

- PUBLIC LAND
SURVEY SYSTEM
(PLSS)

Ross Workman Land Surveyor



History

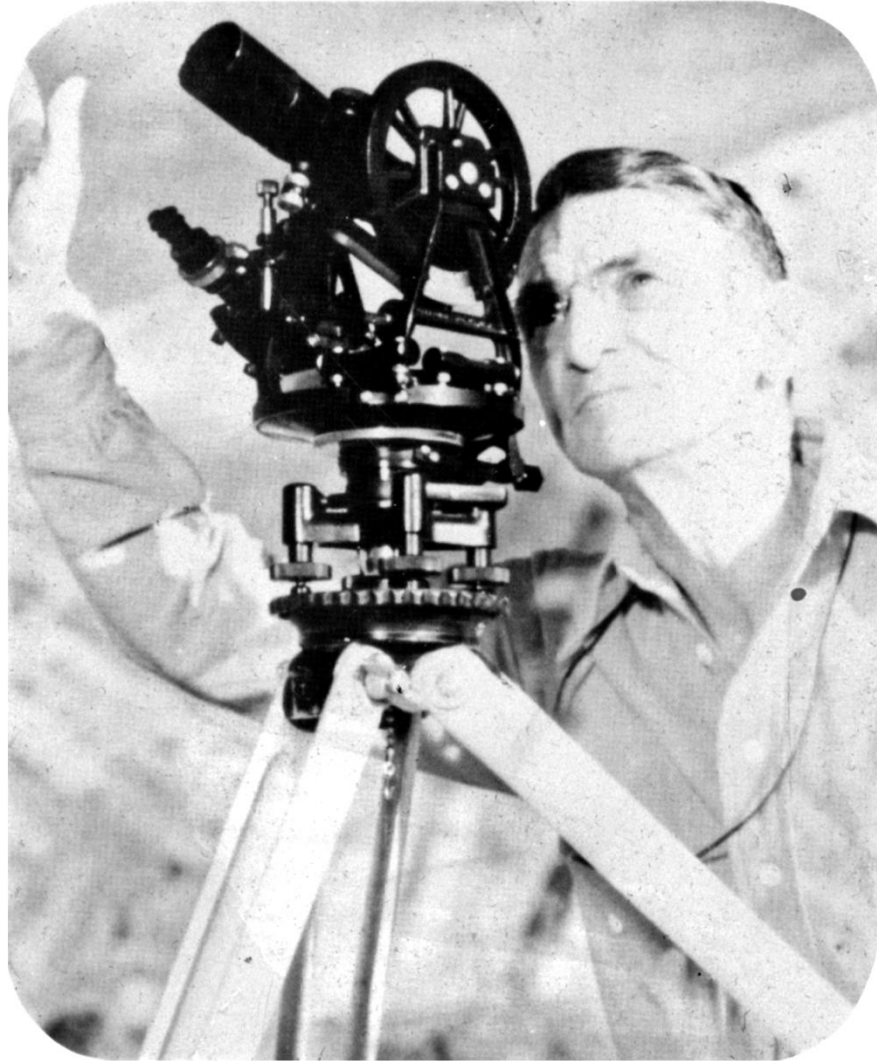
- How history lead to the creation of the Public Land Survey System (PLSS)
- Revolutionary War –began 1775- ended 1783
- Declaration of Independence –July 4, 1776
- In 1784 Congress discussed issues, real problems
 - Country was broke
 - Borrowed money
 - Needed to pay soldiers

Vast Lands to the West

- People moving West
- U.S. wanted to secure ownership
- Unsure of how much land there was
- U.S. could sell the land to pay the debt
- Land was given to soldiers

Surveyors Input

- Several surveyors in Congress
- Land needed to be surveyed
- Do something different than Metes & Bounds

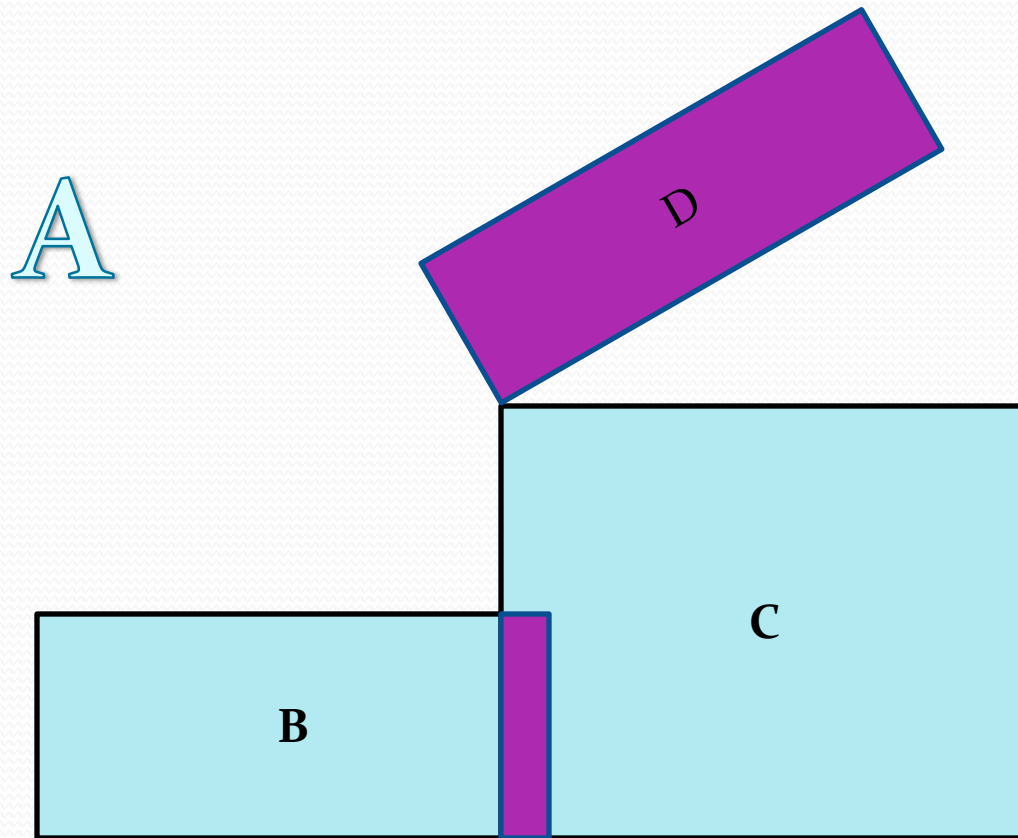


Andrew Nelson, Shown sighting through a Gurley transit.

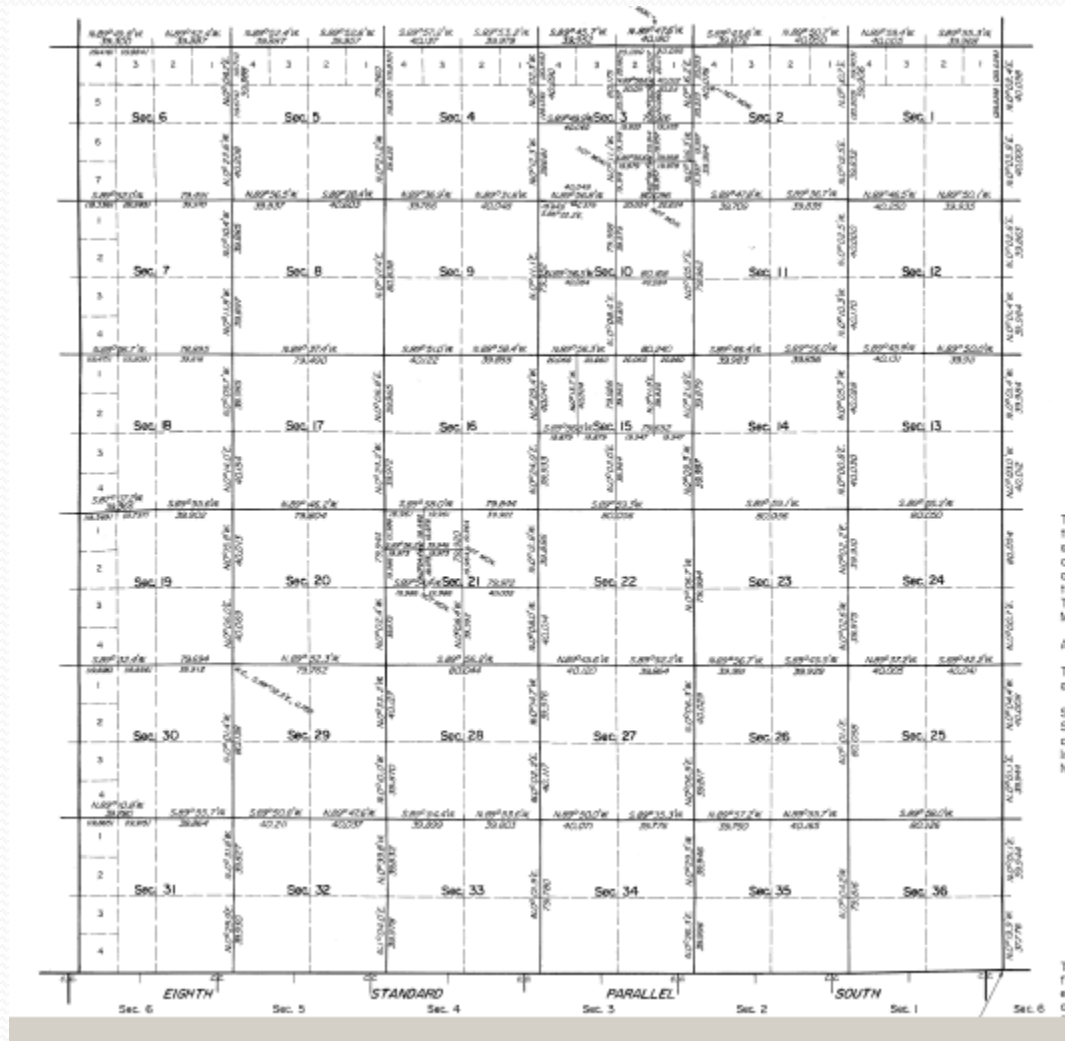
Metes and Bounds

- Has a lot of Inherent problems

Sequential Conveyances



SIMULTANEOUS CONVEYANCE



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SECTION 3

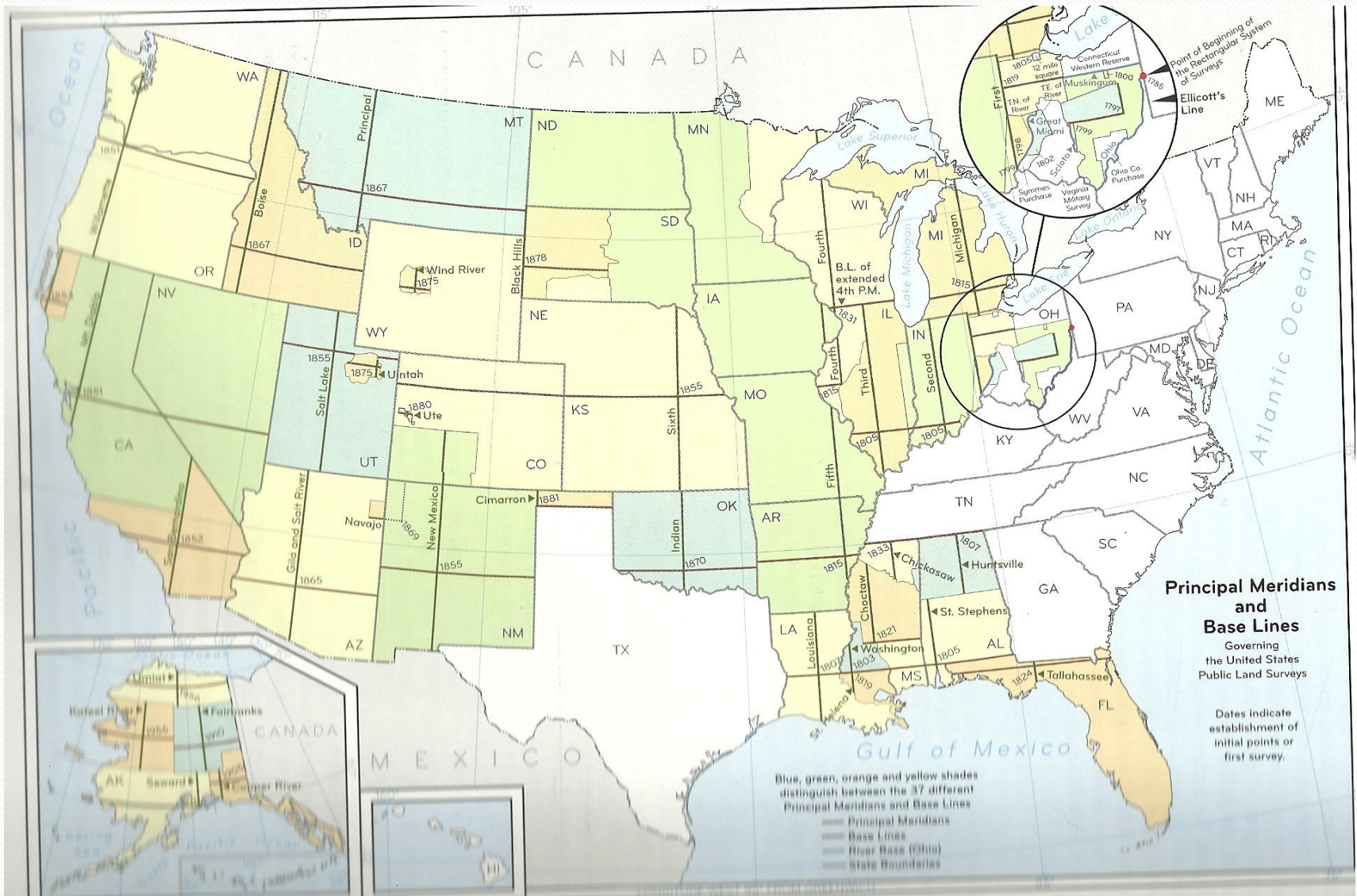
053.2'W. 9.979	S.89°45.7'W. 39.952	N.89°47.6'W. 40.180	S.8...
N.0°02.3'W. (20.155) 40.290 4	3	20.090 20.182 2 N.89°58.6'W. 40.207 20.117 20.090 1	4
N.0°02.3'W. (20.135) 40.290	80.175	20.011 20.011 20.011	40.076 4
N.0°12.3'W. 39.681	S.89°49.9'W. Sec. 3 40.060	79.926	20.023 40.076 4
N.0°12.3'W. 39.681	NOT MON. N.0°11.1'W. 40.048 N.89°56.8'W. 18.645 S.86°22.2'E. C379	19.933 19.918 S.89°56.6'W. 39.914 19.957 39.958 19.979 19.979 19.918 19.957 19.957 19.979	19.933 19.997 39.994
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	958 379		

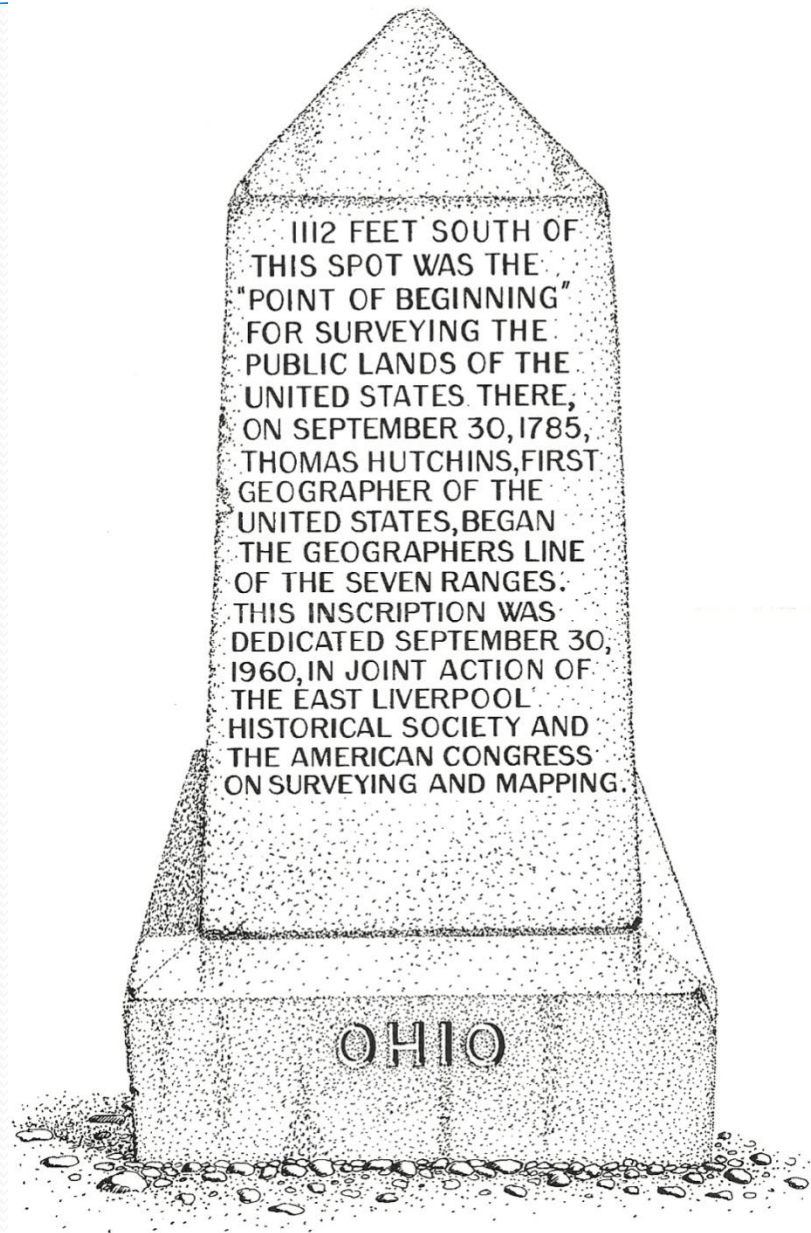
Committee 1784

- Headed by Thomas Jefferson
- People from each of the colonies
 - Many ideas
 - Survey it first
 - Create a grid, ten miles, seven miles then six miles
 - Land ordinance of May 20, 1785

LAND ORDINANCE

- May 20, 1785
- The basic principles have not changed since 1785
- The beginning point
 - Where the west boundary of Pennsylvania crosses the north bank of the Ohio River.





1112 FEET SOUTH OF
THIS SPOT WAS THE
"POINT OF BEGINNING"
FOR SURVEYING THE
PUBLIC LANDS OF THE
UNITED STATES. THERE,
ON SEPTEMBER 30, 1785,
THOMAS HUTCHINS, FIRST
GEOGRAPHER OF THE
UNITED STATES, BEGAN
THE GEOGRAPHERS LINE
OF THE SEVEN RANGES.
THIS INSCRIPTION WAS
DEDICATED SEPTEMBER 30,
1960, IN JOINT ACTION OF
THE EAST LIVERPOOL
HISTORICAL SOCIETY AND
THE AMERICAN CONGRESS
ON SURVEYING AND MAPPING.

OHIO

Township numbering system

36	30	24	18	12	6
35	29	23	17	11	5
34	28	22	16	10	4
33	27	21	15	9	3
32	26	20	14	8	2
31	25	19	13	7	1

Plan for numbering sections of a township adopted May 20, 1785

Township Line

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Range Line

Figure 1-2. A regular township.

The act of May 18, 1796 begin the contract system and the plan for numbering sections of a standard surveyed township was change to the BOUSTROPHEDONIC system, which we use today.

- April 25, 1812 the General Land Office was created as part of the Treasury Department to handle and dispose of the public lands.
- The Act of March 3, 1849, created the Department of the Interior. The GLO was then transferred to the new department.

- The Act of May 18, 1796 begin the contract system; contracting with county and local surveyors.
- The Act of June 25, 1910, ended the contract system and established the direct system. All surveys are now made by appointed surveyors employed by the Federal Government.
- On July 16, 1946, the General Land Office was merged with the U.S. Grazing Service to form the new Bureau of Land Management.

Manual of Surveying Instructions

- Previous editions

- 1855 first editon
- 1871
- 1881
- 1890
- 1894
- 1902
- 1930
- 1947
- 1973

Prior to the publication of the Manual of 1855 the Secretary of the Treasury issued directions to surveyors in manuscript or in printed circulars. From these directions the Manual of Surveying Instructions evolved.

- 2009 (present edition went into effect September 24, 2009)
- THERE IS AN ERRATA SHEET FOR THE 2009 MANUAL. IT CAN BE FOUND AT (www.blmsurveymanual.org/errata.asp)



A dividend of working in the wilds -
fresh fish for dinner. This photo shows
two members of Ted VanderMeer's
party in Covelo, California, Eel River,
1937

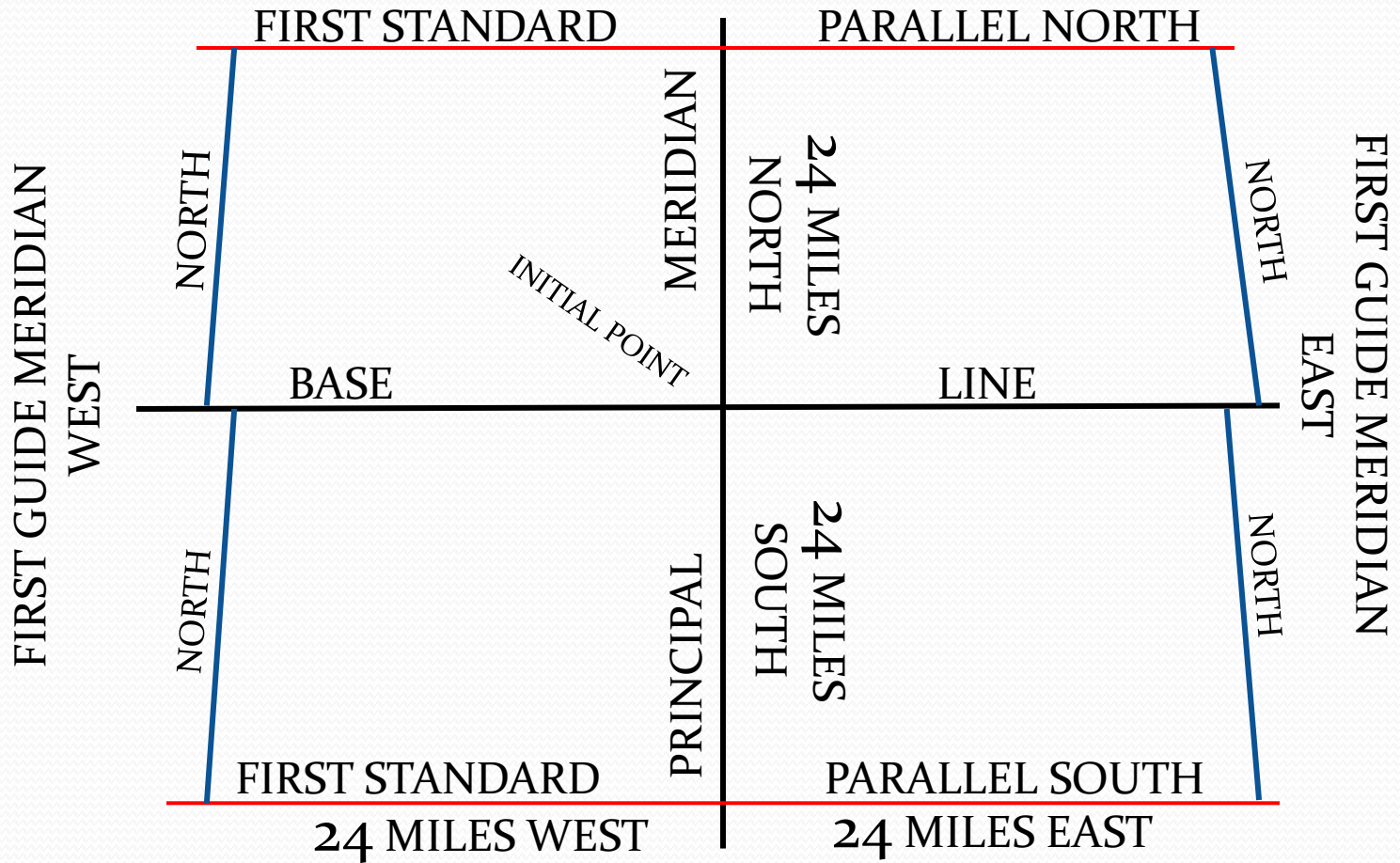
PUBLIC LAND STATES

- THIRTY (30) States have been created out of the public domain.

• NON-PUBLIC LAND STATES

- 18 Eastern States, District of Columbia, Hawaii and Texas
- UTAH-ceded by Mexico in 1848, and became part of the United States.
 - Became a state, January 4, 1896
 - Survey records-State Office-Salt Lake City
 - Records from original 1855 to the present are in our plat room on the 5th floor.
 - Now they are on the Utah BLM internet.

THE RECTANGULAR SYSTEM



- **THE RECTANGULAR SYSTEM**
- Initial points
 - The beginning point for the surveys of a given area.
- Principal meridians
 - They are intended to conform to the true meridian, extending north and south from the initial point.
- Base lines
 - They extend east and west from the initial point on a true parallel of latitude.

- **Standard parallels/Correction lines**

- They extend east and west from the principal meridian at intervals of 24 miles north and south from the Base line.

- **Guide meridians**

- They extend north from the base line, or standard parallel, at intervals of 24 miles east and west from the principal meridian.

THE INITIAL POINT FOR THE SALT LAKE BASE AND MERIDIAN



THE INITIAL POINT FOR THE UINTAH SPECIAL BASE AND MERIDIAN

ORIGINAL

HISTORY OF SURVEYS

Charles L. Gibson set the Initial Point in 1875 under Contract No. 64.

Andrew Nelson reestablished the Initial Point in 1953 under Grant No. 355.

Ronald L. Heston re-surveyed the Initial Point in 1998 under Grant No. 808.

CORNER DESCRIPTION

The Initial Point, monumented with an iron post, 2 1/2 inches diameter, buried 2.64 ft below paved road, bears west and west-south 2000 meters, with brass cap marked as described in the official record of the reestablishment of the Initial Point in 1953, from which these 1853 reference monuments:

Southeast reference monument: monumented with an iron post, 2 1/2 inches diameter, firmly set 12 inches below ground surface, with brass cap marked as shown with a steel-rod nail set complete.

Southeast reference monument: monumented with an iron post, 2 1/2 inches diameter, firmly set 12 inches below ground surface, with brass cap marked as shown. This monument appears to have been destroyed. Monument is located along southeast side of a fence post, 8 inches diameter, with barbed wire fence extending south and west and 3 rods southeast of a utility box in N. 11 E.

Southwest reference monument: monumented with an iron post, 2 1/2 inches diameter, firmly set 12 inches below ground surface, with brass cap marked as shown. Existing monument with concrete, 2 ft diameter, 1 ft high.

At the corner post:

Defined a brass level, 3 1/4 inches diameter, marked as shown, in concrete, 4.2 ft square, 2.5 ft thick over a 6 inch thick layer of gravel over the top of the 1853 iron post. Capstone the level with a steel ring, 18 inches diameter, with a marble cover inscribed INITIAL POINT. Existing steel ring with concrete to top of monument, from which are additional reference monument:

ORIGINAL (1853) monument: set a stoneless steel post, 30 inches long, 2 1/2 inches diameter, 26 inches in the ground, encased in concrete to ground surface, with brass cap marked as shown.

CERTIFICATE

I, Daniel T. Gillson, hereby certify upon honor, that I have personally resurveyed that work which is depicted on this plat, as having been accepted by the old under my direction, and that said survey has been made in strict conformity with said Special Instructions, and the Manual of Instructions for the Survey of the Public Lands of the United States.

Daniel T. Gillson
 Cadastral Surveyor
 Feb. 5, 2010
 Date

**INITIAL POINT, UINTAH SPECIAL MERIDIAN, UTAH.
 REMONUMENTATION OF INITIAL POINT**

Scale in Chains

NOTES

This plat represents the reestablishment of official survey marks to the remonumentation of the Initial Point of the Uintah Special Meridian, Utah.

Survey executed by Daniel T. Gillson, Cadastral Surveyor, beginning September 4, 2009, and completed September 10, 2009, pursuant to Special Instructions dated September 1, 2009 for Group No. 185, Utah.

Geodetic control was derived from GPS static observations, post processed by the National Geodetic Survey, Online Postprocessing User Service (OPUS), utilizing continuously operating reference stations (CGRS WYOM 2 CGRS APN, WYOM 3 CGRS APN, and SAGEBLY CGRS APN).

The geographic position of the Initial Point as determined by direct RTK methods from the National Geodetic Survey OPUS solutions, is as follows:

Latitude: 40°25'56.377" North
 Longitude: 109°58'07.417" West (NAD 1983)
 Elevation: 5794.6 ft (NAVD 1988)
 Network Accuracy = 0.005 meter at 95% confidence.

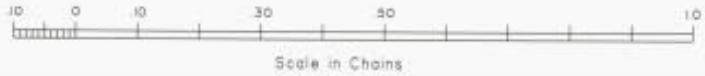
FIELD ASSISTANTS

Daniel Bekk, Chief Cadastral Surveyor for Utah
 Randy Baugh, Supervisory Cadastral Surveyor
 Robert Thompson, Cadastral Surveyor
 Jerry Abrey, Duchesne County Surveyor
 John Stough, Uintah County Surveyor
 John Wood, Civil Engineer
 B. Ryan Eberd, Alfred Lord Surveying
 John H. Bink, Cornerstone, PLS
 Brian J. Stough, Timberline Land Surveying
 Bryce Blitcher, Alfred Surveying
 Karol Hakowski, Timberline Land Surveying
 Austin Heiser, Timberline Land Surveying
 Don Stough, Timberline Land Surveying

UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 Salt Lake City, Utah February 5, 2010

This plat is strictly conformable to the approved survey, having been correctly accepted in accordance with the requirements of law and the regulations of this Bureau, is hereby accepted.

For the Director
Daniel W. Webb
 Chief Cadastral Surveyor for Utah







“It’s dry enough to hold us,” Roger Wilson predicted before their truck became stuck in a wash after a cloudburst. The men are in the Borrego Valley in April 1938.

ORIGINAL TOWNSHIP

NORTH 480.00	79.535	80.00	80.00	80.00	80.00	80.00
	N. 0°03'20"W	PARALLEL WITH THE EAST BOUNDARY				
	N. 0°02'40"W					
	N. 0°02'00"W	PARALLEL WITH THE EAST BOUNDARY				
	N. 0°01'20"W					
	N. 0°00'40"W	PARALLEL WITH THE EAST BOUNDARY				
80.00	80.00					
NORTH 480.00						

WEST ON THE LATITUDINAL CURVE

THE RECTANGULAR SYSTEM OF SURVEYS

SHOWING CHRONOLOGICAL BREAK-DOWN OF Land Description

**TOWNSHIP
DIAGRAM**
T. 2 N., R. 3 E.

				T ₄ N			
				T ₃ N			
				T ₂ N	T₂N	R₃E	
				T ₁ N			
BASE				LINE			
R ₄ W	R ₃ W	R ₂ W	R ₁ W	R ₁ E	R ₂ E	R ₃ E	R ₄ E
				T ₁ S			
				T ₂ S			
				T ₃ S			
				T ₄ S			

**BASE & MERIDIAN
DIAGRAM**

Sec. 6					Sec.1
				Sec. 14	
Sec. 31					Sec. 36

**SECTION
DIAGRAM**

N 1/2 320 Acres Sec. 14		NE 1/4 SE 1/4 40 Acres	
		10 Acres	
SW 1/4 160 Acres		SE SW SE	





