

The Public Land Survey Records – the Next Step?

Rod Squires, University of Minnesota

Abstract

Creating a database that contains all public land surveying records relating to a particular corner monument or line segment is many years away

But what could or should such a database contain and is this a worthwhile goal?

The presentation will review

- what we know about the public land surveys in Minnesota
- what we still need to know
- what we need to do

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But what could or should such a database contain and is this a worthwhile goal?

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- what we know about the public land surveys in Minnesota
- what we still **need** to know – **I need to convince you**
- what we **need** to do

The Public Land Survey Records – the Next Step?
Minnesota Public Land Survey Records – A Final Overview?

Rod Squires, University of Minnesota

What you and I know about the public land surveys are quite different

Appropriately so – because of our professions

I talk, for the most part to students who know very little about the particular subject matter (while professing to know a great deal) and colleagues

I carry out research, on a variety of issues, that interest me and seem relevant (the relevance of tenure)

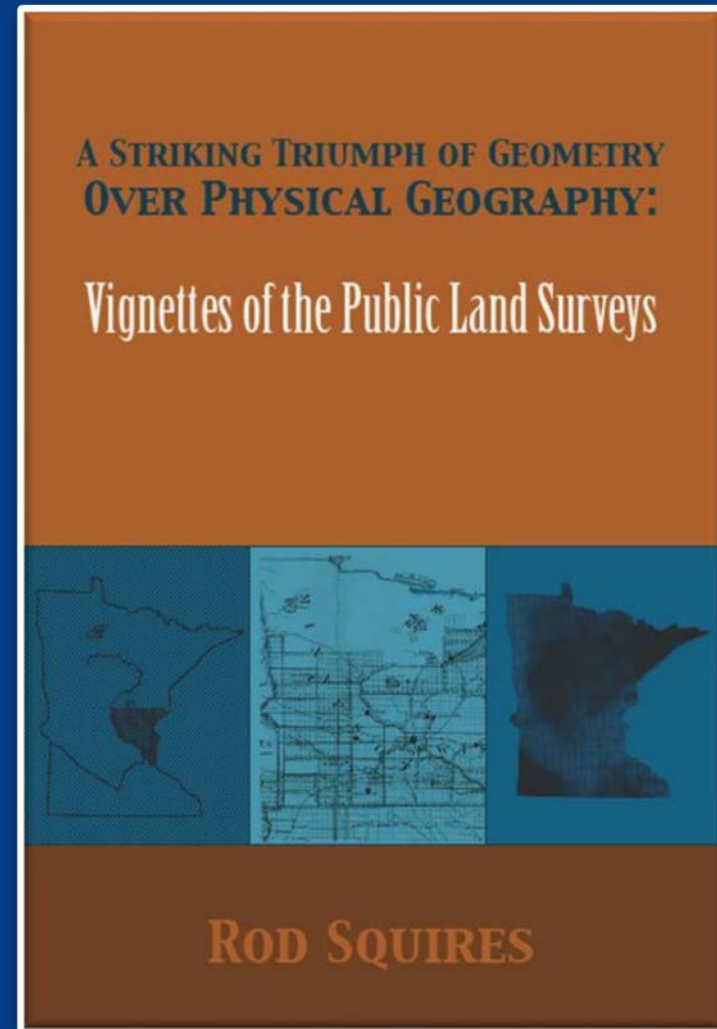
- Spend time informing people – many of who may have no interest in the subject matter – of facts that they do not know
- Spend time informing the same people – of facts they know that just ain't so

I am not a surveyor but a geographer – sometimes made painfully obvious

For years I have performed a balancing act

Detail necessary to describe and explain the public land surveying process to the land surveyors of Minnesota
– may or may not have applicability elsewhere

Generalities that provide a description of the spread of the lines to non-surveyors without being hindered by details of the public land surveying process



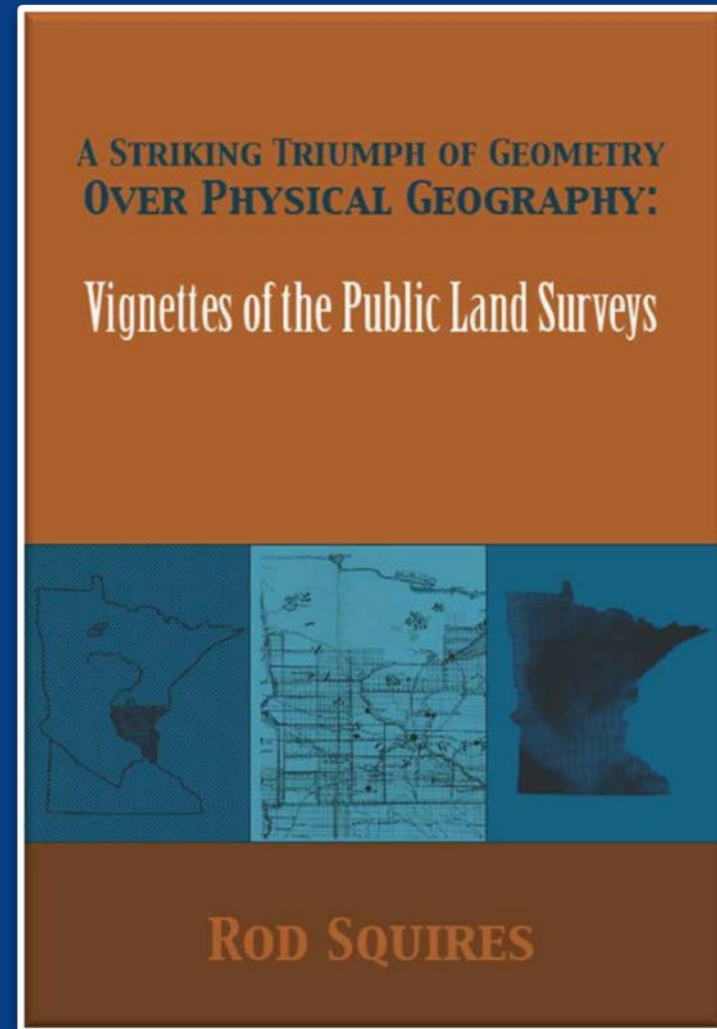
For years I have performed a balancing act

Detail necessary to describe and explain the public land surveying process to the land surveyors of Minnesota
– may or may not have applicability elsewhere

Do non-surveyors need to know such detail?

Generalities that provide a description of the spread of the lines to non-surveyors without being hindered by details of the public land surveying process

Do surveyors need to be aware of such generalizations?



I'm concerned about the future of our understanding

- Of the public land surveying process
- Of the public land survey records

Information that's new

Information that is not new but wrong or perhaps even worse partly right

My Realization?

The “detail” considered necessary seems to stop at the data contained in the field notes and township plats – records that describe what the deputies did and what they saw

These “details” limit perspective on the public land surveying process

Deputies operated at half-mile intervals over a variable area

Surveying process produced a variety of records

Records that the surveyors use

“Can information at both a larger and smaller spatial scale provide the surveyor with important information?”

I am not sure modern land surveyors can entirely understand the details of the public land survey lines they retrace and the corners they remonument without an understanding of

- a broad geographical and historical perspective of the surveys
- a greater knowledge of the surveying process

MN Department of Transportation

Funded research

- 2008 An Inventory of the Public Land Surveys Records for Minnesota: The Special Instructions
- 2012 The Public Land Survey Records in Minnesota: An Inventory and Description of the Deputy Surveyor Contracts in the Minnesota Historical Society Collections
- 2013 Reconciling the Public Land Survey Process and the Available Records

University of Minnesota. Center for Transportation Studies

2013 Reconciling the Public Land Survey Process and the Available Records

- to provide a list of documents that describe what several deputy surveyors did and perhaps even explain why

2013 Reconciling the Public Land Survey Process and the Available Records

- to provide a list of documents that describe what several deputy surveyors did and perhaps even explain why
- documents that
 - demonstrate the richness of material readily available in the Minnesota Historical Society (MHS) collections to anyone interested in understanding the surveying process
 - provide some direction for tracking surveying records absent from the MHS collections in other collections
 - provide some details that are necessary for planning and developing an electronic database containing all documents of relevance and utility to the modern surveyor

Such a database was envisioned by Jay Krafthefer, MN Department of Transportation
Land Management Division

Minnesota Surveyor Autumn 2006 issue "The Day will come"

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Partly inspired by Jesse Fant's vision of a total station

Such a database was envisioned by Jay Krafthefer, MN Department of Transportation Land Management Division

Minnesota Surveyor Autumn 2006 issue "The Day will come"

- "the complete and entire Public Land Survey document collection"
- "attached to every GLO point, line or geometric polygon are the official instructions, clarification, and specific directions issued by the Surveyor General to the deputy contracted to perform the survey"

What do we know about the Public Land Surveys?

What do we know about the Public Land Surveys?

What do we know about the Public Land Surveys that Just ain't so?

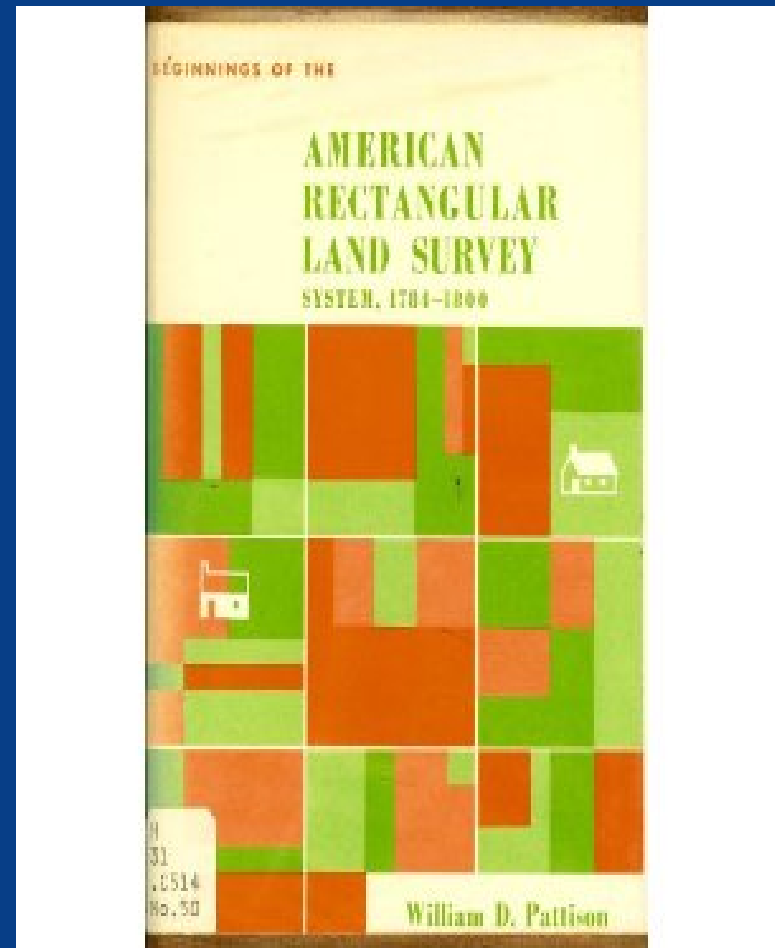
The Rectangular Public Land Surveys

“a striking example of geometry
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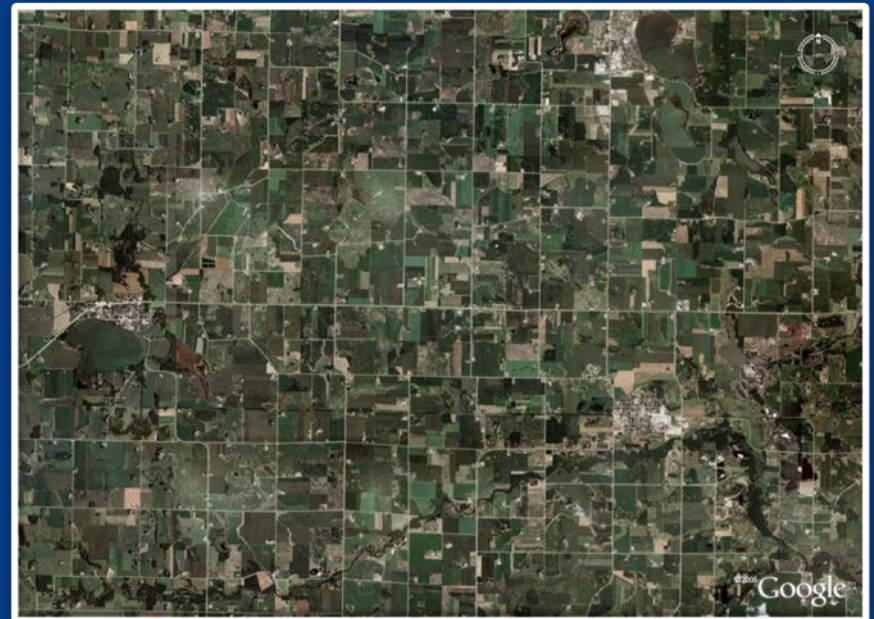
“Neither the friends nor the foes of the rectangular surveys system, in its early years, seem to have anticipated the great extent to which the gridded property lines would eventually determine land use patterns”(Pattison 1964, 231)



Impact of Surveys on Society

- The public land surveys were the first and are the most basic organizer of space in the United States

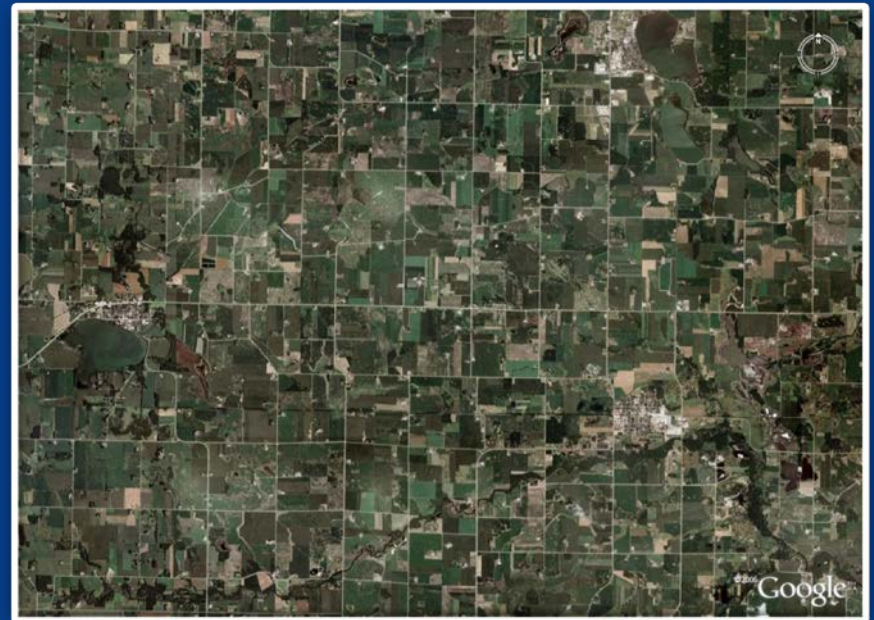
"Immaculate Grid"



Impact of Surveys on Society

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- established legal descriptions – defining spatial boundaries and locations – without which the United States government could not create landowners

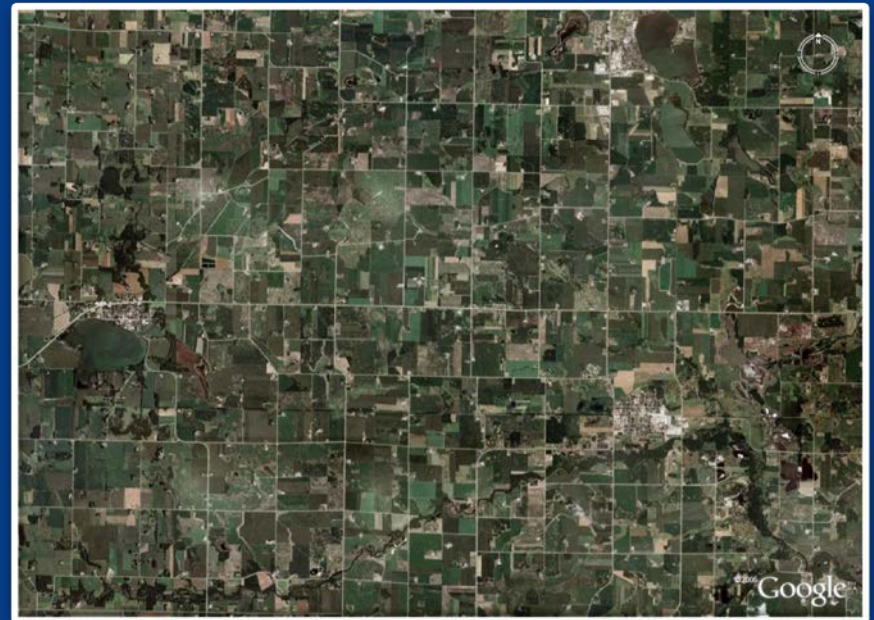
"Immaculate Grid"



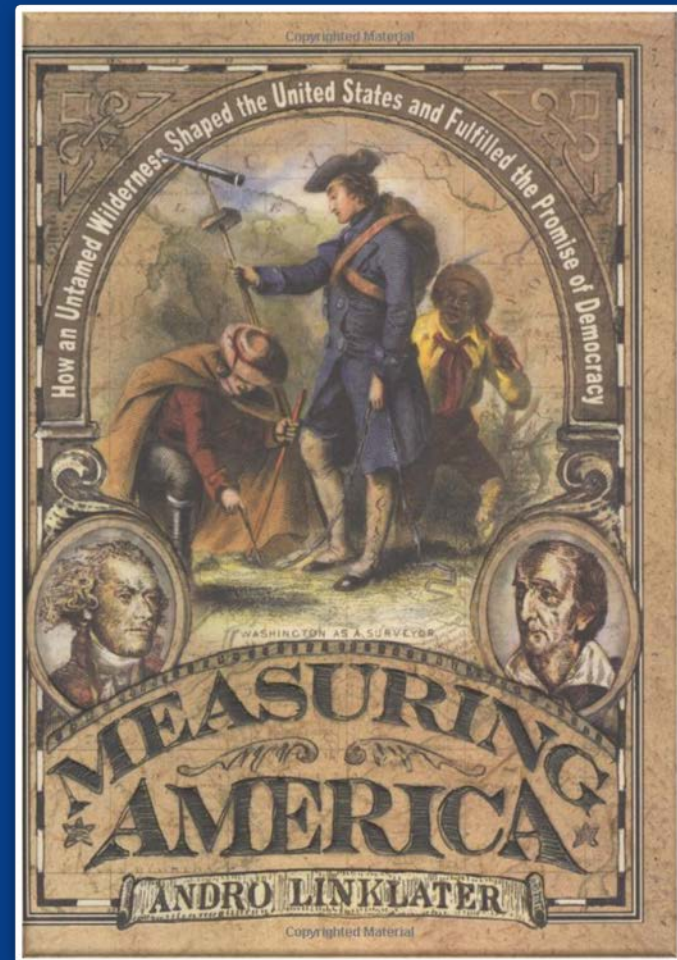
Impact of Surveys on Society

- The public land surveys were the first and are the most basic organizer of space in the United States
- established legal descriptions – defining spatial boundaries and locations – without which the United States government could not create landowners
- imposed a particular spatial frame of reference on virtually all human activities in the United States – it formed part of a democratizing effort (Linklater, Measuring America)

"Immaculate Grid"

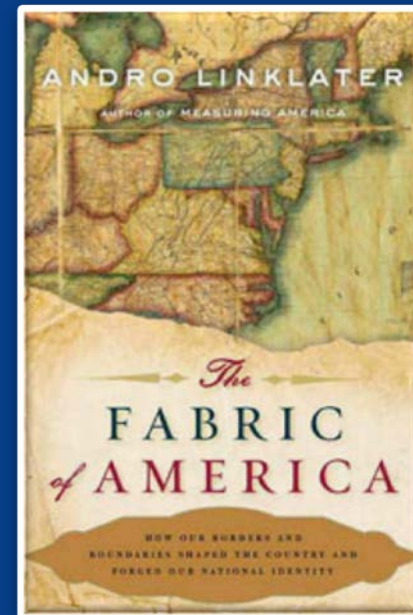
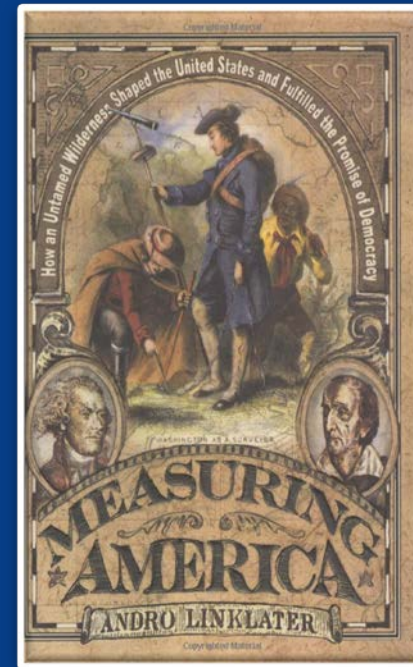


“The beauty of the land survey...was that it made buying simple, whether by squatter, settler or speculator. The system gave every parcel of virgin ground a unique identity, beginning with the township. Within the township, the thirty-six sections were numbered ..., beginning with section 1 in the north-east corner, and continuing first westward then eastward, back and forth, And long before the United States Postal Service ever dreamed of zip codes, every one of these quarter-quarter sections had its own address, as in ¼ South-West, ¼ Section North-West, Section 8, Township 22 North, Range 4 West, Fifth Principal Meridian.”

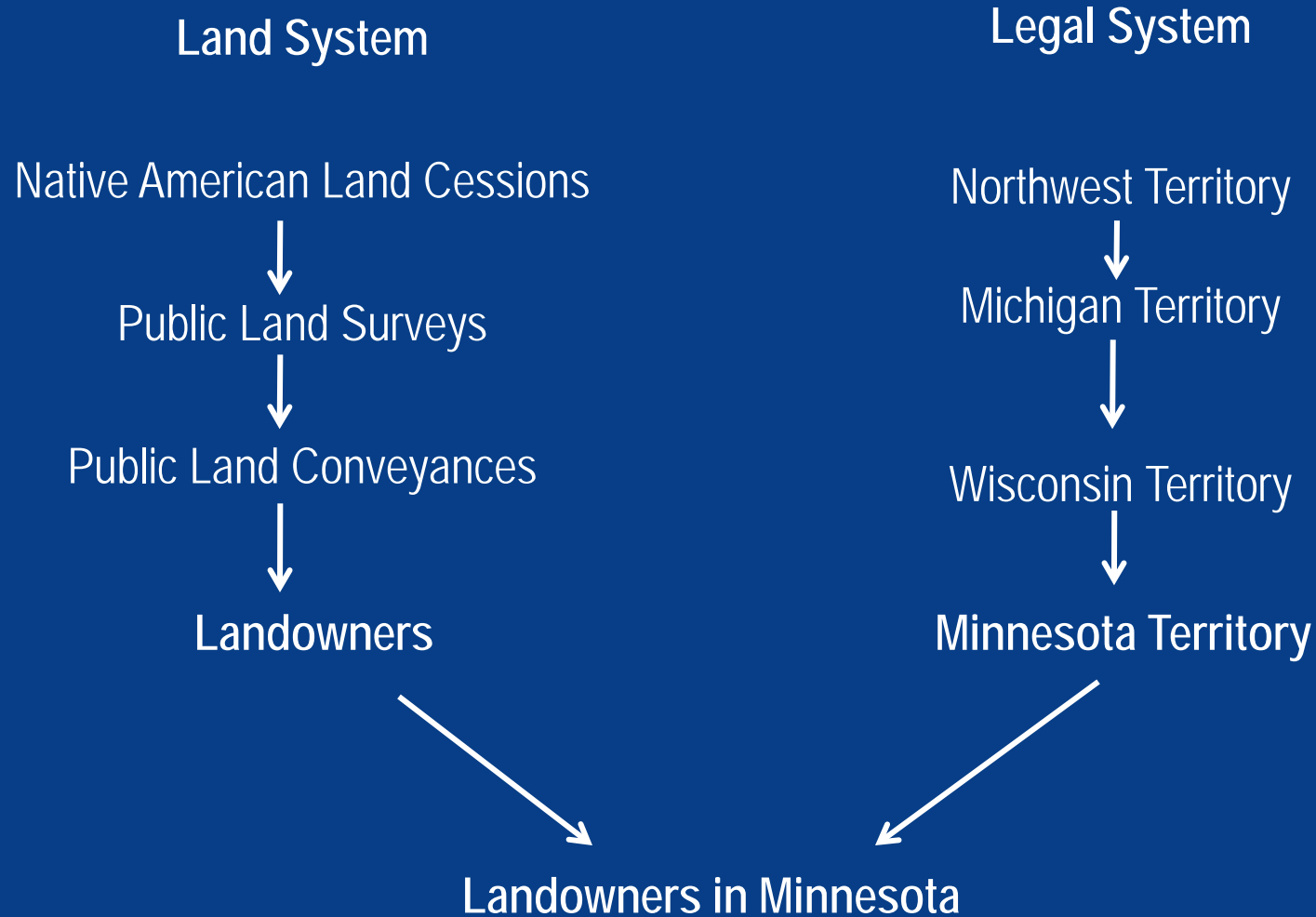


“What drew people from the eastern states and from around the world was the desire for the soil magically transformed from wilderness to property by the act of measurement and mapping”

“The fact that the grid could ... subdivide a continent into minute, graph-paper squares might appear to be simply a triumph of the mathematician's art, but the ease with which it made land available to anyone who went west in search of it had an almost incalculable influence on the development of the American psyche and the American economy”



A Context for the Public Land Surveys in Minnesota



The Major Characteristics of the Rectangular Grid are Well-known

Origins

Land Ordinance, 1785; Land Act, 1796; ...

Preceding event

Indian land cessions

Administrative Structure

General Land Office; Surveyor General of Wisconsin and Iowa 1847-1857; Surveyor General of Minnesota 1858-1908; deputy surveyors under contract

The Major Characteristics of the Rectangular Grid are Well-known

-1-

GENERAL INSTRUCTIONS.

**OFFICE OF THE SURVEYOR GENERAL
OF WISCONSIN AND IOWA,
Dubuque, May 28, 1846.**

"This copy of General Instructions was made from an original volume now in the possession of the National Archives"

**GENERAL INSTRUCTIONS. OFFICE OF THE
SURVEYOR GENERAL
OF WISCONSIN AND IOWA**

"This copy of General Instructions was made from an original volume now in the possession of the National Archives. The field notes indicate they were issued in 1851"

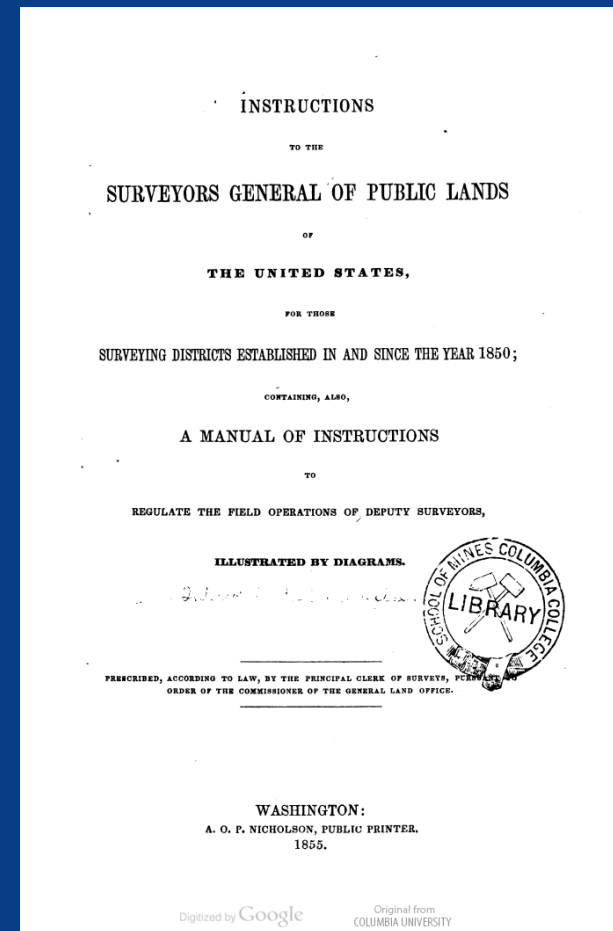
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**INSTRUCTIONS TO THE SURVEYOR
GENERAL OF OREGON; BEING
A MANUAL FOR FIELD OPERATIONS**

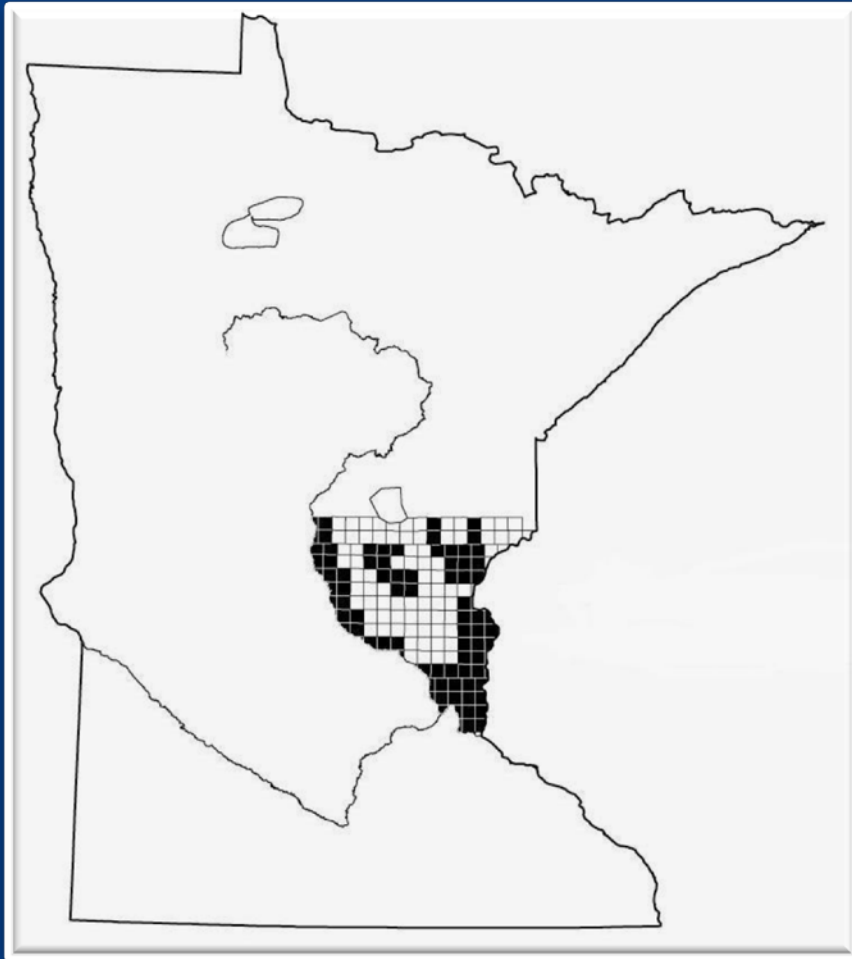
*“this copy of the "Oregon Manual" is
taken from an original volume now in the
possession of the National Archives”*

The Major Characteristics of the Rectangular Grid are Well-known

Instructions to the surveyors general of public lands of the United States : for those surveying districts established in and since the year 1850 : containing also a manual of instructions to regulate the field operations of deputy surveyors / illustrated by diagrams ; prescribed, according to law, by the principal clerk of surveys, pursuant to order of the commissioner of the General Land Office



1846 General Instructions issued by the Surveyor General of Iowa and Wisconsin



1852 - 1908 General Instructions issued by the Commissioner of the General Land Office



Clearly important to me. You?

Instructions – Act May 3, 1862

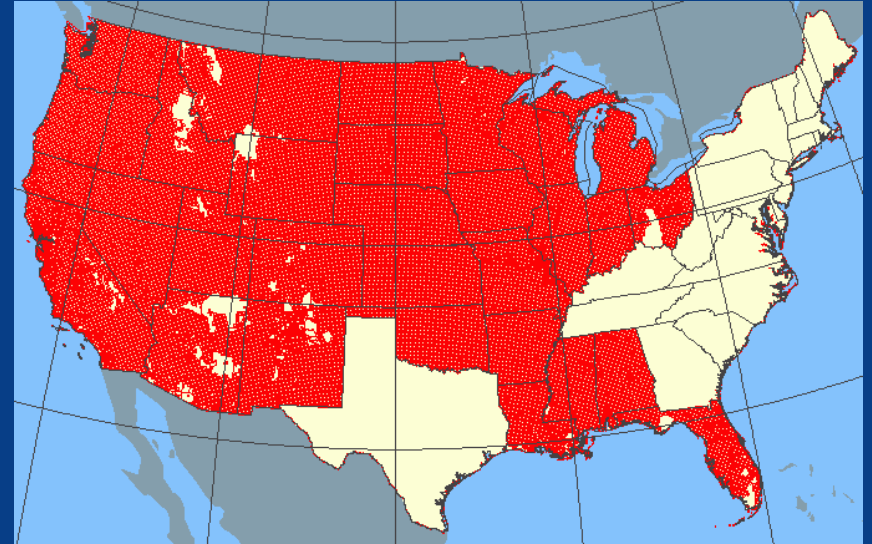
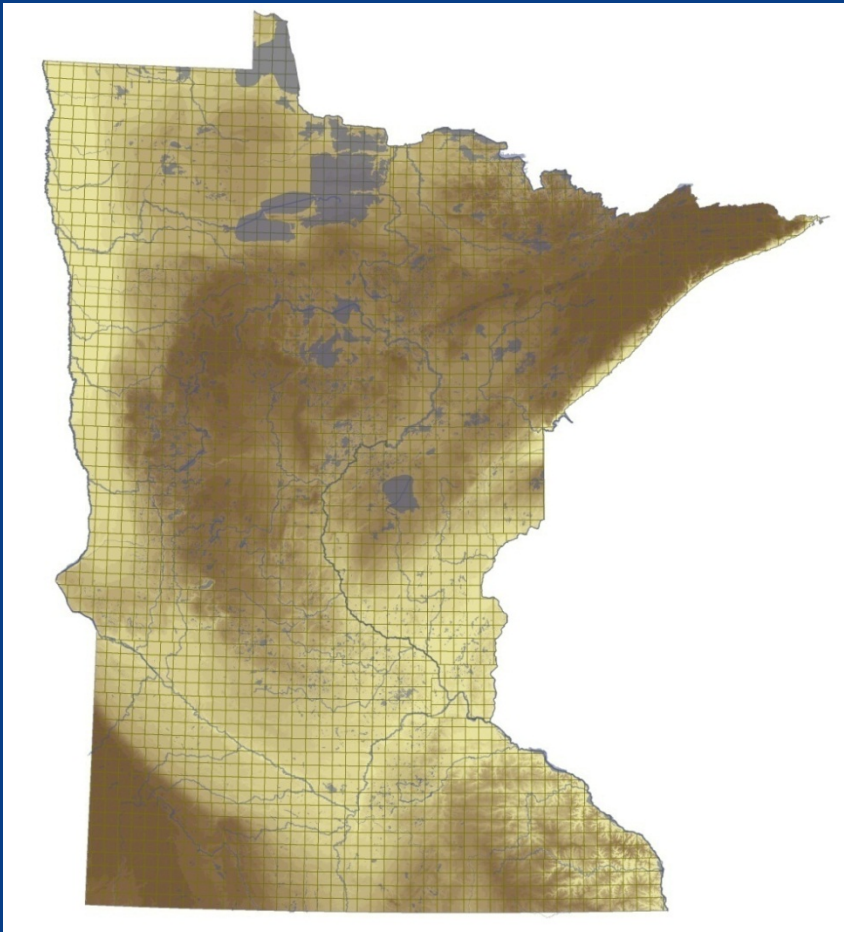
General instructions

- The printed Manual of Instructions relating to the public surveys ... bearing date February twenty-second, eighteen hundred and fifty-five
- The instructions of the Commissioner of the General Land Office

Special instructions of the Surveyor General when not in conflict with above

Where do you find these? How certain are you of their accuracy?

The Major Characteristics of the Rectangular Grid are Well-known



Unplatted land in Minnesota?

Public Land Surveys in Minnesota

For 60 years 1847-1908

- Deputy surveyors under contract with the federal government
- Ran approximately intersecting north-south and east-west lines spaced a mile apart across the land surface of Minnesota
- Established wood, metal, concrete, and earthen monuments at more or less half-mile intervals

Do the statistics matter?

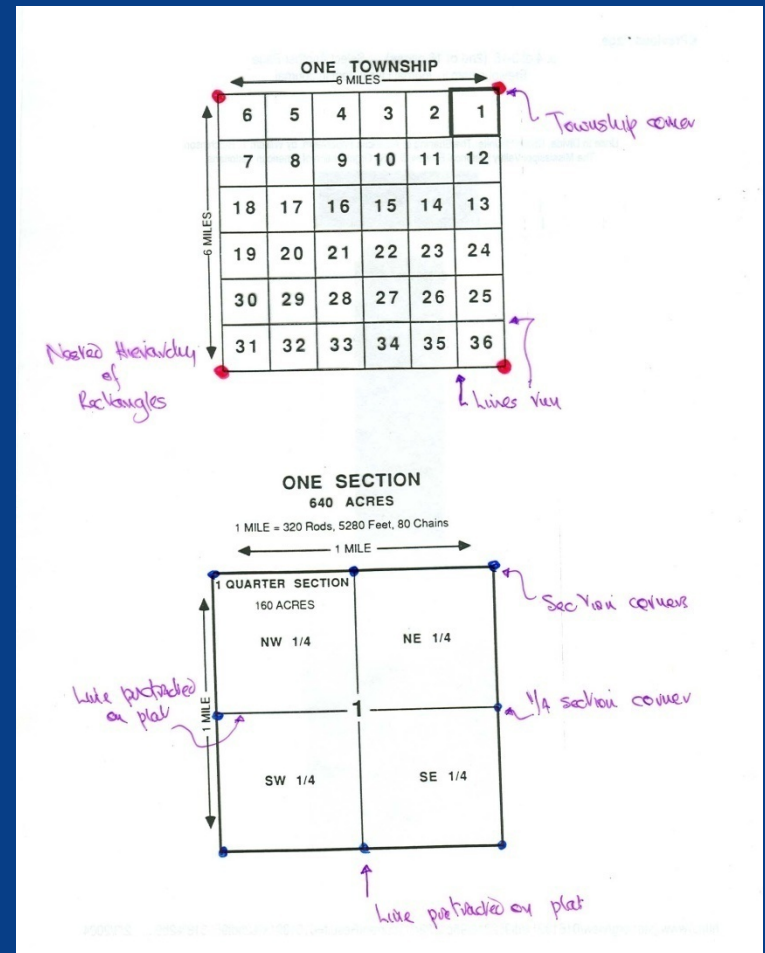


The Major Characteristics of the Rectangular Grid are Well-known

Purpose

To provide a "legal description" of the land the federal government would privatize

- to establish boundaries of a parcel of land to be privatized

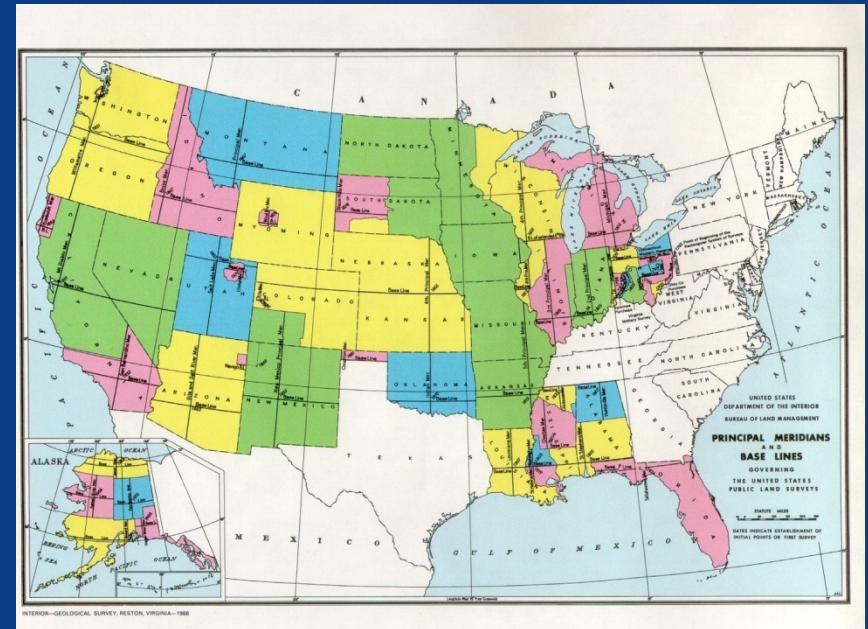


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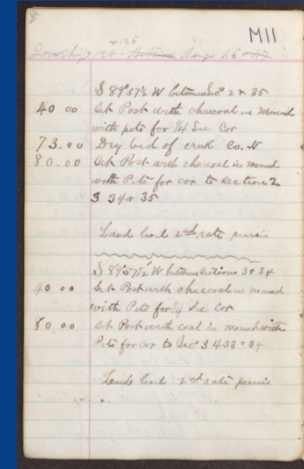
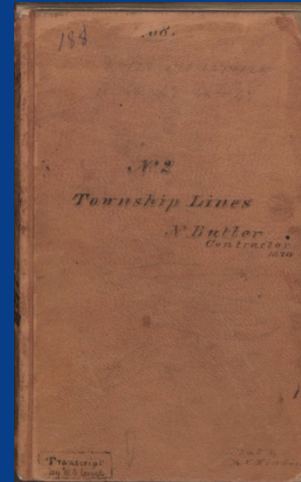
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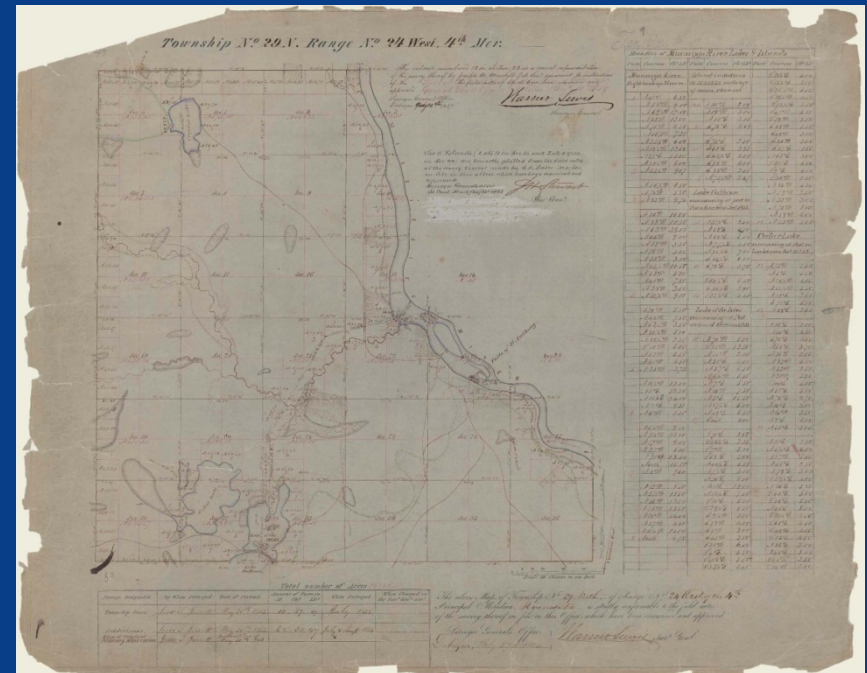
- to establish boundaries of a parcel of land to be privatized
- to establish the location of a parcel of land to be privatized



The Major Characteristics of the Rectangular Grid are Well-known



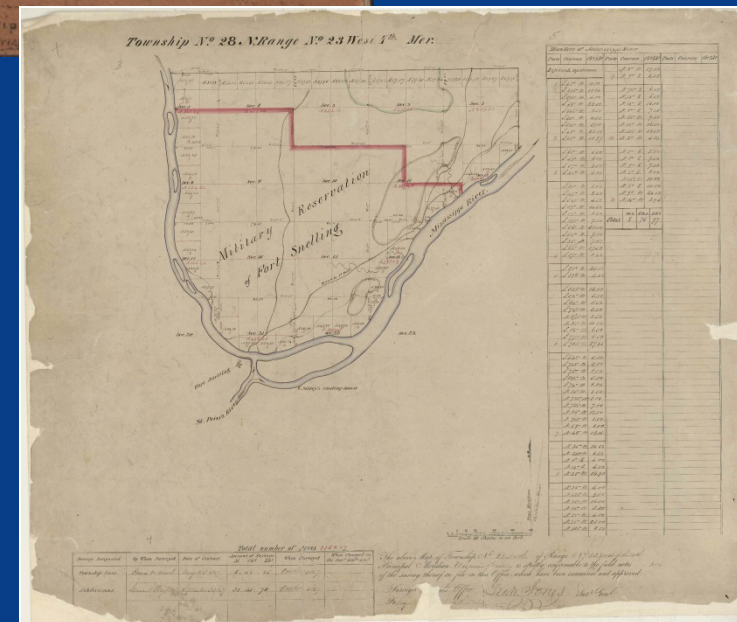
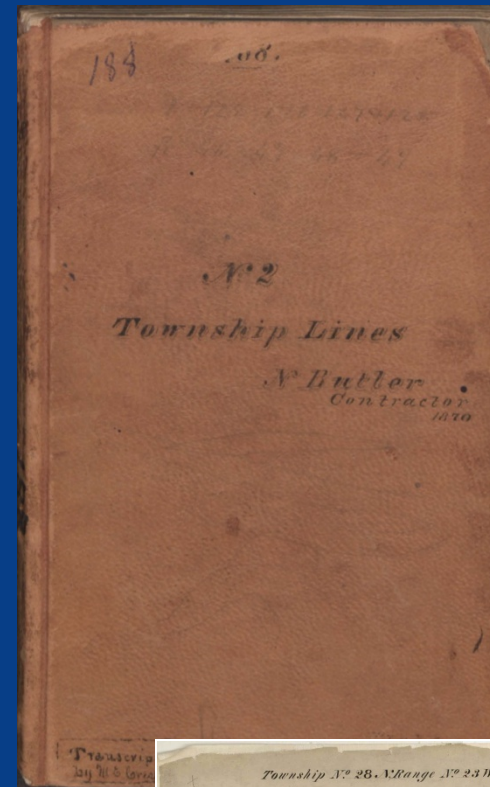
As the land surface was subdivided, and boundaries and location established, an inventory was made of the surface, describing the features that were thought to be relevant to prospective landowners, and township plats were compiled



These well-known characteristics are the outcomes of a surveying process that is not well-known

Anyone interested in the surveys

- usually familiar with a small portion of the surveying process
- that portion giving rise to the particular records with which they are familiar



What do we need to know?

2013 Reconciling the Public Land Survey Process and the Available Records

The true nature of any record – particularly its limitation – can only be appreciated by looking at it in context of the entire public land surveying process

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“particular records are extremely valuable for any reconstruction efforts, treating them anecdotally, that is, in their singularity – as a piece of information with little relationship to any other record containing other information – may be quite misleading”

The surveying process produced a variety of records during the 60 years the surveys were being carried out in Minnesota

Some of these records have obvious importance to land surveyors, who have both a legal obligation to use them in their work under federal and Minnesota law and a moral obligation under the code of professional conduct and best practices as well as individual ethical behavior, but all of them deserve scrutiny

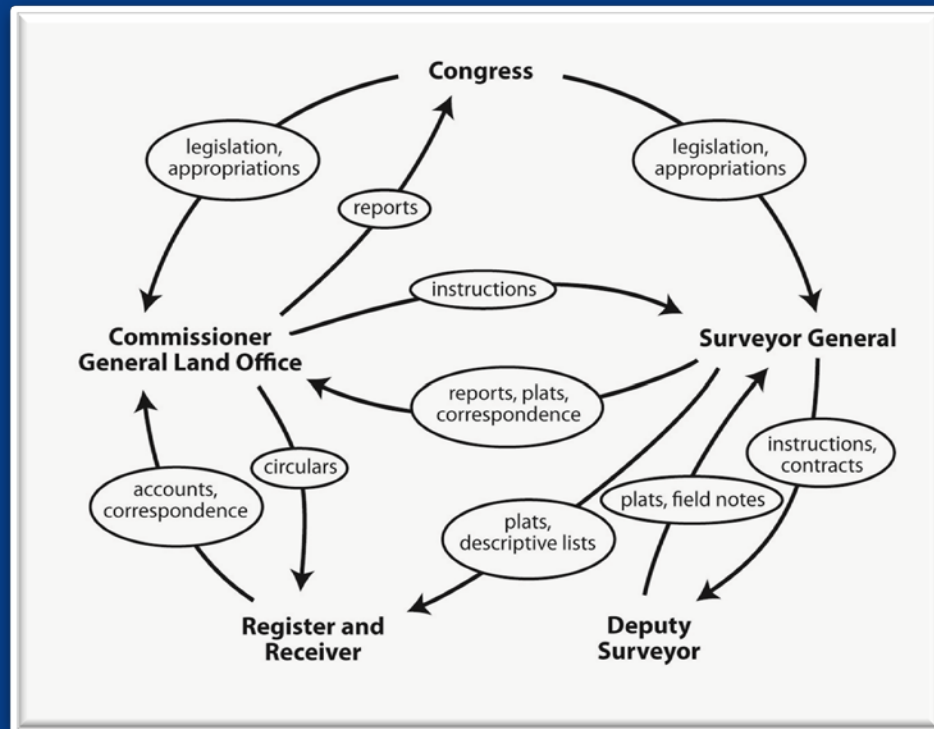
All reflect how the General Land Office administered the surveys and what records were made and kept

Treating them anecdotally – as information with little relationship to any other records containing other information – may be quite misleading

All concern individual deputies each

- working under the provisions of a particular contract awarded at a particular date
- following specific instructions and working in a particular area
- work that eventually resulted in field notes – describing what they had done

The information contained in a document in one record collection, almost certainly is related to, and may depend upon, some other pieces of information in another document in another record collection



Many of the surveying records for Minnesota are not readily accessible

- The records, 1847 -1858, are stored in the Iowa State Historical Society Library in Des Moines IA
- The records 1857-1908 are stored in the Minnesota History Center in St. Paul
- An unknown but probably large volume of records, 1847-1908 are stored in the National Archives in Washington DC.

Only those in the Minnesota History Center are well-indexed

What use are these records?

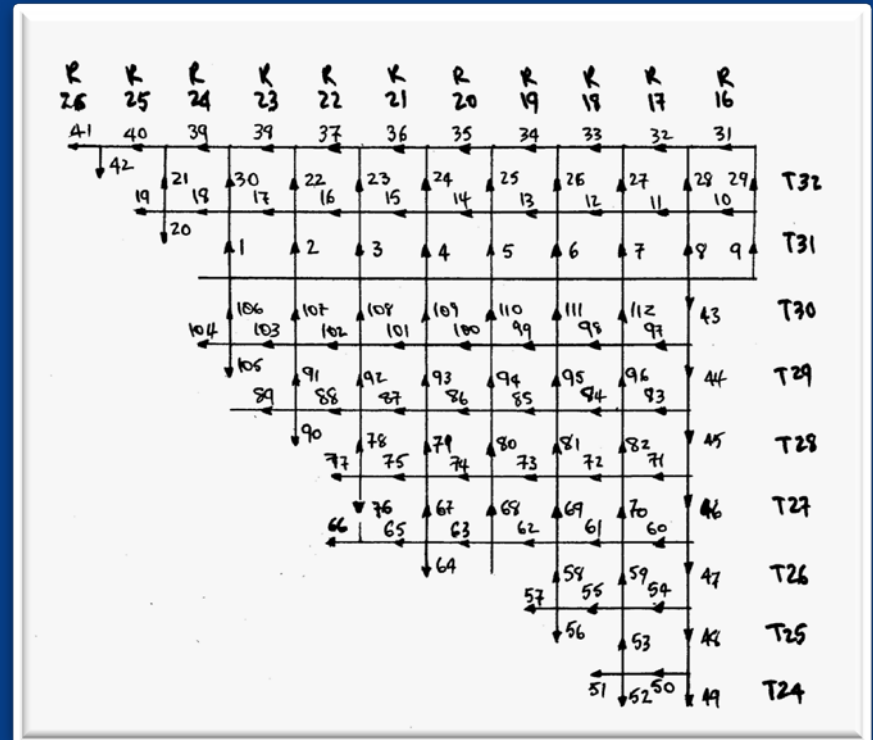
Deputies operated at half-mile intervals over a variable area

James Marsh ran 400 miles in one contract

Does the size of the area over which a deputy ran his lines matter?

How about the direction?

The field notes describe what he did and how, do you care why?



An Inventory of the Public Land Surveys Records for Minnesota: The Special Instructions

- to find and categorize the instructions given to deputies – a subset of the records kept by the General Land Office
- to examine the impediments to creating digital images of these records – modernize and preserve

Are the special instructions necessary?

You know what the deputy did?

Do you care why?



Anyone interested in the public land surveys needs to understand

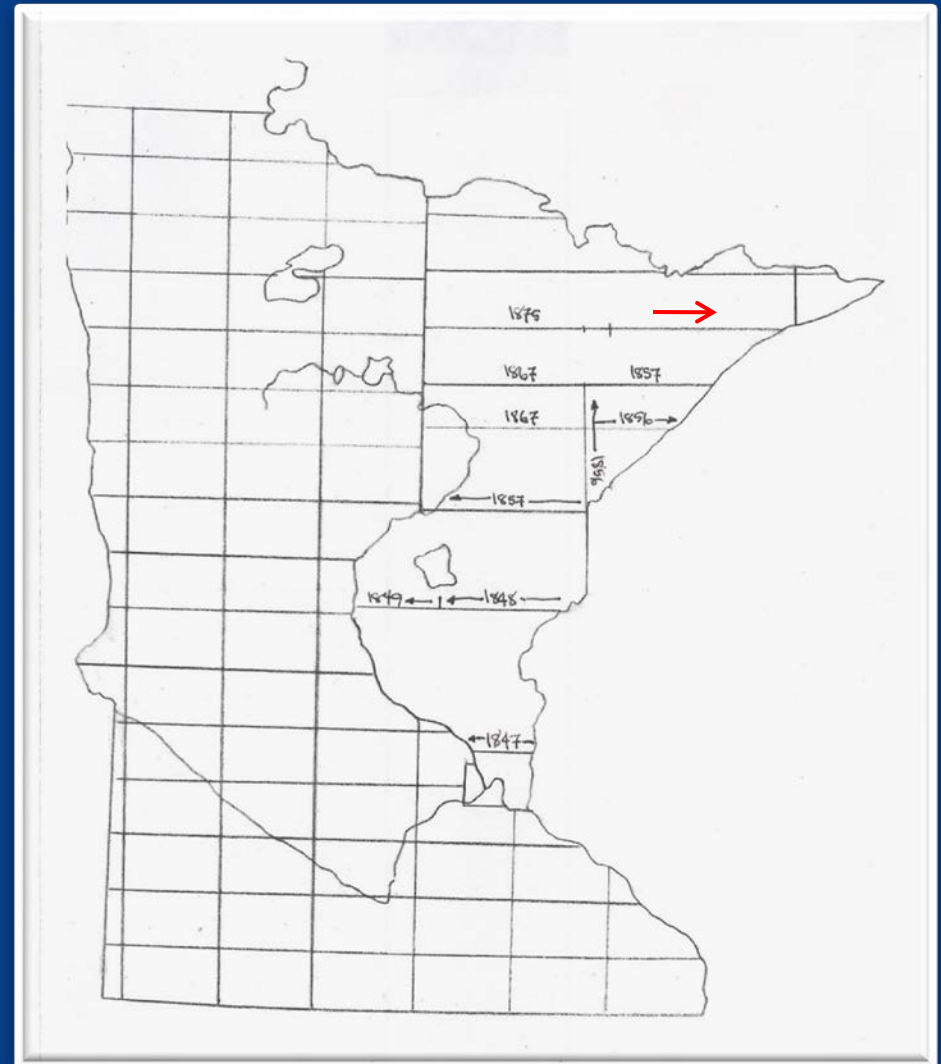
- The surveying process – only anecdotal interest to the modern land surveyor
- The records that were produced – only a few of which may be relevant to the modern land surveyor
- The way in which the records were preserved for use in the Surveyor General's office
- The way in which the records were preserved by the State of Minnesota for subsequent use - more important to understand now we have access to digital images of some of them and they become more widely accessible and used by non-surveyors

But how much “understanding” is necessary?

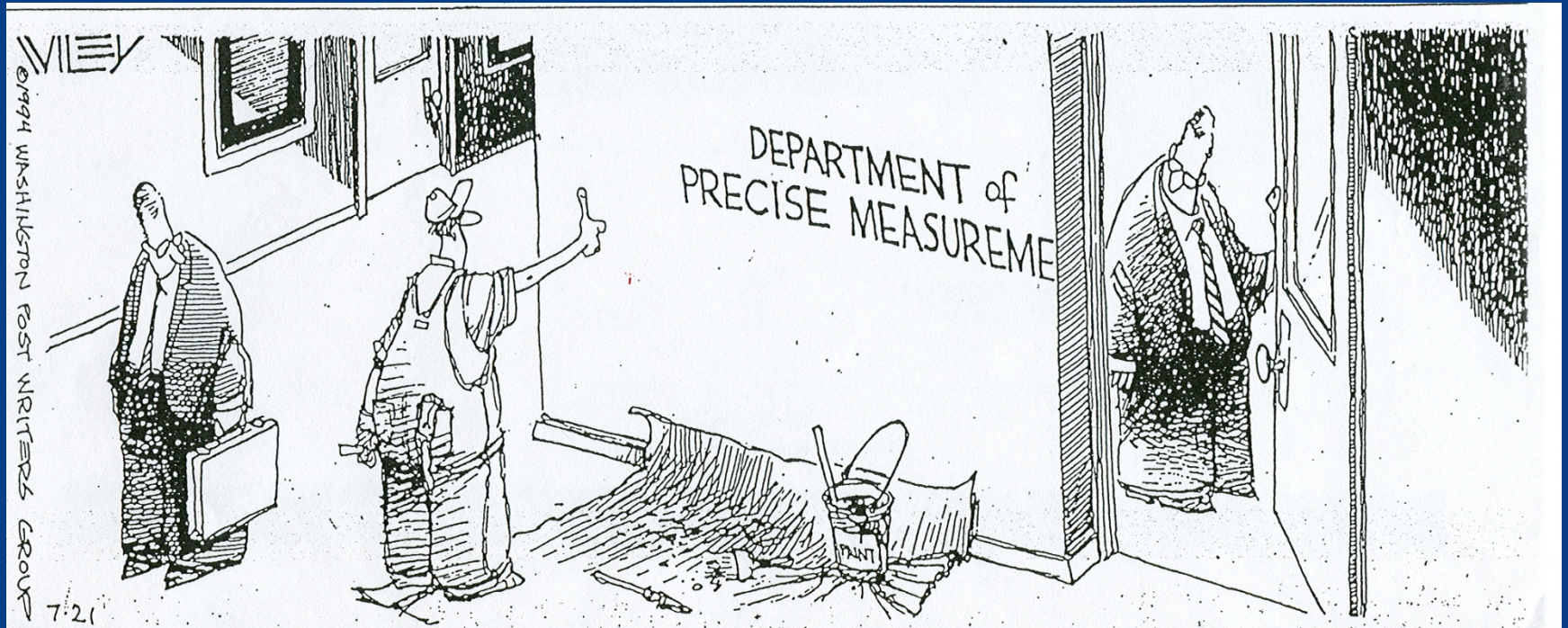
Should land surveyors know

- Why standard parallels were spaced 24 miles apart
- Why correction lines were spaced at various distances apart

Will it make you better surveyors?



Some things the surveyor cannot see because of a detailed (short sighted) perspective



Some things a geographer cannot see because of a long sighted perspective

Should you know about the sequence of lines?

- Principal Meridian and Baseline
- Correction Lines, Standard Parallel, Guide Meridians
- Township Exteriors
- Subdivisions

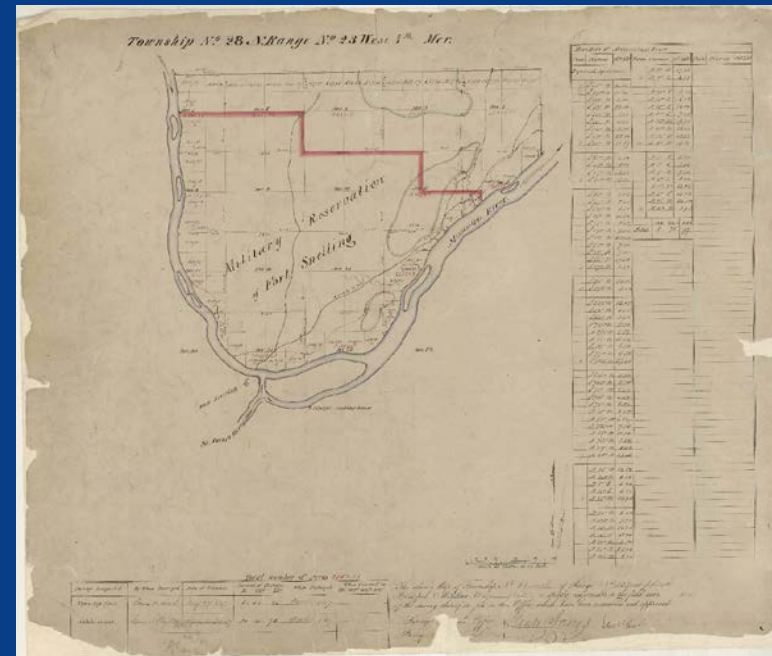
Under what instructions the lines were run?

In which direction were the lines run?

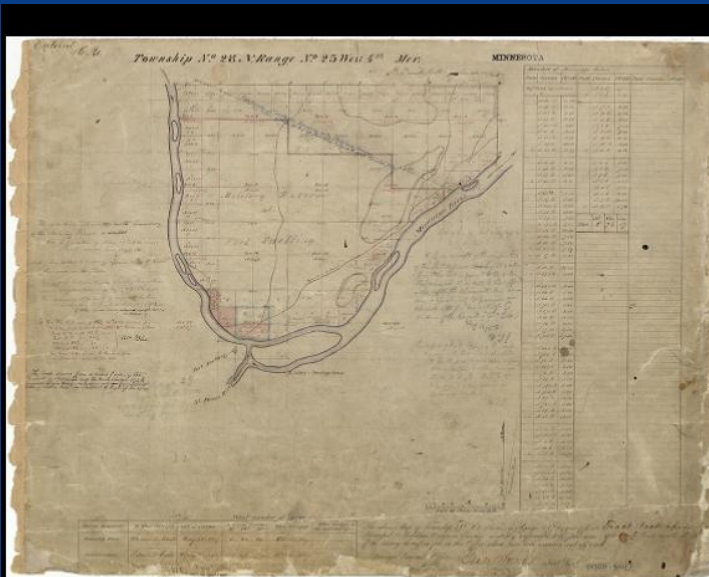
Do the field notes tell you everything you need to know?

"Original" Plat

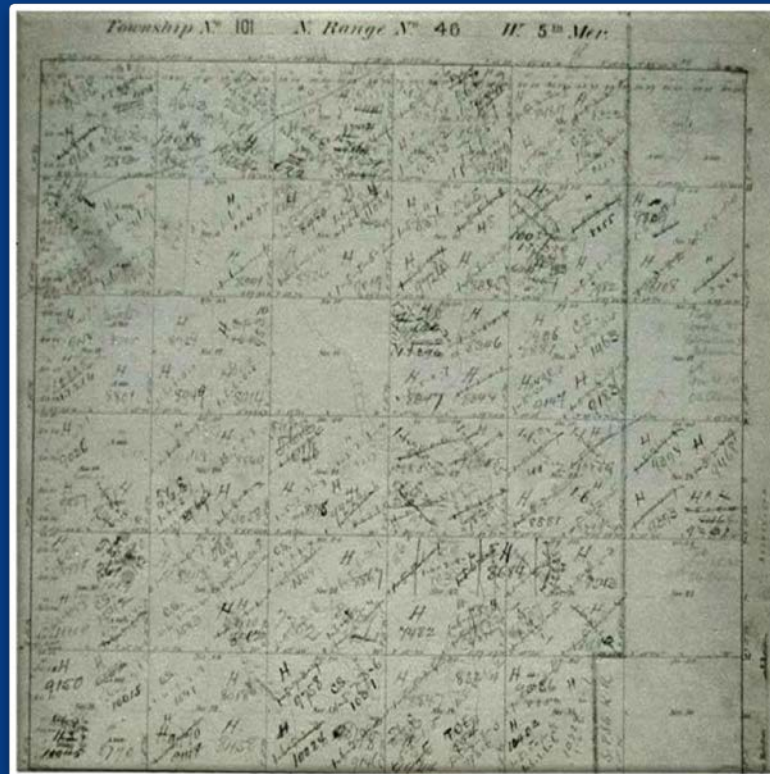
Should you know the differences between the three township plats?



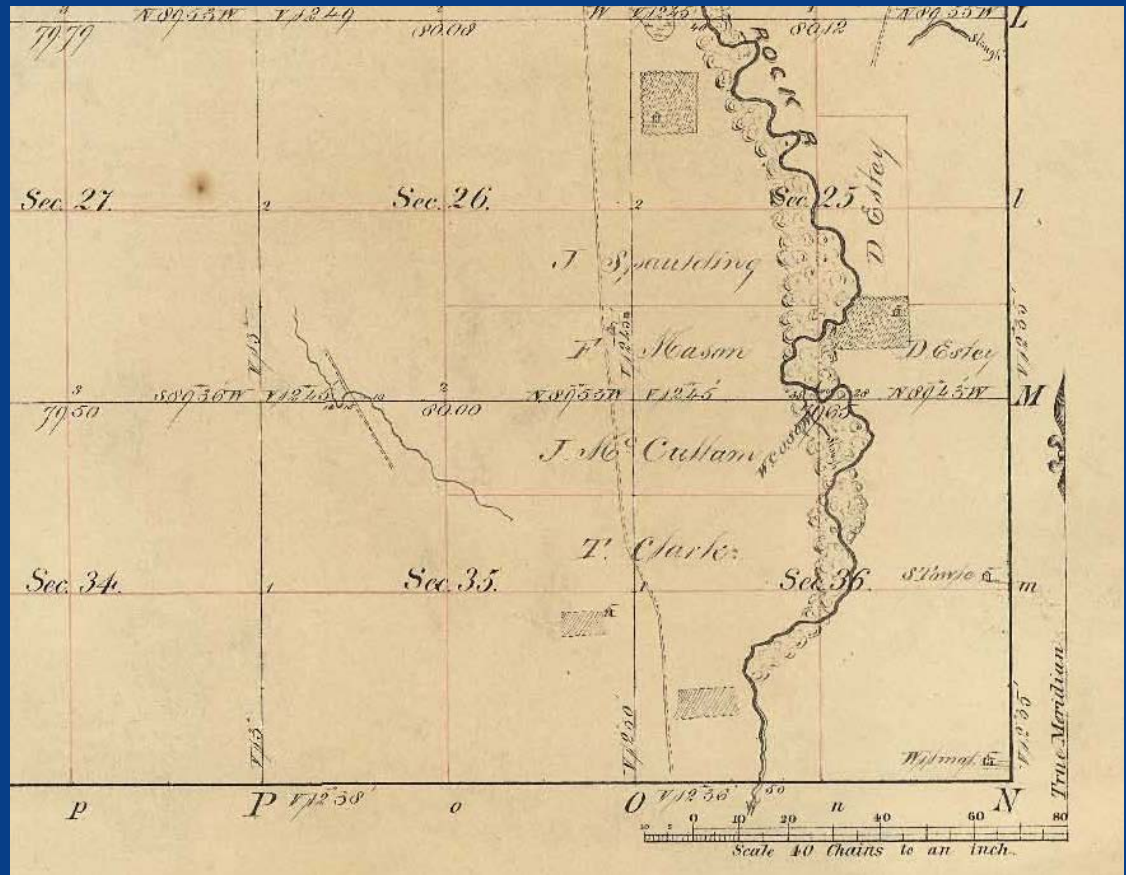
Commissioner's Plat



The "Missing" Receiver's Plat



Why do some township plats have letters around the margins?



Surveying Process

Each year Congress made an annual appropriation for surveying the public lands for the following fiscal year July 1 – June 30

Commissioner of the GLO allocated portion to each surveying district and gave directions – unfortunately called “annual instructions” – for the surveys

Surveyor General sent quarterly and annual reports to the Commissioner

Surveyor General sent a variety of documents to the Commissioner

- relating to the work of the deputies
 - contracts, oaths, bonds
 - instructions
 - field notes
 - maps including plats and diagrams
 - deputies' accounts
- relating to variety of other issues

Surveyor General sends commission to individual (discontinued 1886)



Individual accepts commission in writing, pledges oath of allegiance, posts bond



Surveyor General awards contracts, sends contract to Washington DC for approval, gives deputy instructions, any relevant maps



Correspondence between Surveyor General and Deputy in the field



Deputy completes fieldwork, returns field notes and annotated diagrams to Surveyor General

Standard lines



Notes transcribed, checked, diagrams drafted



Field notes and Account of Deputy sent to Washington D.C.

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**Standard lines
Exteriors**

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Field notes and Account of Deputy sent to Washington D.C.

Standard lines
Exteriors
Subdivisions



Plats and descriptive sheets compiled, plats, field notes and subdividing deputy's accounts sent to Washington DC, plats and descriptive lists sent to local land district office



Subdivision field notes compiled into volumes

So, there were possibly three surveys in the same area;

- Standard line
- Township Exteriors
- Subdivisions

Starting with, interwoven with, and ending with – the dreaded office work

Plats and descriptive sheets compiled, plats, field notes and subdividing deputy's accounts sent to Washington DC, plats and descriptive lists sent to local land district office



Subdivision field notes compiled into volumes*

* Some volumes of exterior field notes contain the work of several deputies

Contract – Useful? Location?

11

MINNESOTA HISTORICAL SOCIETY
Minnesota State Archives

U.S. SURVEYOR GENERAL OF MINNESOTA
An Inventory of Its Contracts for Surveys

OVERVIEW OF THE RECORDS

Agency: United States. Office of Surveyor General of Minnesota.

Series Title: Contracts for surveys,

Dates: 1857-1907.

Abstract: Contracts between the surveyor general and deputy surveyors for the survey of specified tracts of public land in Minnesota.

Quantity: 1.4 cu. ft. (10 folders and 2 v. in 1 box and 1 partial box).

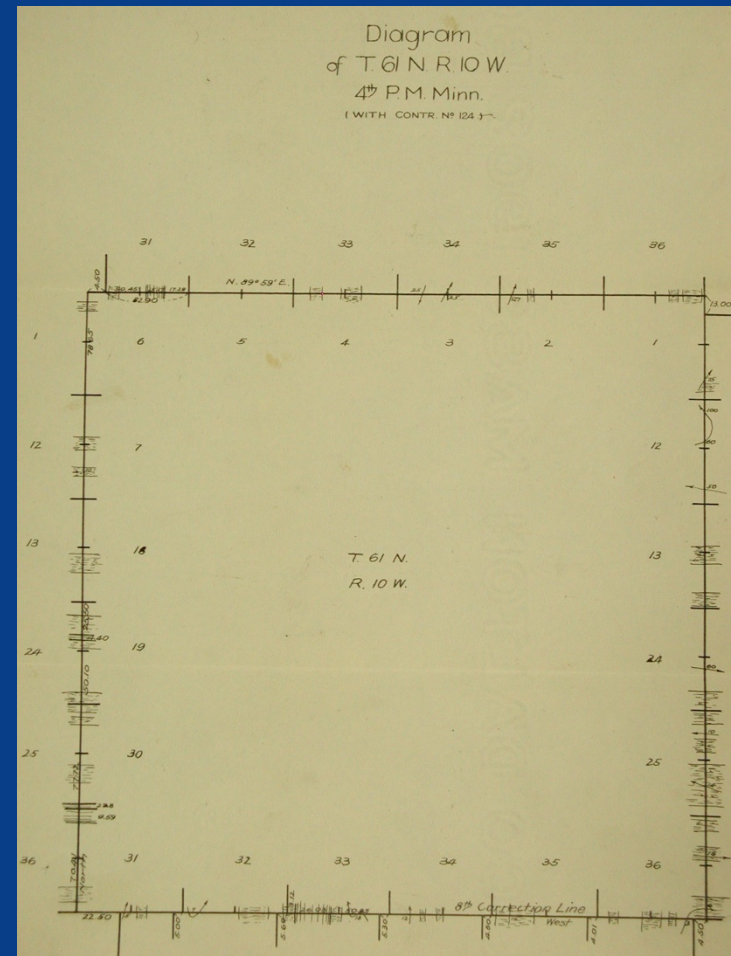
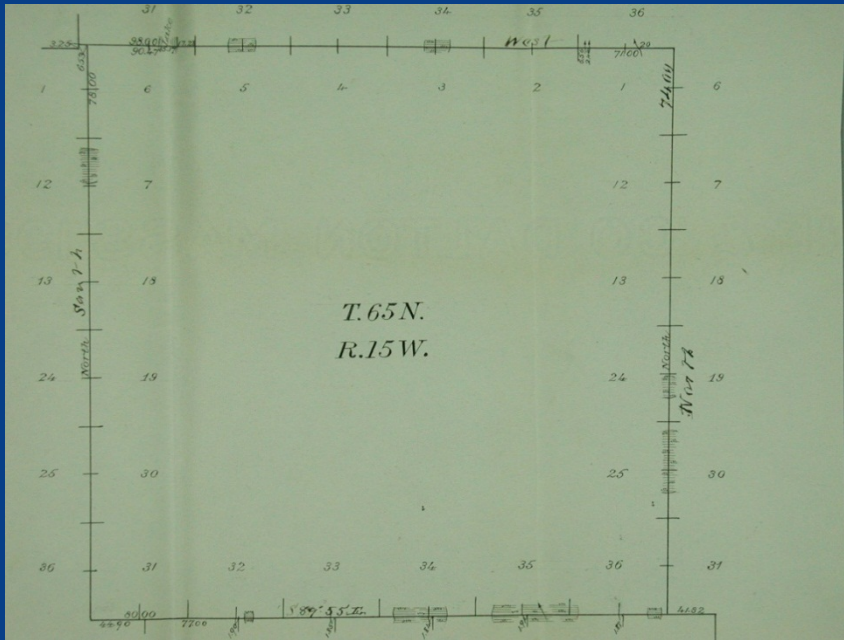
Location: See Contents List for box locations.

CONTRACT.

This Agreement, made this Thirtieth day of June
by and between Jacob H. Stewart, Surveyor-General of the United States,
Minnesota, acting for and in behalf of the United States, of the one part,
George P. Hamilton, deputy surveyor, of the other part, (a Bond for the performance of this and other contracts having been executed by the said George P. Hamilton deputy surveyor, as principal, and Eugene P. Powers and William A. Keenan, as sureties, on the Second day of June, 1881.)

Witnesseth, That the said George P. Hamilton, for and in consideration of the conditions, terms, provisions, and covenants hereinafter expressed, and according to the true intent and meaning of the same, doth hereby covenant and agree with the said J. H. Stewart, in his capacity as Surveyor-General, that he, the said George P. Hamilton, in his own proper person, with the aid of such compassmen, chainmen, axmen, flag-bearers and others, as may be necessary, in strict conformity with the laws of the United States, the printed manual of surveying instructions, and other surveying instructions issued by the Commissioner of the General Land Office, and with such special instructions as he may receive from the said Surveyor-General in conformity therewith, (all of said instructions being hereby incorporated with and made a part of this contract,) will well, truly, and faithfully survey, mark, and establish The 10th Correction Line from the 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th, 101st, 102nd, 103rd, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th, 115th, 116th, 117th, 118th, 119th, 120th, 121st, 122nd, 123rd, 124th, 125th, 126th, 127th, 128th, 129th, 130th, 131st, 132nd, 133rd, 134th, 135th, 136th, 137th, 138th, 139th, 140th, 141st, 142nd, 143rd, 144th, 145th, 146th, 147th, 148th, 149th, 150th, 151st, 152nd, 153rd, 154th, 155th, 156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211st, 212nd, 213rd, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 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1077th, 1078

Township Exteriors diagram Relevance to the Surveying Process? Relevance to You ?



Surveying Records in Minnesota History Collections

United States. Office of Surveyor General of Minnesota

Letters Received and Letters Sent 1854-1908

- Letters Received, 1857-1907
- Letters Sent, 1854-1908

Land survey field notes, 1848-1907

Land survey field notes, 1848-1907

Land survey plats, 1847-2011 (microfiche copies)

Miscellaneous maps and lists, undated and 1850-1914 ("the actual provenance of many of them is unknown")

Plats of township boundaries, 1857-1907

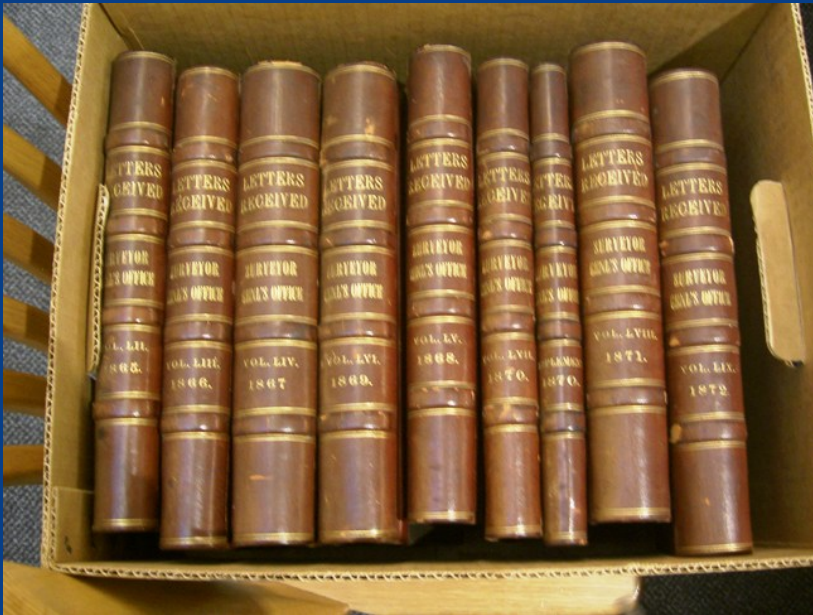
Land survey plats: Worksheets

Descriptive lists of survey posts, 1849-1907

Letters Sent



Letters Received



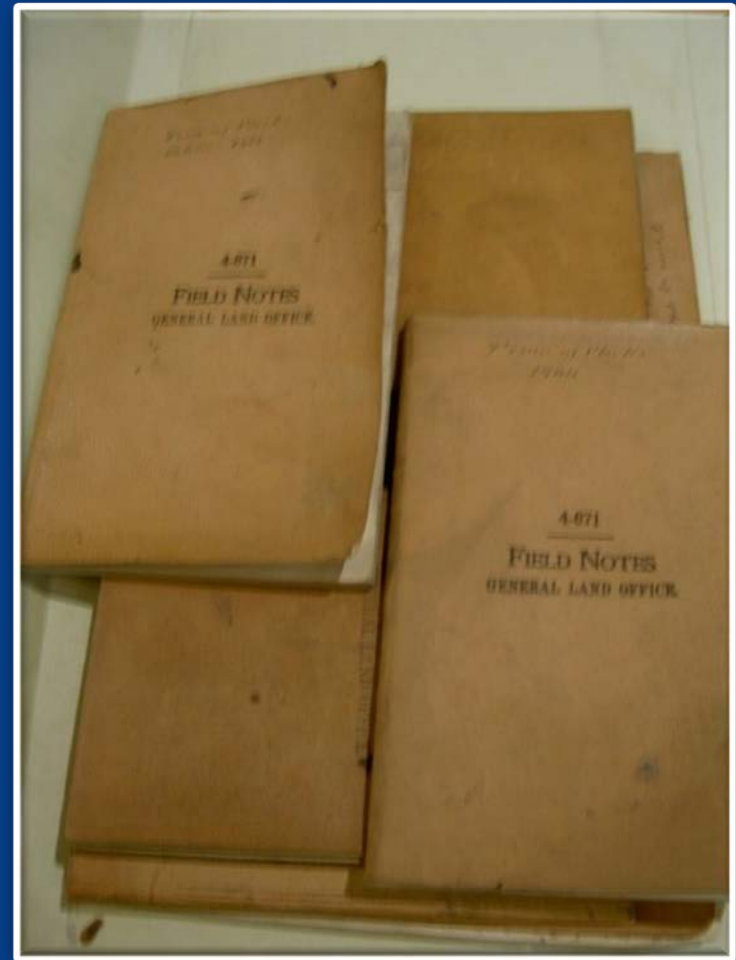
Field Notebooks

Described what the deputy surveyor did and what he saw

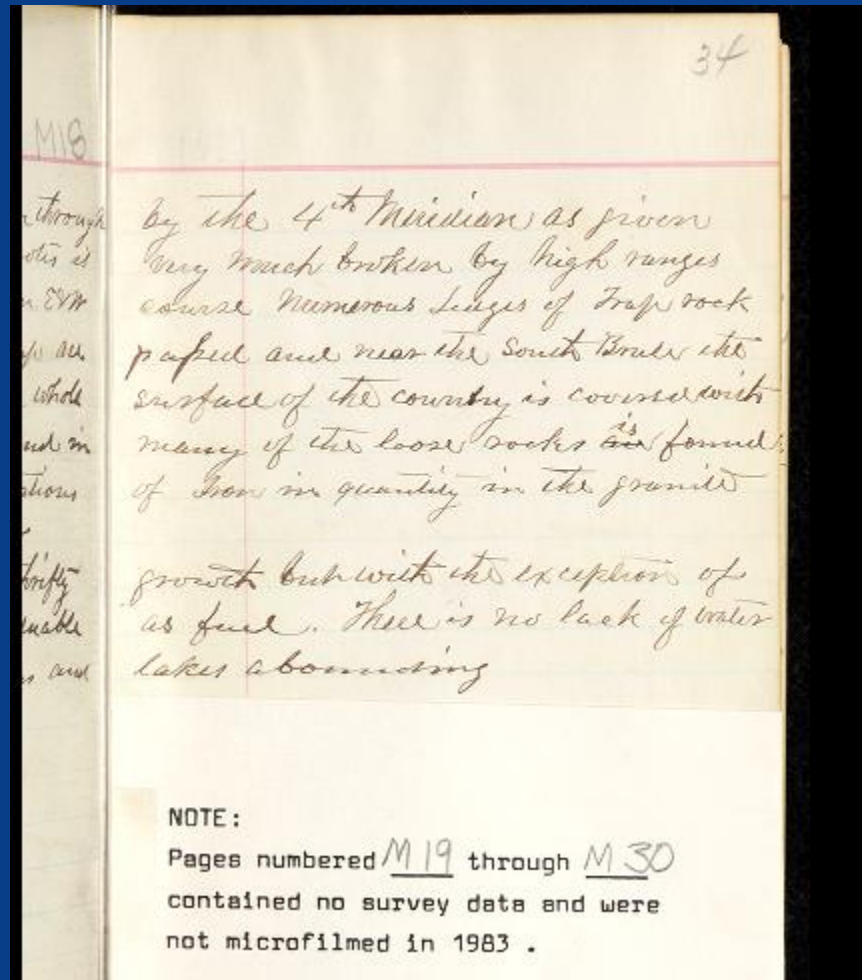
Raw data from which the plats were drawn and descriptive lists made

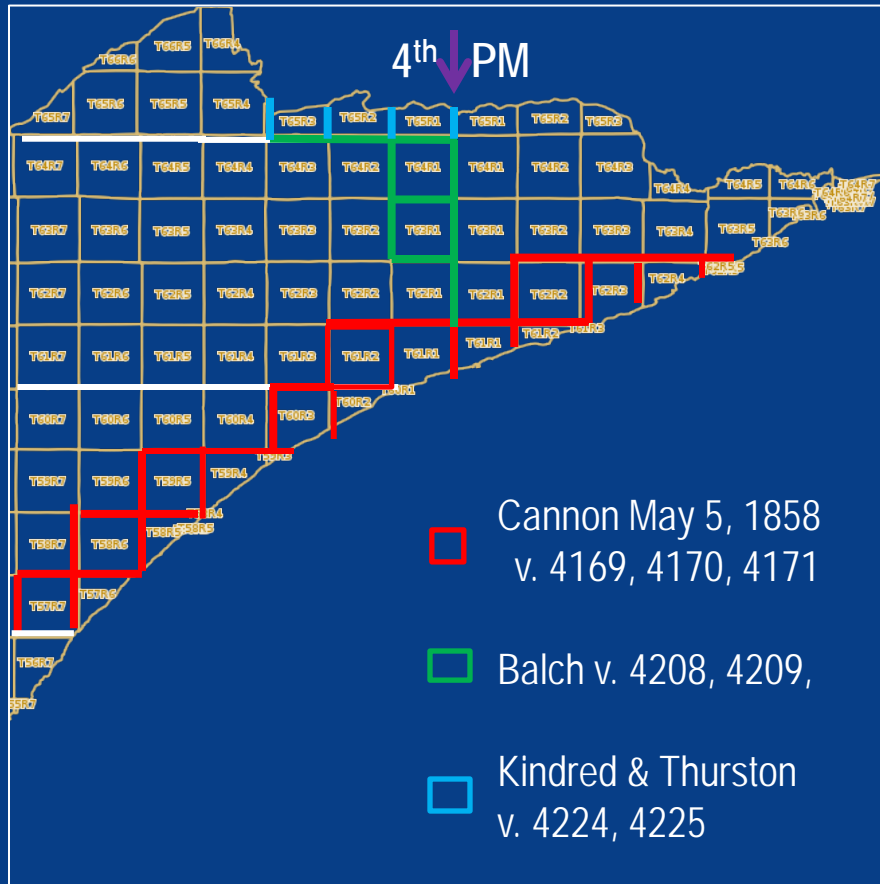
Answers question "How did the deputy carry out his work?"

Does it matter why?

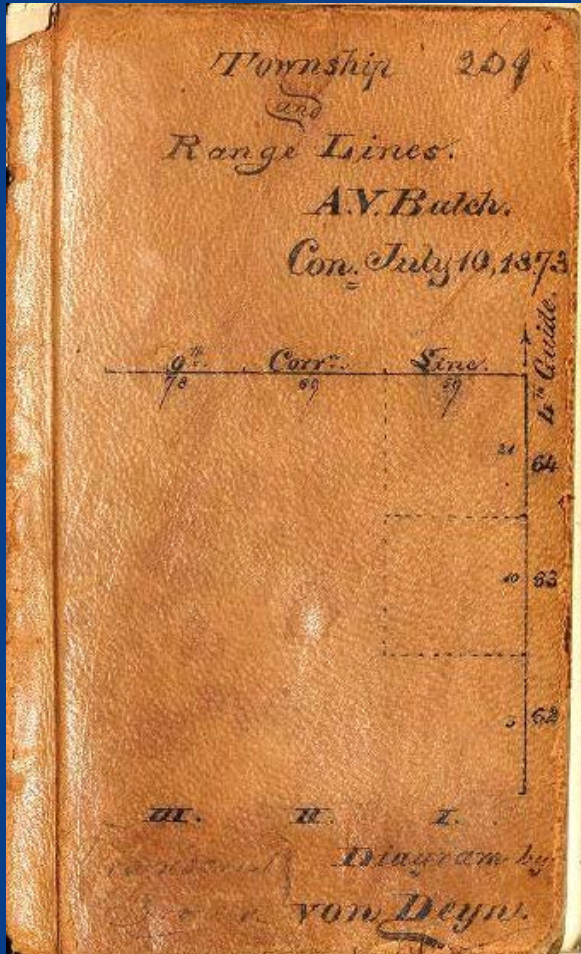


Do such notations as these in the field notes worry you?





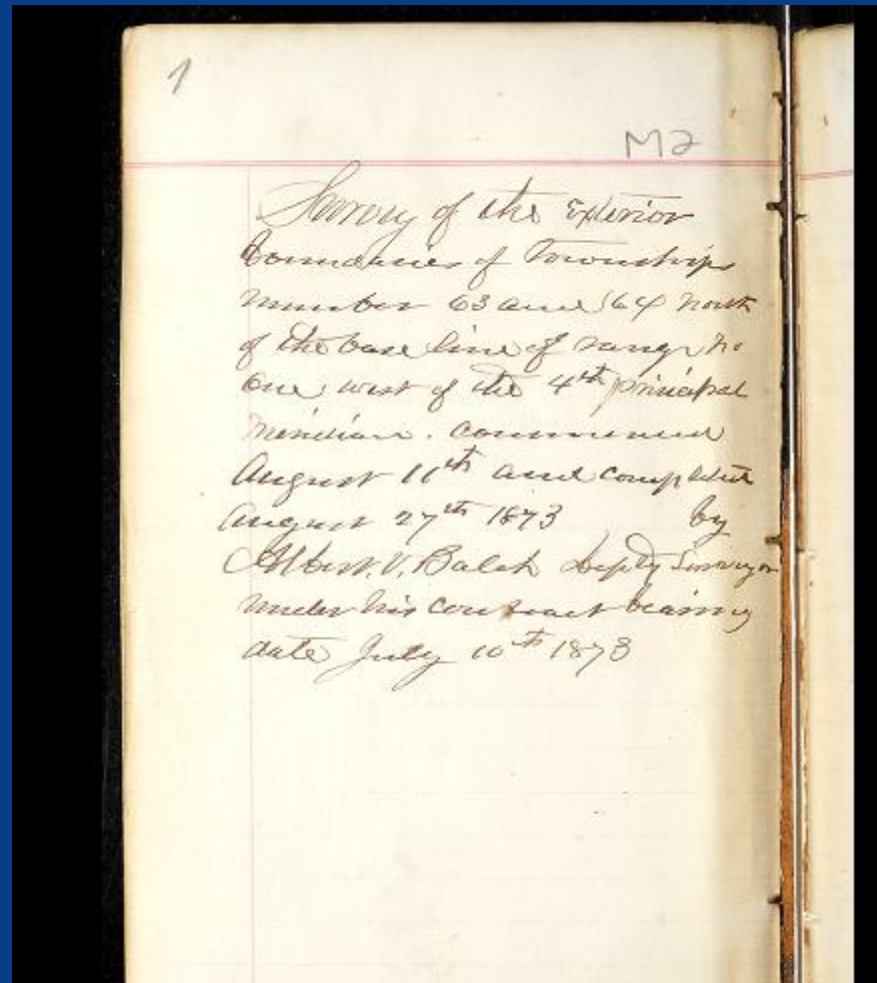
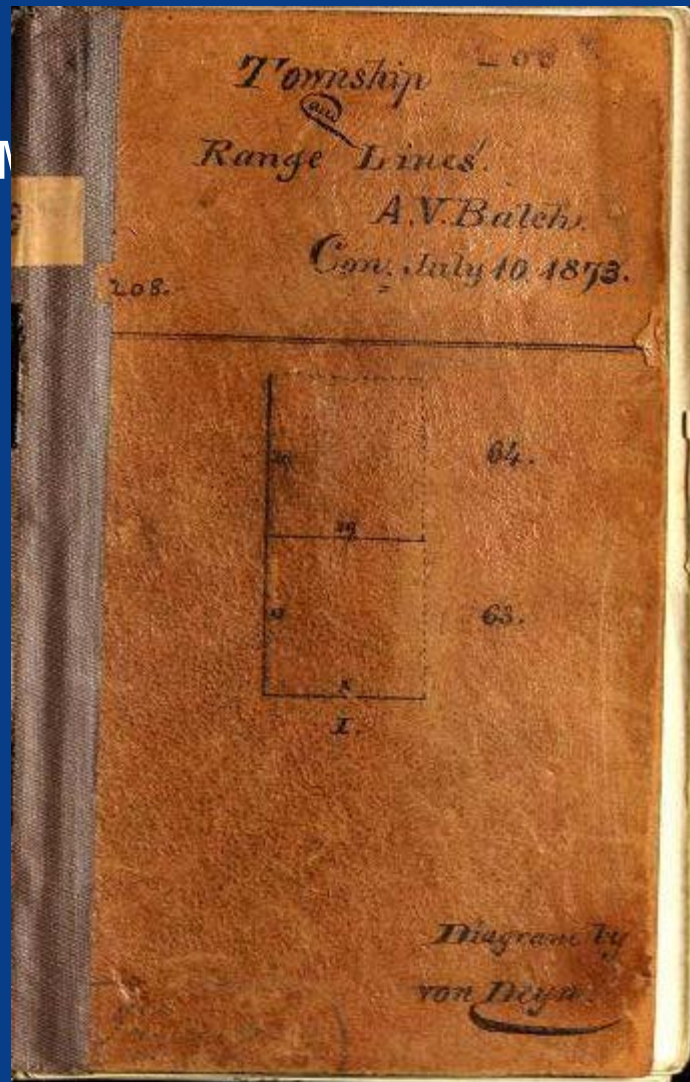
Albert V. Balch v.4209



M2

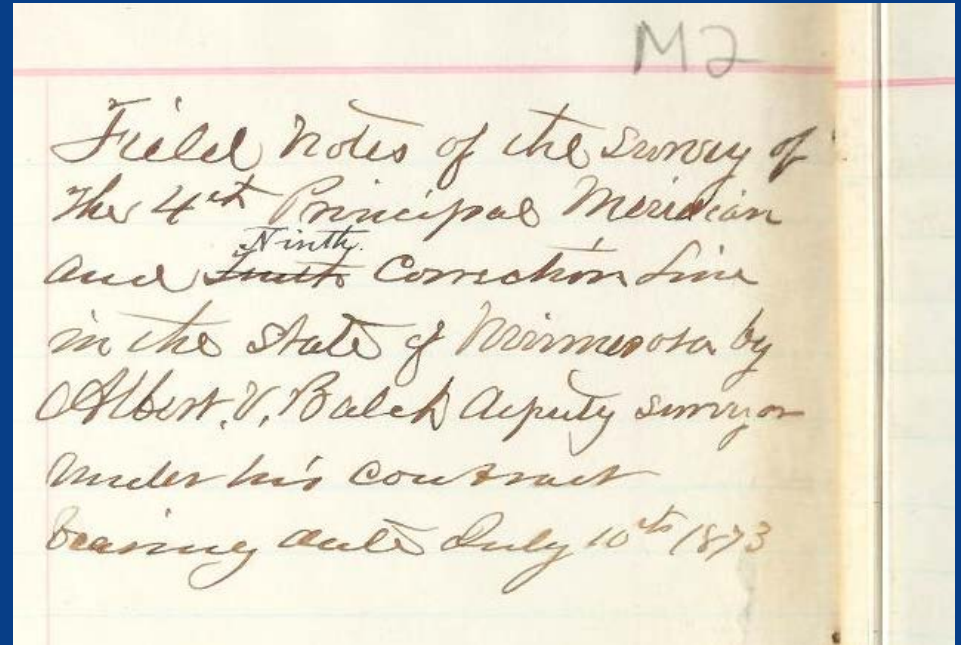
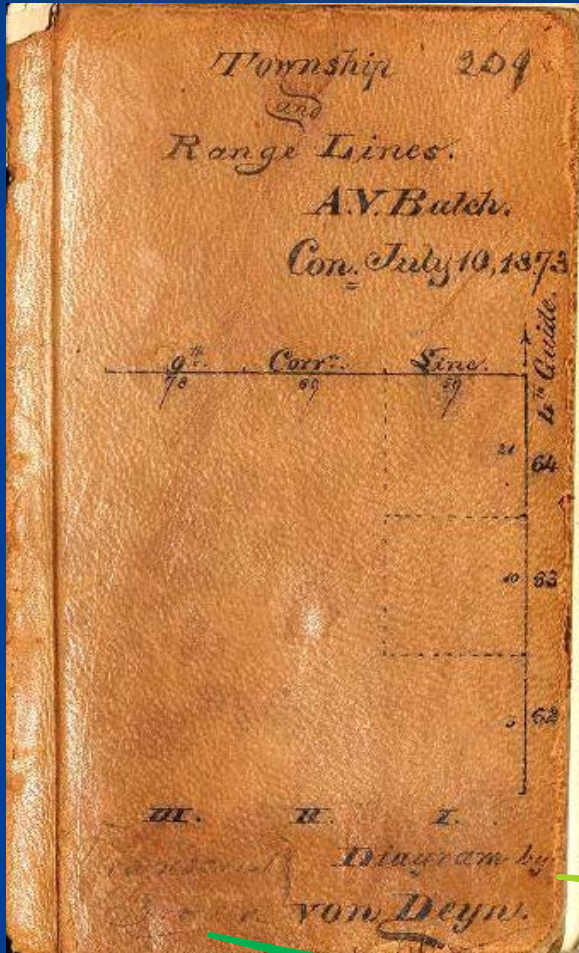
Field notes of the Survey of
The 4th Principal Meridian
and ^{Ninth} ~~South~~ Correction Line
in the State of Wisconsin by
Albert V. Balch Deputy Surveyor
Under his Contract
bearing date July 10th 1873

Albert V. Balch v.4208 (Monday Aug 11 – Saturday Aug. 27, 1873)



Made by deputy? – page #

v.4209 (Monday July 14 -Thursday July 8, 1873)



Made by deputy? – no page #

Diagram by von Deyn

Transcript Brown

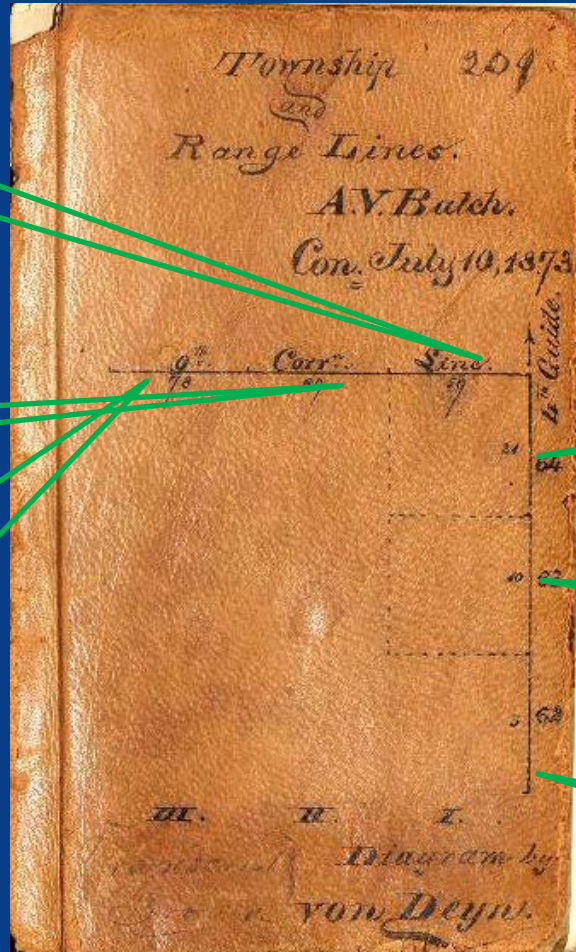
v.4209

p.59-68 M July 28-W July 30

p.68 T. J. 31 and F A.1 and S.A.2
being cloudy did not work

p.69-76 M Aug 4-T Aug 5

p.78-86 W Aug 6-Th Aug 7



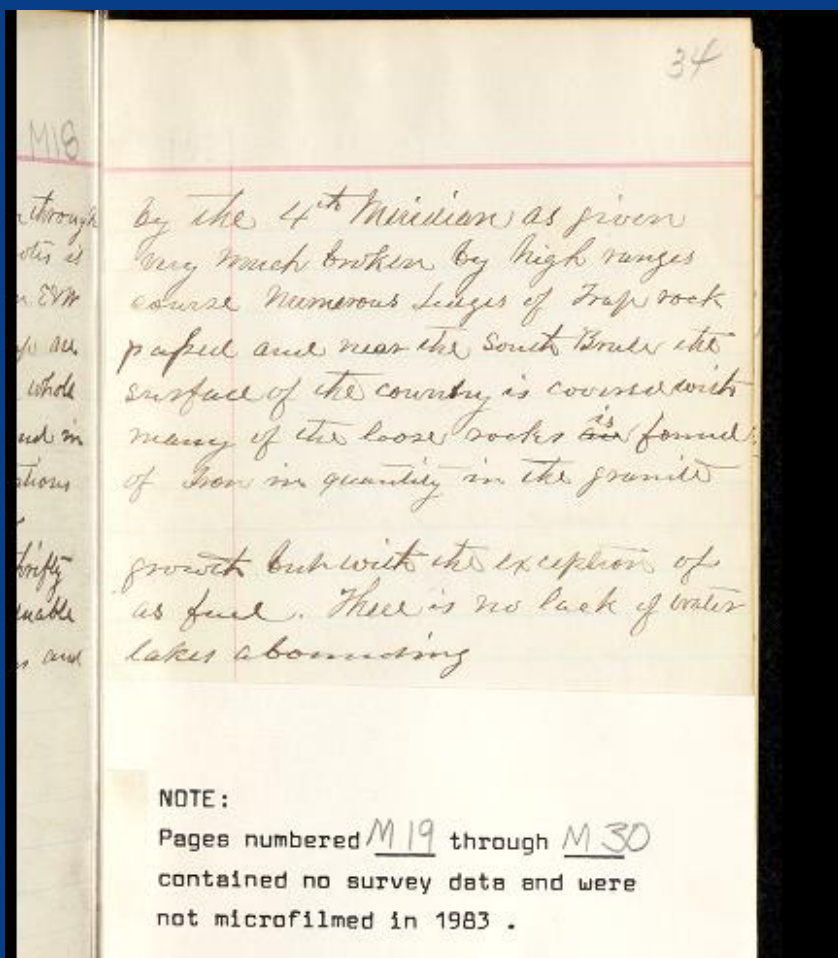
p.21-34 T July 22-Sat July 26

p.10-20 Th July 17-T July 22

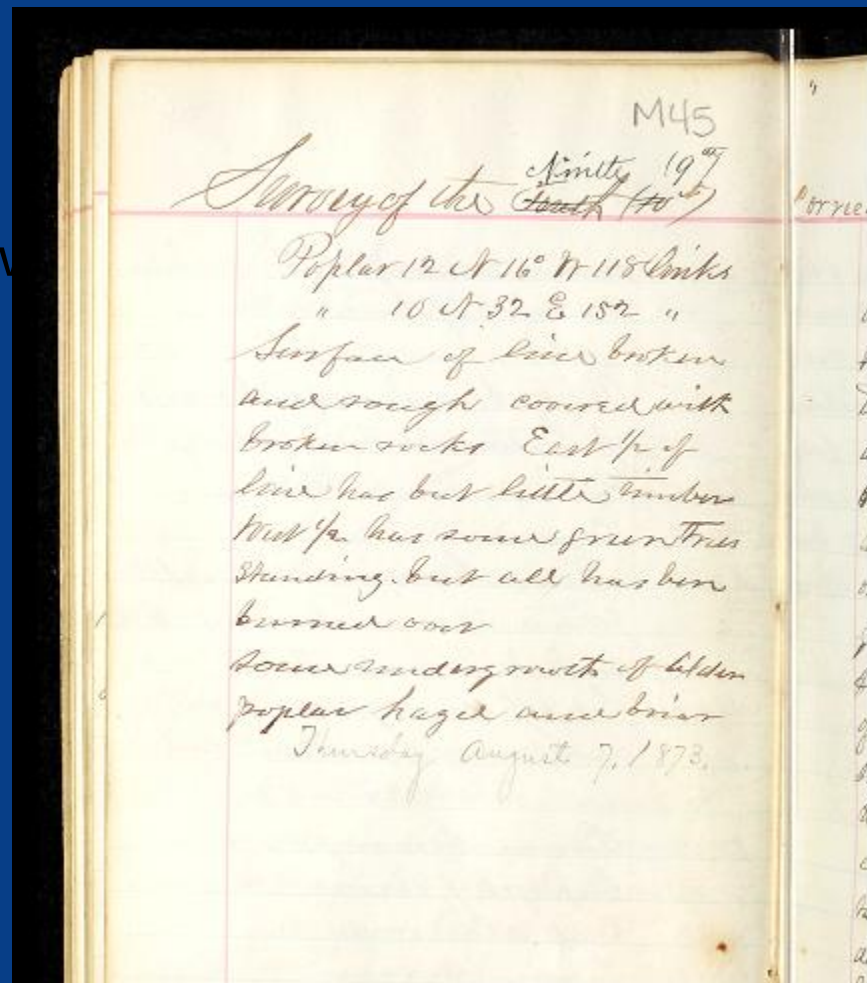
p.10 Wednesday cloudy could not work

p.3-9 ? M July 14-T July 15

Pagination



v.4209 p.34



v.4209 ?p81

Field notes were made by deputies

Transcribed by clerks

Bound into books (volumes) – numbered for convenience

- some – usually those of township subdivisions contain notes - from two deputies
- some contain page numbers
- some have index diagrams
- some have additional typed notations

The information in these books have now been digitized

The notes kept in the Surveyor General's office were different than the notes sent to Washington

A Sort-of-Conclusion

Does it matter how the deputies fulfilled their contract

Or does it only matter how they ran particular lines and set particular corners

What do the field notes reflect?

How they were made?

How they were stored for use by the Surveyor General?

How they were stored by the State?

A Sort-of-Conclusion

How can other records of the public land surveying process be usefully used by surveyors?