhelming backlog of PLSS remonumentation in most counties poses a daunting financial burden.
- Even counties equipped with survey programs struggle due to funding and staff shortages for PLSS remonumentation.
- Inflation and labor shortages in Minnesota exacerbate financial strains on counties.
- County recorder funds often fall short or are depleted, rendering them inadequate for PLSS remonumentation.
- Current PLSS preservation heavily relies on private surveyors providing services to private landowners or county projects.





**65 Counties**  
responded to the  
RFP with a letter  
of intent.



**70 Applications**  
have been initiated for  
funding requests.

Corners to be  
Remonumented

**13,503**

Total

**193**

Average

Survey Records  
to be Updated

**57,332**

Total

**819**

Average

Anticipated  
Requests

**\$16,168,454**

Total

**\$230,978**

Average

Years to Complete  
Remonumentation

**0-100**

Total

**20**

Average

Annual Funding Needed  
to Remonument

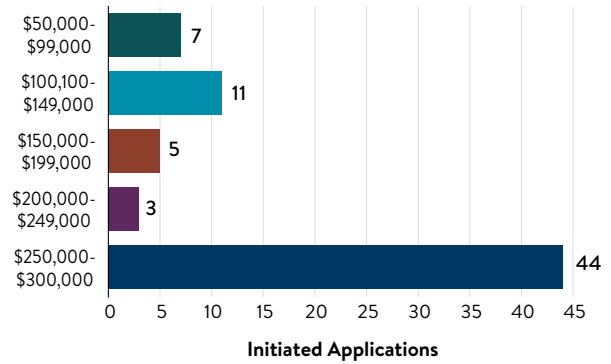
**\$13,500,000**

Total

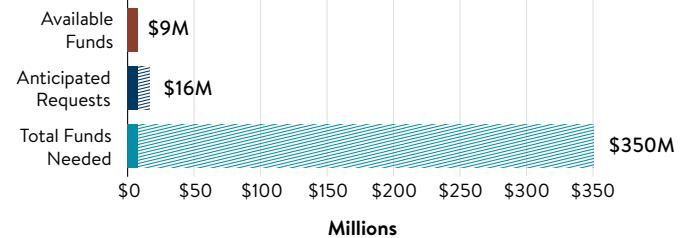
**\$210,000**

Average

### Anticipated PLSS Monument Grant Requests



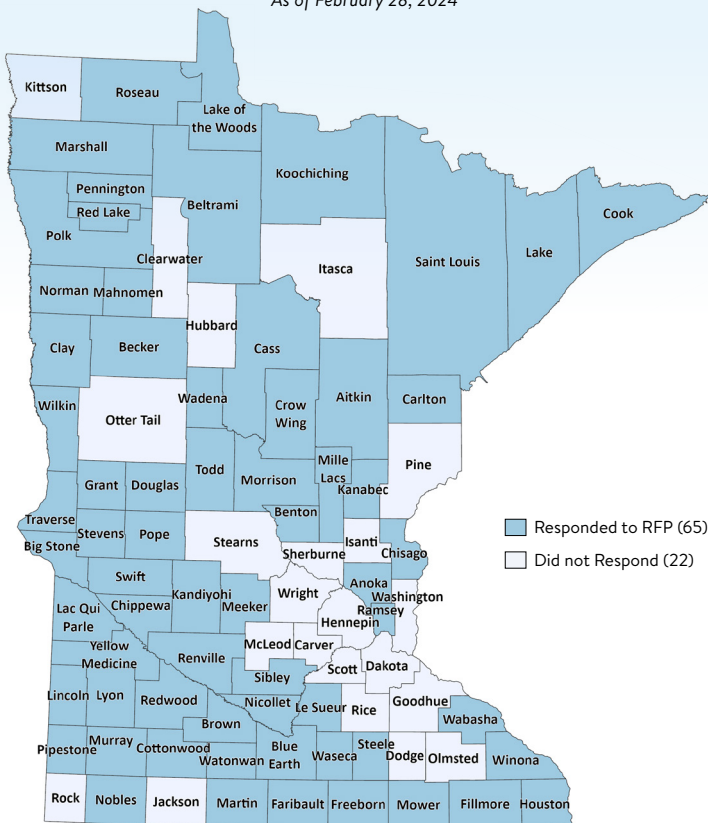
### Current vs. Long-Term Funding Needs



The 65 responding counties indicated that it would take an average of **20 years** (up to 100) to complete all remonumentation needs of the applicants, totaling \$270 million. This is in alignment with the Minnesota Association of County Surveyors estimate that it would take **\$350 million** to complete remonumentation statewide, preserving more than 162,000 monuments.

## Counties Responding to the PLSS Monument Grant RFP

As of February 28, 2024



## Next Steps

- Counties will complete the full grant applications due April 5, 2024.
- The Geospatial Advisory Council (GAC) PLSS Preservation Committee, a cross-sector team, will evaluate applications prioritizing criteria defined in the legislation.
- Selected grantees will be announced April 30, 2024.
- Workplans will be approved, and grant projects will begin May 2024.
- Project work, evaluation, and final reimbursements are to be completed by March 31, 2026.

Questions about the PLSS grants? Contact MnGeo at [gisinfo.mngeo@state.mn.us](mailto:gisinfo.mngeo@state.mn.us)

# RELOCATION OF LOST CORNERS

JOHN FREEMYER, FORMER CARVER COUNTY SURVEYOR, PAST PRESIDENT MSPS

## Author's Note

In 1913, Francis Hodgman, a Michigan surveyor, published “A Manual of Land Surveying....” (Fig. 1) One chapter dealt with “Relocation of Lost Corners” of the Public Land Surveys. Below are some literal excerpts of that chapter, which are just as applicable today as they were 110 years ago, with some commentary in the form of endnotes.

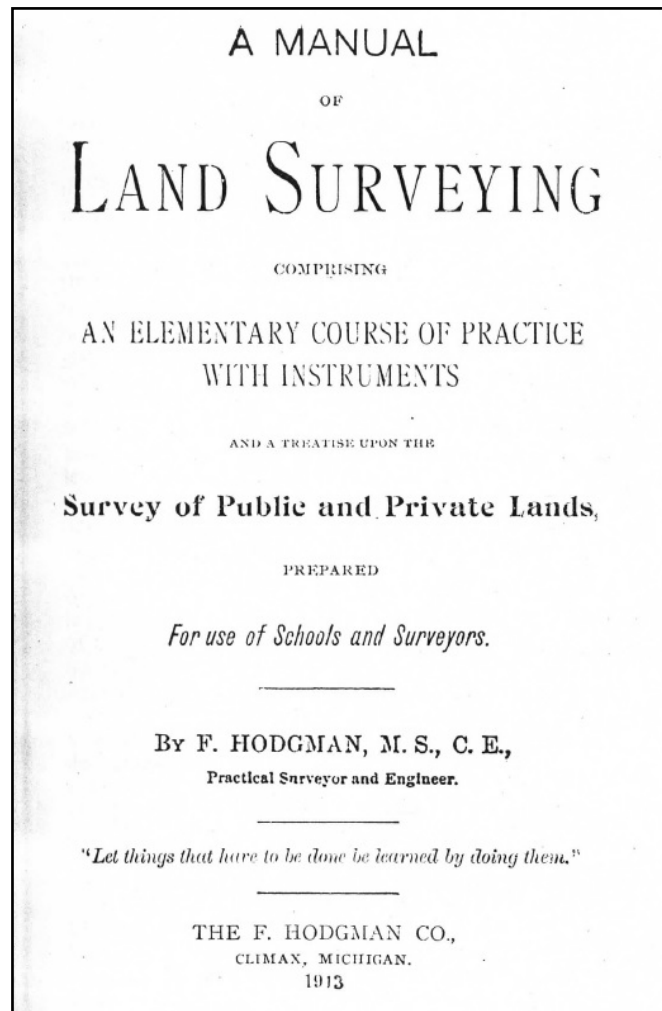


Figure 1. Title Page of “A Manual of Land Surveying.”

“Most of the difficulties which the surveyor has to contend with in restoring lost corners arise from errors made in the original survey, or in the field notes thereof.<sup>1</sup> He should bear in mind that errors in the original survey cannot be corrected.<sup>2</sup> In any case of a lost corner, find as many of the adjacent corners of the original survey as possible, according to the best evidence that can be had to prove their exact location. (D)on't give up a corner as lost while any means of finding its exact location are left untried. There is great virtue in a pick and shovel intelligently applied to the finding of the corner posts or monuments. (I)t is very difficult, if not impossible, in many cases, to relocate a lost corner in the exact position it originally occupied, by surveys from distant corners.”<sup>3</sup>



“It often happens that one surveyor will fail utterly in finding the marks of an origin corner, while another, more apt in discovering the evidence, will strike upon it readily. (T)he best possible evidence of the location of an original corner is the monument fixed at the corner when the survey was made.<sup>4</sup> After this come witness trees, fences, distant corners of the same survey, and the testimony of persons. All these latter kinds of evidence only go to corroborate the first, and may take the place of the first only so far as they may - - have weight in any particular case.”

“Many of the corners of the United States survey were marked by planting a post or stake in the ground. Some of the posts have been entirely destroyed, but the bottoms of a great many of them still remain, much decayed, but plainly visible when the surface of earth is removed.”

“To find them careful manipulation is required. The surveyor first determines as nearly as he (or she) can, from extrinsic evidence, the point where the corner post should be looked for. (T)hen, with a shovel, spade or hoe, carefully remove the surface earth, a little at a time being particular not to strike deep at first into the earth at the level as it was when the stake was set. The best and sometimes the sole evidence of a corner has often been destroyed by a person striking deep into the ground, expecting to find a sound stake, and casting away the decayed wood and filling up the hole of a rotten one without observing it.”

“These decayed stakes may be best observed in the light-colored subsoil after the black surface - has been removed. (R)otten wood discolours the (subsoil) – where it has not been disturbed. In the black muck of our marshes and river bottoms it is more difficult to distinguish the stake near the surface, but as the ground is soft and wet, stakes were driven deep and we may sometimes find the bottom of the stake - - perfectly preserved...When the stakes are constantly wet, they do not decay.”

“Next we consider the bearing or witness trees. These are marked and their direction and distances noted,<sup>5</sup> in order to assist in finding the corner posts set on the survey. These bearing trees are marked with a blaze and a notch near the ground on the side facing the corner. (M)ost of the living witness trees have grown to such an extent that only a scar remains in sight, to indicate the point where the notch was cut. To get at the notch, the superincumbent wood – will have to be cut away. It will not often be necessary to do this, as we can come sufficiently near the correct point to find the stake without it. (I)f the stake has been destroyed - - we shall need to be exact, and measure from the notch.<sup>6</sup> If the tree has been cut down, and a sound stump remains, the marks will be easily exposed. At others the stump is gone, but a dish-like cavity remains in the earth to show where the tree once stood. In looking for a corner post, we may frequently assume for the time being that a certain stump or a cavity where a tree had stood was - - the place occupied by a bearing tree. If we then measure the required direction and distance, and find a stake,<sup>7</sup> we may reasonably conclude that our assumption was correct. Such assumptions are frequently of great assistance in finding corners.”

“(N)ext consider fences in their relations to corners. Whether any particular fence may be depended on to indicate the true line<sup>8</sup> will depend on the particular circumstances attending that case. In a general – way, a fence will indicate to the surveyor where to begin looking for his corner.<sup>9</sup> But the practice has been – for settlers on a section to clear and fence beyond the line in order to have a clear place on which to set their permanent fence when they get ready to build it. Afterward they forget where the line is and set the new fence where the old one stood. Many fences, too, were set without any survey or any accurate knowledge where the line was and there to await a convenient time to have the line established. (W)here the land has been long settled and occupied, it is a common custom for adjoining land owners by consent to set the fence on one side of the true line, there to remain until they are ready to rebuild. The original parties frequently sell out or die, and the new owners have no knowledge of the agreement and suppose the fence

# RELOCATION OF LOST CORNERS

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is to be on the true line. For those reasons, fences should be looked on with suspicion, unless corroborated by other evidence. (Fences) may be the best evidence, or – may be utterly worthless.”

“Lastly, I consider the evidence of living persons. (T)here is a vast deal of difference among them with regard to their habits of observation and their ability to determine localities. Some have an exceedingly acute sense of locality - -, while others seem to have little to no capacity of that sort. (T)he surveyor in receiving this testimony should ascertain as far as possible what are the habits of accurate observation and the memory of localities possessed by the person testifying, in order to know how much weight to give (the) testimony.”

## Editor’s Note

I was unable to find a digital copy of the book described here but there are several earlier versions. An interesting study would be to see if there are any differences between them.

Bellows, C.F.R. and Hodgman, F. [A manual of land surveying: comprising an elementary course of practice with instruments and a treatise upon the survey of public and private lands, prepared for use of schools and surveyors](#) (Register Printing and Publishers House, Ann Arbor, 1886). Seemingly, the third edition of this book, published in 1888, was described by Francois “Bud” Uzes as “an excellent work on the rules and guidelines for conducting surveys of government public lands.” A [fifth edition](#), revised by F. Hodgman, was published in 1891.

Hodgman, F. [A manual of land surveying comprising an elementary course of practice with instruments, and a treatise upon the survey of public and private lands, prepared for use of schools and surveyors. \(Climax, Mich., 1895\).](#)

Hodgman, Francis. [A manual of land surveying, comprising an elementary course of practice with instruments and a treatise upon the survey of public and private lands, prepared for the use of schools and surveyors.](#) F. Hodgman, Climax, Michigan. 1897)

Hodgman, F. [A Manual of Land Surveying comprising An Elementary Course of Practice with Instruments and a Treatise upon the Survey of Public and Private Lands, prepared for use of Schools and Surveyors,](#) (The F. Hodgman Co. Climax, MI, 1903). Uzes stated “This follows very closely the format of the treatise that Hodgman published jointly with C.F.R. Bellows. It was one of the principle reference books dealing with retracing boundaries of former public lands subdivisions.”

Hodgman, F. [A Manual of Land Surveying, Comprising an Elementary Course of Practice with Instruments and a Treatise upon the Survey of Public and Private Lands](#) (The F. Hodgman Co., 1907)

Hodgman, F. A Manual of Land Surveying, Comprising an Elementary Course of Practice with Instruments and a Treatise upon the Survey of Public and Private Lands, Prepared for Use of Schools and Surveyors (The F. Hodgman Co., Climax, MI, 1913)

## Endnotes

<sup>1</sup> Differences with distances in the government field notes or plats with those distances measured on the ground should not normally be considered an error.

<sup>2</sup> [43 USC 752](#) “Boundaries and contents of public lands; how ascertained.”



<sup>3</sup> Reference to “Lost Method” of corner restoration as defined by Bureau of Land Management

<sup>4</sup> [43 USC 752](#)

<sup>5</sup> Directions and distances to bearing trees are noted in the government field notes, typically along with the tree size and type.

<sup>6</sup> There are other alternatives to cutting into a live tree and possibly damaging the tree.

<sup>7</sup> Or other evidence where a corner post once stood.

<sup>8</sup> The “true line” the author is referring to is section lines and quarter lines.

<sup>9</sup> Corner set during the original government surveys.

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# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

---

ROD SQUIRES, *EMERITUS, UNIVERSITY OF MINNESOTA*

## Introduction

In her widely read and highly-praised book, “Order Upon the Land,” Hildegard Binder Johnson stated, “the distribution of principal meridians and baselines in the United States reflects no system but is the result of historical and geographical forces, such as settlement before the survey, westward migration along certain routes, and the cessions of Indian lands.”<sup>1</sup> But the historical and geographical forces, such as those she described, created the necessity for the General Land Office, the federal government real estate agency, to establish meridians and baselines that not only controlled the public land surveying operations and the location of townships created by those operations but allowed operations to be carried out simultaneously in widely separated areas.<sup>2</sup> This article describes the origins of three principal meridians, made necessary by an act of Congress that gave land to military veterans and includes glimpses of the nature of the public surveying operations circa 1815-1820.

## The Legislation

On May 6, 1812, before hostilities between the United States and the United Kingdom officially broke out, the U. S. Congress enacted “An Act: To provide for designating, surveying, and granting the military bounty lands,” authorizing the President,

to cause to be surveyed a quantity of the public lands of the United States, fit for cultivation, apart for satisfying military not otherwise appropriated, and to which the Indian title is extinguished, bounty claims not exceeding in the whole six millions of acres, two millions to be surveyed in the territory of Michigan, two millions in the Illinois territory north of the Illinois river, and two millions in the territory of Louisiana, between the river St. Francis and the river Arkansas; the said lands to be divided into townships, and subdivided into sections and quarter sections, (each quarter section to contain, as near as possible, one hundred and sixty acres,) in the manner prescribed by law for surveying and subdividing the other public lands of the United States.<sup>3</sup>

This legislation had little immediate effect because of the war but would initiate the start of public land surveying operations in three areas and, importantly, require three new principal meridians and baselines be established.



## An Overview of the Operations

On February 14, 1815 the Commissioner of the General Land Office (GLO), Josias Meigs, wrote to the Secretary of the Treasury, “addressing you on this subject, lest it might, through the multiplicity of other business, have escaped your attention,” stating,

In the act making appropriations for the support of Government, published this day, I do not perceive any appropriation for Surveying the public Lands. There was appropriated, for that purpose, in 1810-30,000

1811-100,000

1812-48,620

1813-61,262

1814-60,000

If it is contemplated to prepare Lands in the Territories of Mississippi and Missouri for Sale, and to Survey the Six millions of acres for military Services, I respectfully submit that an appropriation may be necessary equal to that of the year 1811.<sup>4</sup>

The following month, on March 5, 1815, Commissioner Meigs wrote to President James Madison, stating

The act of Congress, of 6th May, 1812 ... authorises (sic) the president of the United States to cause to be surveyed a quantity of the public lands, fit for cultivation, not otherwise appropriated, and to which the Indian title is extinguished, not exceeding six millions of acres,

In the Michigan Territory	2,000,000
Illinois Territory	2,000,000
Louisiana Territory, (now Missouri Territory,)	
between the rivers St. Francis and Arkansas	2,000,000
acres	6,000,000. <sup>5</sup>

He then suggested “the propriety of causing the surveyor General, to take measures for carrying the ... law into execution,” and then further suggested the following surveying operations.

In the Michigan Territory, beginning at Detroit, running from thence a basis line due west, to the Western boundary of the cession obtained by the treaty made at Detroit, the 17th of November, 1807: crossing that base line at its centre, by a first Meridian, and numbering the ranges, 1. 2. 3, &ca E & W of the first Meridian, in the Territory of Michigan; and numbering the townships 1. 2. 3, &ca N. and S. of the base line. This cession is estimated to contain about five million acres, of which private claims to the amount of about 136,000 acres have been surveyed. After the surveys of two million acres for military bounties, (between the first Meridian and the Western boundary of the cession) have been made, surveys may be commenced E of the Meridian, to form a district for sale at Detroit, where a Register and Receiver were placed before the war, but where no lands have yet been prepared for sale; or the surveys on both sides of the Meridian line, may proceed at the same time.

In Illinois territory, beginning at the mouth of Illinois river; thence due North for a first Meridian, numbering the Ranges 1. 2. 3. West of said first Meridian.

In the Missouri Territory, beginning at the mouth of White river; thence due North for a first

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

---

Meridian, numbering the Ranges E. & W. of said Meridian.<sup>6</sup>

He ended by stating, “Should you approve of the foregoing plan for surveying, the ensuing season, I will direct the surveyor general to carry it into execution, instructing him, at the same time, that if he can offer any improvement to the plan, to do so.”<sup>7</sup>

Two days later Edward Tiffin, the Surveyor General of the North West at Cincinnati, wrote to the Commissioner asking if he could get copies of the “late Laws relative to the Military bounty Surveys” and inquired “how far it is expected to progress this Season with them.”<sup>8</sup> He added.

I would also beg leave to call your attention to the Acts of Congress of the 26th of March 1804 and of the 20th of May 1812 in order to ascertain whether it will not be most economical (sic) to carry the provisions of those Acts into effect, before we begin the Military bounty lands in Michigan. The first mentioned Act in the first Section provides, “That it shall be the duty of the Surveyor General to cause to be run, surveyed and marked such of the Indian boundary lines of the said lands, as have not yet been Surveyed; And with the approbation of the President of the United States to ascertain by Astronomical observations, the positions of such places, North of the River Ohio and East of the River Mississippi as may be deemed necessary for the correctness of the Surveys; and to be the most important points of the Geography of the Country.”

The second Act provides, “That the Surveyor General under the direction of the President of the United States be, and he is hereby authorized and required (so soon as the consent of the Indians can be obtained) to cause to be surveyed marked and designated so much of the Western and Northern boundaries of the State of Ohio, which have not already been ascertained, as divides said State from the Territories of Indiana and Michigan &c &.”

If on consultation with the President of the United States, it should not be necessary to attend to the Provisions of those Acts prior to the Surveys of the Military bounty Lands, I conceive it will be absolutely necessary to regulate the Surveys agreeably with the excellent mode agreed upon between Mr. Gallatin & the late Surveyor General (Mr. Mansfield) that is, by continued standard lines. I have drawn a birds eye plat of the Country which altho not accurately drawn, yet it is sufficiently so for our present purpose viz - to shew where to run Meridian and Base lines to commence upon - and which I now enclose, by which you will see the present Indian boundary lines laid down and where it is proposed to establish new standard lines – first – In the Territory of Missouri it is proposed to lay off two Million of Acres between the Rivers St Francis & the Arkansas. I propose as laid down on the plat, to run a base line from the mouth of the St Francis to the River Arkansas, and let this base line be the base to commence the Surveys upon, and number the Ranges from East to West. (Fig. 1)

Secondly(sic) In the Territory of Illinois, it is intended to lay off two Million of Acres North of the Illinois River. I propose, as laid down on the plat, to extend the 3d principal Meridian, commencing at the mouth of the Ohio River. You will observe that this Meridian will run through Indian lands untill (sic) it strikes the Illinois River, but this part may only be run and not marked, and after crossing that River then extend and mark it to the North Indian boundary line, commence a Base



at the point where this Meridian crosses the Illinois River and extend it to the Mississippi – thus we have both a base and a Meridian to commence upon & to number the Ranges West from the Meridian

I also enclose a plan of the mode of runing (sic) a Base and a Meridian in the Michigan Territory, so as to commence the Surveys there. (Fig. 2)

Your own fertile mind will suggest the advantages those plans will present to the United States, and I await your Instructions either in conformity therewith, or in any other preferable mode.<sup>9</sup>

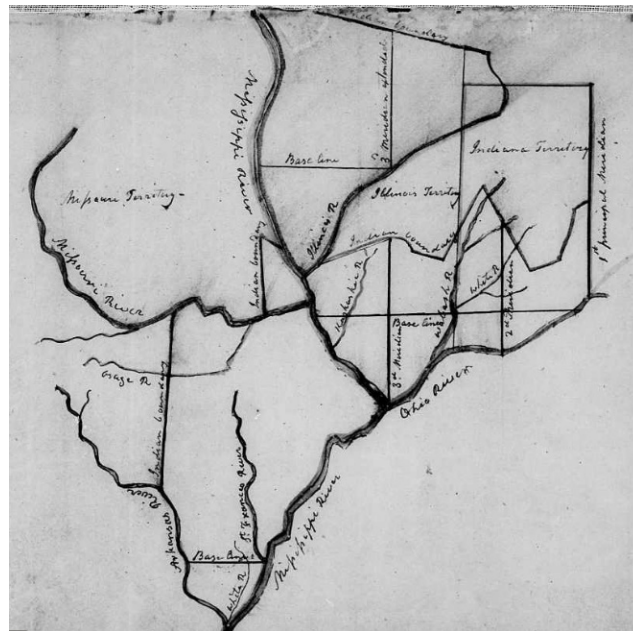


Figure 1. Tiffin's Plan for Meridians and Baselines in Missouri and Illinois.<sup>10</sup>

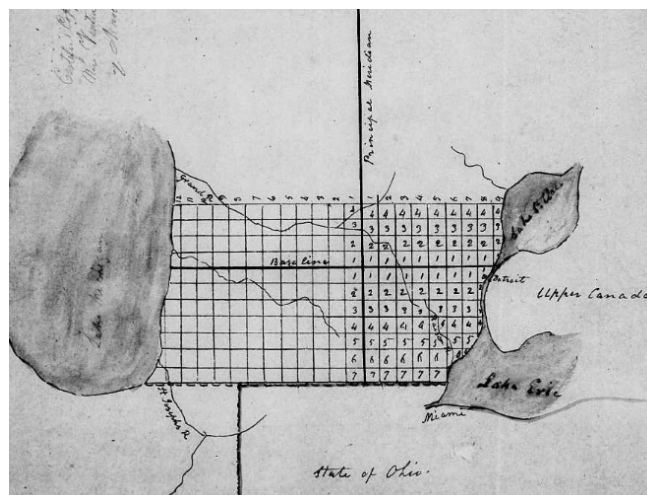


Figure 2. Tiffin's Plan for Surveys in Michigan Territory.<sup>11</sup>

On March 13 the Commissioner responded to the Surveyor General stating that the military tracts be surveyed “as the nature of the business will permit” and asked him for his opinion on a plan for carrying

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

---

out the work “with as much detail as you please.” He asked if the 2 million Acres in each territory should be contained in one body and if so, where should each of them be located. And most pertinently asked, where his meridians & base lines would be run.<sup>12</sup>

On March 23, 1815 the Commissioner elaborated further, writing,

The Act of Congress appropriating six millions of Acres for military bounties, is in the Land laws passed in the year 1812, & dated 6<sup>th</sup> May, not any law relative to that subject was passed last session of Congress

It is his wish & I am particularly instructed to cause the six millions of Acres of military lands, appropriated by the Act of 6<sup>th</sup> May 1812 to be surveyed according to the provisions of that act as speedily as possible.<sup>13</sup>

Let the two million acres in Michigan be as near the north boundary of OHIO & the western shore of Lake Erie, as convenient. The northern boundary of Ohio not having yet been determined, you will be careful not to extend the surveys so far south as to encroach on that boundary.

2d Let the two million Acres in Illinois be between the river Illinois and the Mississippi. It is doubtful whether the 3d meridian can be extended, correctly, to the river Illinois, it will therefore be best to constitute a fourth principal meridian which shall commence at the confluence of the Illinois & Mississippi. The northern boundary of this portion of military lands will probably not be in a higher latitude than 40, 30 N.

3d As to the two million acres between the St Francis & Arkansa, (sic) I shall consult further with the President.

Such is the general outline suggested by the President. It is desirable that you should, without loss of time take every necessary preparatory step for the execution of this important work. As the Government has pledged itself to its soldiers to give them lands fit for cultivation, it is obviously necessary that the Surveyors be particularly bound by their contracts with you, to note the quality of all land, its timber &c &c, over which their chains pass. I am directed to press this subject earnestly, for although according to the standing rules & instructions given to Surveyors, they are bound to the performance of this duty, yet the Government in these surveys, wishes to preclude all possibility of blame.

If you can find able and faithful Surveyors it is wished that the work may commence as soon as possible in each of the three territories.

I hope soon to receive your answer to my letter of the 13<sup>th</sup> Inst and if any new ideas shall be suggested by you, they shall receive attention.<sup>14</sup>

Two weeks later the Commissioner wrote again to Tiffin,

In addition to the instructions heretofore given by me relative to the survey of six Millions of acres for military bounties, you will be pleased to direct the deputy Surveyors to note not only



the Soil & timber, but all salt springs and appearances of lead Mines which they may discover; for the Act of Congress of 6th May 1812 directs that all such Springs & mines shall be reserved.

In the Territories of Michigan Illinois and Missouri, private claims have been confirmed by Congress, should any of those claims lay in the tracts designated for military bounties must not be encroached upon; the deputy Surveyors who contract for surveying in the neighbourhood (sic) of such claims should therefore be furnished by you with copies of the surveys of the said private claims, that they may be connected with the surveys of the public lands.

It will, in my opinion, be necessary, either that four skillful deputies should repair to each military tract and run the standard lines, commencing altogether, & each running a line towards a cardinal point, or else that one skillful deputy be appointed (for each tract) to run the standard lines, those lines to be marked at each half mile & also at the corners of townships: Contracts may be made with those Surveyors & as many others as may be necessary to complete the surveys speedily, each surveyor taking certain townships in certain ranges. The contracts need not be delayed until the lines are run, for an estimate of the number of ranges & townships may be made with sufficient accuracy to form the contracts, & the standard lines being run & marked, each deputy will readily find the townships for which he contracted.<sup>15</sup>

He goes on to state,

In my opinion contracts should not be made with any individual for more work than he can execute personally with his chain carriers &c. for each deputy must be bound by his oath and contract (as heretofore) faithfully to execute the contract agreeably to Law, and to the instructions of the Surveyor General therefore farming of contracts, by those who contract with you, to sub-contractors, is inadmissible.

A part of the standing instructions of the Secretary of the Treasury to the Surveyor General, which may have escaped your notice, & which are very interesting to you, you will find annexed. As you have such a superabundance of applicants for surveying I trust you will be able to have the work completed speedily & accurately. The Plats & field notes must be on paper of uniform size.<sup>16</sup>

An addendum to the letter contained an "Extract from standing instructions of the Secretary of the Treasury [No date]" noted,

Reasonable advances of money will be made directly to yourself from the Treasury, for which you will be held accountable--but no credits will be allowed to you, except for services performed according to law. When advances are made, it will therefore be proper & necessary that you should be satisfied with the security therefor, & that the same will be duly accounted for. If monies are advanced on account, a list thereof to be transmitted with your quarterly accounts, & the amount thereof is to be stated as a component part of the balance to be accounted for in a subsequent statement.

Copies of all contracts made by you with the Surveyors or other persons, are from time to time to be transmitted to this department."

You will also observe that the Law requires that the Surveyor General, assistant Surveyors & chain carriers, should before entering on their several duties take an oath or affirmation faithfully to

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

---

perform the same."

Though not specially enjoined, it appears to be proper, that transcripts of the Oaths or affirmations so taken should be transmitted to this department.<sup>17</sup>

## Operations in the Michigan Territory

Tiffin replied on April 8, 1815 stating, "I wish you had given your opinion of the Meridian and base lines I proposed to run in the Michigan Territory, from your silence and the determination not to run the line between the State of Ohio & Michigan I presume you approve of them." Ten days later, in what appears to be a postscript to a letter dealing with boundary issues, the Commissioner wrote, "The meridian and base lines you proposed in Michigan territory were approved."<sup>19</sup>

On April 8, the Surveyor General awarded Alexander Holmes a contract to,

faithfully lay out & survey with the assistance of such chainmen and axemen as may be necessary agreeably (sic) with the Laws of the United States and such instructions as may be given by the Surveyor General the Range & Township lines hereinafter described viz: A true base line due West from a point above Detroit to the Indian boundary line agreeably (sic) with the plan furnished and four ranges of townships including ...<sup>20</sup>

Ten days later, the Surveyor General awarded Benjamin Hough a contract to run "a true meridian line from Fort Defiance at the mouth of the Auglaize river North, agreeably with his instructions, and four Ranges of Townships North of the base line and four ranges of townships South of said base line, each range including Six townships North and Six townships South, the said Base line to be run by Alexander Holmes."<sup>21</sup> Deputy Hough began his work on September 29, 1815. His notes state: "Commence the meridian, or Indian boundary line at the mouth of the Great Auglaize River and run by the true meridian due north."<sup>22</sup>

## Operations in the Illinois Territory

On May 24, 1815, Surveyor General Tiffin awarded Enoch Moore, John Moore and John Messenger a contract to survey

A true meridian line to be drawn North from the confluence of the Illinois & Mississippi rivers the exact distance of 72 miles, which line is to be denominated the 4th principal meridian, thence a Base line to be drawn due East from the 72d mile post until it intersects the Illinois River, and to lay off and Survey the tract of Country South of such base line and East of such principal meridian and extending to the Illinois River into Ranges & Townships agreeably (sic) with the plan furnished.<sup>23</sup>

On November 20, 1815, John Messenger wrote the following to Tiffin,

I arrived home from the Illinois River Yesterday. I established the corner in the forks on the first Ins<sup>t</sup> from which Mr. McDonnald commenced Meandering the Illinois and Mississippi Rivers. After waiting two days more at the mouth of the Illinois, for the company of Messrs Moores and others I proceeded to the North with the Meridian on the 3<sup>d</sup> day Ins<sup>t</sup> and arrived at the head on the 12<sup>th</sup>.



You will perceive Sir – that the whole of s<sup>d</sup> Meridian (to the distance of Seventy one Miles and Sixty six Chains) lies on the East side of the Illinois River, by the field Notes taken thereof, which perhaps may arrive at your Office with this. We run said line without blazing, as was deemed most proper while it continued on this side of the River, by all present, at the commencement. I was informed Just as I started for home, that Mr. McDonnald had made about 52 Miles Northing at which point, he was about 6 Miles West of said Md--and that he also stated, that there would be about 36 Townships in the forks, south of the Base line.<sup>24</sup>

The same day, deputy Enoch Moore also wrote to Tiffin

I arrived safe at home last evening from the completion of that work on the Illinois River which myself and others undertook to perform.

We proceeded to the Confluence of the Mississippi and Illinois Rivers and there found the variation of the Compass with as much exactness as possible which was Eight degrees and ten minutes East. We there commenced the 4<sup>th</sup> Principal Meridian which crossed the Illinois River at right Angles immediately at its Mouth we then Continued said line due North on the S. E Side of Said River 71 miles and 66 Chains and at the end of those miles the River came from the N.E and the line running (sic) obliquely across it caused the meridian to end therein. Consequently we had no Base to run nor Townships to lay off. Of course our disappointment and expences (sic) were great we have sunk money considerably by having to pay the necessary expences (sic) of about a months work and not having as much work as we anticipated our time was consumed in travling (sic) there and back pretty much with our different Companies all under wages and doing no work (for we had none only for one company). I would refer you to a communication from Mr. Messinger for further particulars respecting this line as he is a Postmaster my Brother and myself thought it most advisable to put the field notes into his hands in order to have them sent on to you immediately by mail. You will at the same time receive a plat of this bank line which will give you some Idea of the Country over which it runs.<sup>25</sup>

John Messenger wrote again to Tiffin a week after his first letter,

I wrote to you on my return from running the 4<sup>th</sup> Principal Meridian (dated the 20<sup>th</sup> perhaps) and forwarded it, and the field Notes by mail - Since which M, Edwards has returned from the Illinois River and intends going to your Office; and I improve the opportunity of writing again. The said Meridian line to the distance of 71 Miles and 66 Chains is alltogethe (sic) on the East side of the Illinois River, the 72<sup>d</sup> Mile terminated about the middle of the channel, the course of which at the line, is from the N.E. to the S.W. We conceived said line to be on lands not yet ceded to the U. States, and did not blaze the line and establish corners as you will observe by the field notes transmitted.<sup>26</sup>

Sir, from my knowledge of the country, that we cannot afford to do it for less than three dollars pr Mile and do it as it is required to be done by our Oath and Instructions - However if there are other surveyors that will do it for 2 1/2 dollars pr Mile, and do it as it ought to be done, the public interest will cause such to have the preference

He ended by stating,

If we are entitled to any pay for said Meridian, you will confer a singular favour (sic) on us to

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

---

forward the sum, by Mr. Edwards, if he returns, as now contemplated – for we have not money on hand to defray our late expences (sic). My expences (sic) for hands and provisions for the tour, up the Illinois, amounts to \$93.50.<sup>27</sup>

Early in December, the Surveyor General wrote to the Commissioner,

In compliance with instructions contained in your letter to me of the 23d of March last, to establish a fourth principal meridian commenceing (sic) at the confluence of the Rivers Illinois and Mississippi preparatory to laying off the Military bounty lands, I contracted with John Messinger, J Milton Moore & Enoch Moore all of the Illinois Territory to run a true Meridian line North commenceing (sic) at the confluence of the two rivers for 72 miles or the extent of 12 townships – thence a base line due east to the Illinois river, ....

This morning I have received letters from the former persons with a return of the field notes from which it appears, that after establishing a corner at the confluence of the Illinois and Mississippi rivers for the commencement of the 4th principal meridian, the line soon crossed the Illinois which falls into the Mississippi in an easterly direction. It was continued without marking the distance of seventy one miles and Sixty six chains where it intersected the Illinois and fourteen chains farther where it ended was at a point in the river inaccessible (sic) – so that the whole of the 4th principal meridian lies on the East side of the Illinois river, thus we find that upon an actual survey of the country our best maps are incorrect – there being no Ranges & townships to lay off east of the meridian-or to subdivide. Those Gentlemen’s work is done.<sup>28</sup>

He then added his voice to those of the deputies regarding compensation stating

It may be proper to observe, that from the advanced price of hands & every necessary, the great distance the lands lay from settlements &c it will not be possable (sic) to getting Surveying done in future under 3 dollars a mile, several Old Surveyers (sic) assure me such was your opinion and have quoted parts of letters from you to that effect. I believe now as you then did, that the parsimonious mode adopted is not the best.

Genl Rector the principal deputy for Missouri writes me he had to give 3 dollars - and that they are comeing (sic) in very well in Surveying the Military lands between the St Francis & Arkansas &c.<sup>29</sup>

He ended

I enclose a sketch of the Lands as we suppose now, they will lay between the Illinois & Mississippi – by comparing it with the former sketch upon which the former plan of a 4th principal meridian was predicated, the difference will appear. I am very anxious to hear from you since my representation of Michigan went on - subsequent accounts confirm the statements & make the country out worse (if possable) than I had represented it to be.<sup>30</sup>

About the location of the Meridian, White, succinctly stated, “Had Tiffin and Meigs known the true course of the Illinois River, it is extremely doubtful that they would have used the mouth of that stream as a

beginning point for the meridian.”<sup>31</sup>

## Operations in the Missouri Territory

On April 17, 1815 Principal Deputy William Rector at St. Louis wrote the following to Commissioner Meigs,

In compliance with your request contained in your letter of the 22d Feby. I herewith transmit to you a Sketch, of part of this Territory together with an estimate of the probable expence (sic) of Surveying such parts of it into Townships as I suppose ought to be Surveyed immediately, and also the probable expence (sic) of subdividing the whole of these Townships into Sections and establishing corners for quarter Sections.

You will perceive from the Sketch, that in forming it I have proceeded on the presumption, that the Ranges of Townships in this Territory will be counted and numbered from the Meridian of the confluence of the Mississippi and Ohio Rivers, and the Townships from a continuation of the Base Line, that passes through the Illinois Territory. Should this plan not be eventually adopted Yet it will serve for the present purpose to give an Idea of the extent of the several quarters of the Country it is intended to represent.

I will here observe, that I do not present this Sketch to you as an accurate Map of the Country. But as one that will serve to shew nearly the figure and extent thereof with the principal Rivers & water courses passing through and bounding it. That in forming this sketch I have not attempted to represent the minute meanderings of the Rivers, That there are within this tract many small, Rivers, Creeks, innumerable Brooks Rivulets &c which from my imperfect knowledge of their Geographical Situations, I have declined attempting to lay down.<sup>32</sup>

Three days later the Principal Deputy wrote again to the Commissioner with the same information.<sup>33</sup>

On June 3 the Commissioner replied to the Principal Deputy’s first letter,

I have received your letter of April 17th with the Map of the Territory of Missouri and an estimate of the expense of the Surveys you propose to be performed in that Territory. I approve entirely of your opinion as to the necessity of an extensive Survey, and have laid before the Secretary of the Treasury a Copy of your Map, and have recommended your general plan. In a few days I trust I shall be able to communicate directions to you, through the Surveyor General, under whose immediate authority you are by law bound to act.<sup>34</sup>

The Commissioner wrote to the Surveyor General of the North West, Edward Tiffin, two weeks later

I do not know whether you have already made any contracts for the surveying of two millions of acres between the river St. Francis & the river Arkansas. (sic)

In my letter of March 23d 1815, you were informed, that as to the two millions of acres between the St Francis & the Arkansas I should consult further with the President.<sup>35</sup>

You will therefore enter into no contract for the survey of the military bounty lands between the St, Francis and the Arkansas, until you receive further directions, and if any contracts for the survey of that tract have been made, you will suspend their execution.<sup>36</sup>

The following month the Commissioner wrote again to Tiffin,



# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

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In my letter dated 16<sup>th</sup> Ult. I directed you to suspend the intended survey of 2,000,000 acres between the Arkansas & the St Francis. I have now to request you to proceed with that survey, with this express proviso, that the Deputy surveyors are to consider the risk of Indian opposition as a circumstance for which the U. States are not to be responsible. The right of the nation to effect that survey is clear & indisputable, but the spirit of its humane policy forbids every act which may subject the Savages to a renewal of war, which must be injurious and ruinous to them. If your deputies are, as I doubt not they are, prudent and discreet men, I apprehend no essential inconvenience will result from their proceeding to execute their contract.<sup>37</sup>

On July 10 1815 Tiffin responded,

I had delayed answering your letter of the 16<sup>th</sup> Ult. directing the Suspension of the Surveys of the Military bounty lands between the St Francis and Arkansas rivers in Missouri Territory, in daily expectation of the arrival of Gen. Wm Rector, the principal Deputy for the Territory of Missouri, to whom the immediate direction of the execution of those Surveys will be committed. He has written me, from time to time, since March last, that he would set out immediately for this place, to make compleat (sic) returns to this Office, of all the Surveys for which he had contracted, in the District of Kaskaskia; and I am now assured by his brother Nelson, who is here, that the General is on his way

The Surveys of the Military bounty lands, in the Missouri Territory, have not yet been commenced. The reasons for the delay are these: 1st the knowledge of the actual hostility of the Indian tribes in that quarter, manifested in their late, repeated murders of the defenceless (sic) frontier inhabitants, from which it was evident the Surveyors could not, without too great a hazard, proceed to the execution of their duties; & 2nd the certain information, sometimes since, received, that Commissioners had been appointed to hold a treaty with those Indians, for the purpose, no doubt, of concluding hostilities, and opening the way for the public surveys to go on. To these I may add, the expectation, as suggested in your letter of the 1st ulto that you were preparing for Mr. Rector, a System for the Survey of the lands in Missouri Territory. A Sufficient number of Skilful (sic) Deputies, however, have been engaged, on the recommendation of the Principal Deputy, who are ready to enter into contracts, and take the woods, so soon as the pacification of the Indian tribes in that quarter shall be effected, and your directions for that purpose received.

It would be very desirable to me, during Mr. Rectors stay here, which I expect will be some weeks, to know what are your views and intentions relative to the Survey of the two million acres of Military bounty lands between the St Francis and the Arkansas rivers, in Missouri Territory, which you have directed to be Suspended; in order, that, before his departure, measures may be concerted, and the necessary arrangements made for their execution and completion, if it shall be so directed. I should, likewise, be glad to receive your further instructions, and know your intentions, relative to the directions formerly given, "to direct the principal Deputy Surveyor of the Territory of Missouri, to Survey into Townships and Sections, such part of the Territory as will include the principal part of the private claims."

Will you have the goodness to give me your opinion on the Act of Congress of the 28<sup>th</sup> Feb. 1806 10 (see Land laws, page 169) whether it is the duty of the Surveyor General, or of the principal Deputy, to enter into the contracts with the Deputies, for the public surveying in that Territory?<sup>38</sup>

On July 21 Tiffin wrote again to the Commissioner, acknowledging that he had received the Commissioner's letter of July 14. He stated.

The three Mr. Rectors are all here, but two of them are ill with fevers. I presume we shall be occupied a month with them constantly and I hope soon to have your answer to my letter requesting your construction of the Act of Congress of the 28<sup>th</sup> of Feb 1806 – as well as your final instructions respecting the quantity of Lands to be surveyed in Missouri other than the two Million Acres for Military bounties.<sup>39</sup>

On July 26 Tiffin wrote to Meigs stating

I have this day received yours of the 18<sup>th</sup> inst. and am happy to find that you agree with me in the construction of the Act of the 28 of February 1806 for I had feared from the tenor of some of your former letters that you either had not adverted to it - or differed from me in its construction. As Mr. Rector and one of his deputies who have attended here to make some returns from the Kaskaskia District are both laid up with fever and will be here some time, I take the liberty of submitting to you copies of such instructions as I have prepared for his government in regard to the surveying to be done between the Rivers St. Francis and the Arkansas, so that if you should not approve of any part or should anything farther be necessary, you would have the goodness to point it out to me, as there will be time before he leaves his (if done promptly).<sup>40</sup>

Rector received the following instructions for surveying in the Missouri Territory along with a letter from Meigs,

1<sup>st</sup> You are required to have Surveyed two Million Acres of Land between the Rivers St Francis & Arkansas, (sic) which have been appropriated by an Act of Congress for Military bounties (to which I refer you) The Annexed plan, on which these rivers are laid down with the lands lying between them in Ranges and townships will shew you the mode in which it is intended to have these Surveys executed

1<sup>st</sup> Let a Standard line be accurately run from the confluence of the Arkansas (sic) with the Mississippi due North according to the true meridian so far, that a base line run due West from the mouth of the River St Francis to the Mississippi will intersect it as laid down on the plan.

2<sup>d</sup> Lay off the Lands South of this base or East & West line into Ranges & Townships of Six miles square by running (sic) the North and South lines according to the true meridian and the East & west lines at right angles as near as may be, down to the Rivers Mississippi and Arkansas, (sic) and number them both Ranges & Townships as exhibited on the plan.

3<sup>d</sup> Let these townships be subdivided as has been heretofore practiced into Sections, establishing corners for quarter sections, and marking the lines, and Range, Township, sections & quarter sections corners in the usual mode.

4<sup>th</sup> Furnish every Surveyor you employ with one of the depositions enclosed, and see that both himself, his chain and axemen are duly sworn before they proceed to work & return a copy of

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

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such Oaths to this Office.

5<sup>th</sup> Furnish every Surveyor with a plan of the whole Military district and a copy of the Instructions enclosed, that each Man may be able to comprehend the plan how the Surveys are to be executed and know how to attend to his compass & chain, to mark his corners accurately, and make his returns in a proper manner.

6<sup>th</sup> When work is done & returned to your Office you are to examine and see that it is done agreeable to Law & the instructions given and return it certified to the Office of the Surveyor General to wit – a copy of the field notes of every township or fractional Township, and two setts (sic) of plats & descriptions laid down on paper of a uniform size with an Inch space on the margin, so that all plats when finished may be bound in a book.

7<sup>th</sup> You are furnished with a copy of a form of contract, so that you may enter into contracts with the Deputies, (sic) observing always to have duplicates signed, one of which is to be returned to this Office when entered into.

8<sup>th</sup> All the Surveys contracted for to be done in the Michigan & Illinois Territories have been at 250 Cents per mile, It is therefore expected you will be able to get the Military Lands done in Missouri at the same rate, but if as you suggested this should be impracticable, you are authorized to give 300 per mile, but only in case of necessity-being satisfied you will guard the interests of the United States from imposition, in as much as by doing so you are advancing your own interests.

9<sup>th</sup> When any Deputy Surveyor has finished his contract, made his returns to your Office and it is certified & returned to this Office, the accounts will be paid off in such manner as may be most convenient to the claimant & the regulations of the Treasury department.<sup>41</sup>

On October 9 1815 Principal Deputy Rector awarded Joseph C. Brown a contract to survey “a Base Line due west, from the mouth of the St Francis river to the Arkansas River” and on completion “forward to the office of the Principal Deputy Surveyor the field notes made thereof.”<sup>42</sup> Two weeks later, on October 27, 1815, Deputy Brown began surveying the baseline at the confluence of the Mississippi and St. Francis Rivers and ran due west.<sup>43</sup>

On the same date, Prospect C. Robbins began the survey of the meridian at the confluence of the Arkansas and Mississippi Rivers and ran it due north. Robbins intersected the baseline in the 58th mile, approximately 26 miles west of the Mississippi River, on November 10, 1815. There he established the initial point of the Fifth Principal Meridian, which controls the rectangular surveys in all of Arkansas, Missouri, Iowa, North Dakota, and in most of Minnesota and half of South Dakota.<sup>44</sup>

On January 1, 1816 Surveyor General Tiffin wrote to the Commissioner enclosing the map shown in Figure 3.<sup>45</sup>



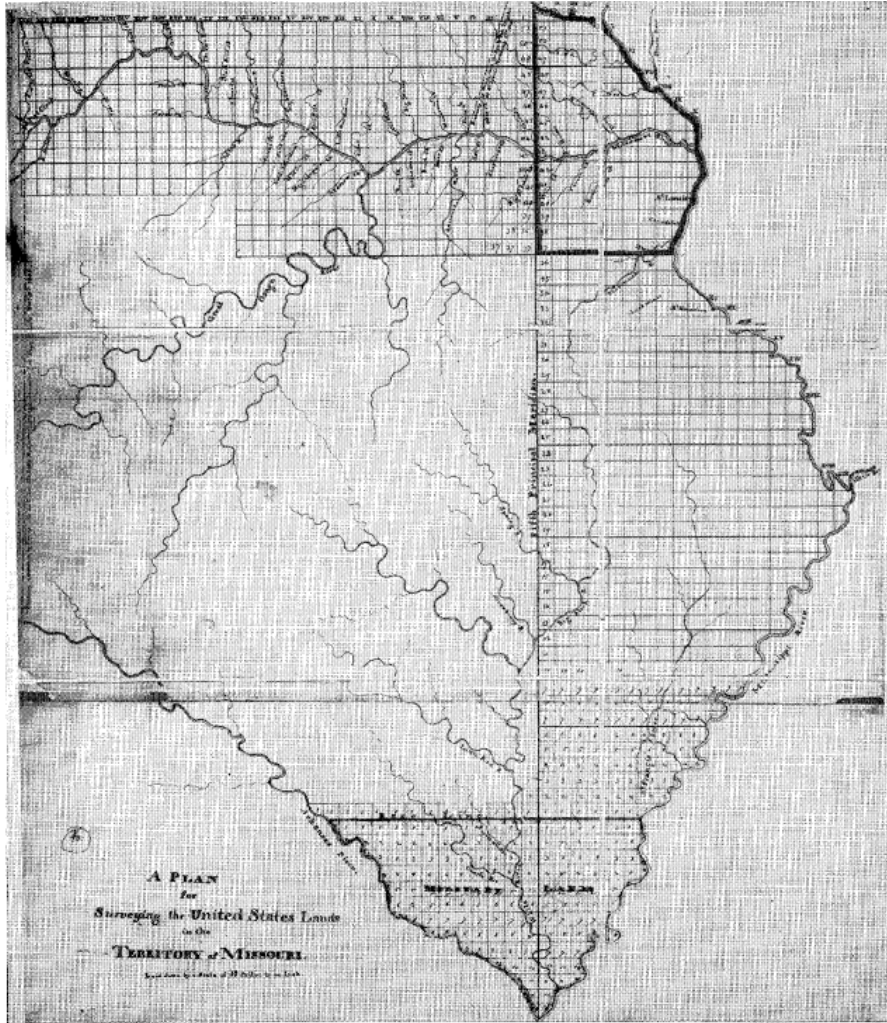


Figure 3. A Plan for Surveying the United States Lands in the Territory of Missouri

On January 15, 1816 Rector wrote the following to Commissioner Meigs

By the last mail I forwarded to you the Field Notes and Plat of the Fifth Principal Meridian from the confluence of the Mississippi and Arkansas Rivers to the Missouri River which measured Three hundred and seventeen miles 32 chains & 76 Links, and struck the Missouri River about thirty six miles West of this place. By refering (sic) to the field notes you will discover that great part of the Country over which this line passes from the Mouth of the Arkansas to the intersection of the Base Line is generally covered with water from three to fifteen feet deep. At the time Mr. Robbins Surveyed that part of the Line the waters were uncommonly low, little or no rain having fallen for a long time before. He was therefore able to get the line through that low part of the Country without much difficulty on account of water. I this morning received information from several of the Deputy Surveyors who are working in that quarter that the waters had risen & about the 20th of December covered a large portion of the Country South of the Base Line, and was then rising and that in consequence thereof it would be impossible for them to perform the whole of the work they had contracted to do. It does not seem necessary that the overflown Lands, should be surveyed as it is not of the description secured by Law to the Soldiers nor would

# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

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it shortly if ever sell. Knowing that you are desirous to have the Surveys of the Military Lands Completed as soon as possible I feel much solicitude on the subject and hope you will forward to me as soon as convenient instructions how I am to act in the business. Perhaps it would be a good plan to lay off into Townships a tract of Country sufficiently large (North of the Base Line between the St Francis and Arkansas Rivers,) to include as much good Land as will make up the proper quantity for military bounties In that case such Townships as should be found to contain a large portion of Land unfit for cultivation need not at present be subdivided into

Sections &c. Any plan that you may think proper to lay down for my government, I shall exert myself to execute as soon as possible and should I get your instructions soon I hope yet to be able to complete the Surveys of the whole of the Military bounty Lands before the hot weather sets in.

Mr. Brown who Surveyed the Base Line informs me that the whole length of that Line from the Mouth of the St Francis River to the Arkansas River is 84½ miles, From the 5th principal meridian to the Mouth of St Francis some chains more than 26 miles from the Meridian to the Arkansas some chains more than 58 miles ...<sup>46</sup>

## Conclusion

This article shows that the location of three principal meridians and baselines reflected the necessity for initiating the public land surveying operations in areas where there was little knowledge of conditions, a necessity caused by the United States government’s interest in providing land for military veterans in areas, some of which had yet to be ceded by the indigenous peoples. There was a system of establishing principal meridians and baselines but it was not a predictable system but rather a happenstance system. They were established when and where it was expedient or necessary and contingent upon various circumstances.

## Endnotes

<sup>1</sup> Johnson, Hildegard Binder. “Order Upon the Land” (Oxford University Press, 1976) p.72.

<sup>2</sup> This technical practice in the surveying operations was complemented by the practice of administering the operations.

<sup>3</sup> [2 Stat 728-9.](#)

<sup>4</sup> Carter, Clarence E. (compiler and editor) “Territorial Papers of the United States” vol. 15 [The Territory of Louisiana-Missouri 1815-1821 \(Washington. Government Printing Office\) p.8](#)

<sup>5</sup> [Territorial Papers vol. 10 p.514.](#)

<sup>6</sup> [Ibid. p.515.](#)

<sup>7</sup> [Ibid.](#)

<sup>8</sup> Letter dated March 9, 1815 Territorial Papers vol. 10 p.516-517. [The original can be seen in Letters received by the Secretary of the Treasury and the Commissioner of the General Land Office from the Surveyor](#)

[General of the territory northwest of the River Ohio, 1797-1849 : National Archives microfilm publications, Mo478 roll 5 image 31-33.](#)

<sup>9</sup> [Ibid.](#)

<sup>10</sup> White, C. Albert “[A History of the Rectangular Survey System. PDF version](#)” p.66. The original map can be seen in [M478 roll 5, image 35](#).

<sup>11</sup> [White](#) p. 64. The original map can be seen in [M478 roll 5, image 36](#).

<sup>12</sup> [Territorial Papers vol. 10 p.518-9](#).

<sup>13</sup> “his” clearly refers to the President.

<sup>14</sup> Letter dated March 23, 1815 [Territorial Paper vol. 17 p.154-156](#). The letter contains more information than I show here, for example the Commissioner noted “I have reason to believe that the northern boundary of Ohio will be found to be much further north than it appears on Mansfields & Bradleys Maps” and I have been agreeably surprized to find that more than \$120,000 which had been before the last session of Congress appropriated for surveys of public lands, is lying in the Treasury untouched.”

<sup>15</sup> [Territorial Papers vol. 10 p.524 -5](#). Letter dated March 27, 1815

<sup>16</sup> [Ibid](#)

<sup>17</sup> [Ibid. p. 525](#).

<sup>18</sup> [Ibid.](#)

<sup>19</sup> [Territorial Papers vol. 10 p.527](#). Letter dated April 18.

<sup>20</sup> [Ibid.](#) Footnote on page “This is the first contract for the survey of the Michigan public lands.”

<sup>21</sup> [Territorial Papers vol. 10 p. 530](#). On the web page <https://readtheplaque.com/plaque/1815-michigan-meridian> “The line of the meridian based on the western line of the Treaty of Detroit (1807). Hough, Alexander Holmes, and 11 crew members surveyed the line due north from Fort Defiance. The difficult terrain they encountered temporarily halted all surveys in the territory and ultimately led to the bounty land being transferred to the Illinois and Missouri Territories. The Michigan Meridian was run due north from Fort Defiance, and run due west from a point on Lake St. Clair. It isn’t known why the baseline was begun at that point. The surveys were begun in late May or early June 1815. Holmes and Hough each ran two parties, using assistance surveyors, and were paid \$2.50 per mile.” For “the western line of the Treaty of Detroit (1807) see [Indian land cessions in the United States. Michigan 1](#)

<sup>22</sup> <https://project.geo.msu.edu/geogmich/Survey.html>

<sup>23</sup> [Territorial Papers vol.17 p.184](#).

<sup>24</sup> [Territorial Papers vol. 17 p. 248-249](#). The deputy went on to comment about his experiences encounter with a band of indigenous peoples and on the price paid for the surveys.

Short of that we cannot save ourselves, and do the work as it ought to be done by our instructions and Oath If foreigners can do it for less, and do it as it ought to be done I am willing to lay up my corn- pass as a useless furniture



# COMMENTARY ON “THE DISTRIBUTION OF PRINCIPAL MERIDIANS AND BASELINES IN THE UNITED STATES REFLECTS NO SYSTEM.” A GEOGRAPHY OF THE MICHIGAN MERIDIAN, THE 4<sup>TH</sup> PRINCIPAL MERIDIAN AND THE 5<sup>TH</sup> PRINCIPAL MERIDIAN

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General Meigs in a letter to me, dated Augt 28th 1814 6 observes that "The truth is, that the compensation allowed to surveyors is not such as to authorize the expectation of extreme accuracy in running Meridian lines" and "All your efforts will never give a Township exactly 6 miles square, nor a Section exactly one mile square, but we must follow the Rule as exactly as we can." I conceive Sir, that three dollars pr Mile, will warrant the accuracy required in our instructions, and nothing less. However I am sensible that the public interest ought to be predominant, and if there are appliants (sic) who are willing to comply with the present requisitions for 2 1/2 dollars pr Mile for surveying in this part of our country, I need not be in their way if I could. Please to write to me on the receipt of this and inform me whether I must forward a platt (sic) of the blank Meridian Just Run – as pr field Notes thereof forwarded. Id 249-250.

<sup>25</sup> [Territorial Papers vol. 17 p. 250-251](#). I presume the word “bank” should be “blank”.

<sup>26</sup> [Ibid. p.251-252](#)

<sup>27</sup> [Ibid. p.252](#). Letter dated November 27 1815.

<sup>28</sup> [Ibid. p. 258](#). Letter dated Dec 11, 1815.

<sup>29</sup> [Ibid.](#)

<sup>30</sup> [Ibid. p.259](#).

<sup>31</sup> [White](#) p. 65

<sup>32</sup> [Territorial Papers vol.15 p.26-27](#). There is more information in this letter not pertinent here. I have not seen the “sketch” mentioned

<sup>33</sup> [Territorial Papers vol. 15 p. 34](#) Letter dated April 20, 1815.

<sup>34</sup> [Territorial Papers vol. 15 p. 61](#).

<sup>35</sup> That letter is found in [Territorial Papers vol. 17 p.154-156](#) and was cited above in the Illinois section.

<sup>36</sup> [Territorial Papers vol. 15 p.63](#) Letter dated June 16, 1815. Emphasis in the original.

<sup>37</sup> [Territorial Papers vol. 15 p.64](#). Letter dated July 6, 1815.

<sup>38</sup> [Territorial Papers vol.15 p.67](#). A footnote on the page “2 Stat 352-353 – extending the powers of the Surveyor General to Missouri Territory.” The question Tiffin was raising was whether he, as Surveyor General, or Rector, as Principal Deputy, had the power to award contracts.

<sup>39</sup> [Territorial Papers vol. 15 p.71](#).

<sup>40</sup> [Territorial Papers vol. 17 p.203](#) reprinted in [White](#) p.242. I have not found the letter dated July 18.

<sup>41</sup> [Territorial Papers vol.15 p.72-73](#). [White](#) p.243.

<sup>42</sup> [Territorial Papers vol.15 p.89](#).

<sup>43</sup> Brown's notes can be seen on the Bureau of Land Management, General Land Office web site <https://glorerecords.blm.gov/results/default.aspx?searchCriteria=type=survey|st=AR|cty=|svr=JOSEPH%2bC%2bBROWN> R0002.

<sup>44</sup> [White](#) p.67.

<sup>45</sup> Territorial Papers vol. 15 p.100.

<sup>46</sup> Territorial Papers vol. 15 p.103-104.

<sup>47</sup> Because I have chosen to use the correspondence of those most involved in the surveying operations, whose writing style, especially their punctuation, is quite different from today's standards, this article is difficult to read in places.

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