

## Understanding Township and Range

Excerpts and diagrams from “Analysis of the System of United States Land Surveys” in *Standard Atlas of Knox County Illinois 1903*. George A. Ogle & Co.: Chicago, 1903. Pp. I – II. Newberry Library call number: +F896467.642

Modern notes and clarifications are provided in square brackets.

### Metes and Bounds

Up to the time of the Revolutionary War, or until about the beginning of the present century [i.e., the nineteenth century], land, when parcelled out, and sold or granted, was described by “Metes and Bounds,” and that system is still in existence in the following States, or in those portions of them which had been sold or granted when the present plan of surveys was adopted, viz.: New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North and South Carolina, Georgia, Tennessee, Kentucky, Texas and the six New England States. To describe land by “Metes and Bounds” is to have a known land-mark for a place of beginning, and then follow a line according to the compass-needle (or magnetic bearing), or the course of a stream, or track of an ancient high-way. This plan has resulted in endless confusion and litigation, as land-marks decay and change, and it is a well-known fact that the compass needle varies and does not always point due North.

The present system of Governmental Land Surveys was adopted by Congress [United States Public Land Surveys] on the 7<sup>th</sup> of May, 1785. It has been in use ever since and is the legal method of describing and dividing lands. It is called the “Rectangular System,” [or, “Township and Range System”] that is, all its distances and bearings are measured from two lines which are at right angles to each other.... These two lines, from which the measurements are made, are the Principal Meridians, which run North and South, and the Base Lines, which run East and West.... Each Principal Meridian has its Base Line, and these two lines form the basis or foundation for the surveys or measurements of all the lands within the territory which they control. [See Diagram 2 for a map of the principal meridians and base lines in the central United States.]

Diagram 3 illustrates what is meant when this method is termed the “Rectangular System,” and how the measurements are based on lines which run at right angles to each other. The heavy line running North and South (marked A. A.) represents the Principal Meridian, in this case say the 5<sup>th</sup> Principal Meridian. The heavy line running East and West (marked B. B.) is the Base Line. These lines are used as the starting points or basis of all measurements or surveys made in the territory controlled by the 5<sup>th</sup> Principal Meridian. The same fact applies to all other Principal Meridians and their Base Lines. Commencing at the Principal Meridian, at intervals of six miles, lines are run North and South, parallel to the Meridian. The plan is followed both East and West of the Meridian throughout the territory controlled by the Meridian. These lines are termed “Range Lines.” They divide the land into strips or divisions six miles wide, extending North and South, parallel with the Meridian. Each division is called a Range. Ranges are numbered from one upward, commencing at the Meridian: and their numbers are indicated by Roman characters. For instance, the first division (or first six miles) west of the Meridian is Range I. West; the next is

Range II. West; then comes Range III., IV., V., VI., VII., and so on, until the territory governed by another Principal Meridian is reached. In the same manner the Ranges east of the Meridian are numbered, the word East or West always being used to indicate the direction from the Principal Meridian.

Commencing at the Base Line, at intervals of six miles, lines are run East and West parallel with the Base Line. This plan is followed both North and South of the Base Line until the territory governed by another Principal Meridian and Base Line is reached. These divisions or Townships are numbered from one upward, both North and South of the Base Line, and their numbers are indicated by figures. For instance: The first six mile division North of the Base Line is Township 1 North; the next is Township 2 North; then comes Township 3, 4, 5, and 6, and so on. The same plan is followed South of the Base Line; the Townships being designated Township 1 South, Township 2 South, and so on. The "North" or "South" (the initials N. and S. being generally used) indicated the direction from the Base Line. See Diagram 3.

These Township and Range Lines, crossing each other, as shown in Diagram 3, form squares, which are called "Townships" or "Government Townships," which are six miles square, or as nearly that as it is possible to make them.

### Townships of Land

Each Township is six miles square and contains 23,040 acres, or 36 square miles, as near as it is possible to make them.

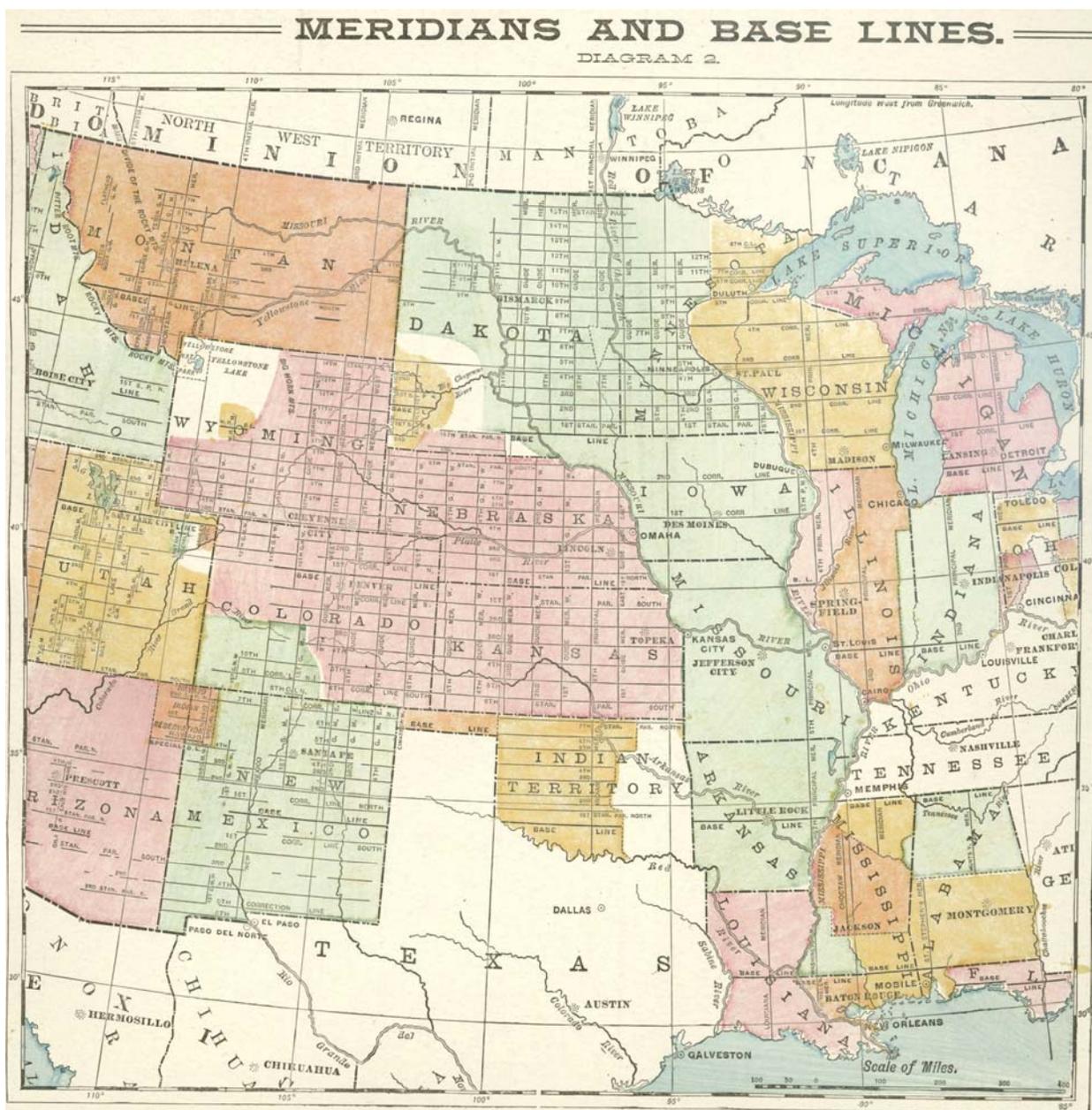
Each Township...is divided into 36 squares, which are called Sections. These Sections are intended to be one mile, or 320 rods, square and contain 640 acres of land. Sections are numbered consecutively from 1 to 36, as shown on Diagram 4. Beginning with Section in the Northeast Corner, they run West to 6, then East to 12, then West to 18, and so on, back and forth, until they end with Section 36 in the Southeast corner. Diagram 4 shows a plat of a Township as it is divided and platted by the government surveyors. These Townships are called Government Townships or Congressional Townships, to distinguish them from Civil Townships or organized Townships [units of local government], as frequently the lines of organized Townships do not conform to the Government Township lines.

### Sections of Land

Diagram 5 illustrates how a section may be subdivided, although the Diagram only gives a few of the many subdivisions into which a section may be divided. All Sections (except fractional Sections) are supposed to be 320 rods, or one mile, square and therefore contain 640 acres – a number easily divisible. Sections are subdivided into fractional parts to suit the convenience of the owners of the land. A half-section contains 320 acres; a quarter-section contains 160 acres; half a quarter contains 80 acres, and a quarter of a quarter contains 40 acres, and so on. Each piece of land is described according to the portion of the section which it embraces – as the Northeast quarter of Section 10; or the Southeast quarter of the Southeast quarter of Section 10. Diagram 5 shows how many of these subdivisions are platted, and also shows the plan of designating and describing them by initial letters as each parcel of land on the Diagram is marked with its description.

## Fractional Pieces of Land

Diagram 6 illustrates how the surplus or deficiency of land inside of these sections is distributed and which “forties” or “eighties” it affects. From this arrangement it will be seen that in any Section that touches the North or West Township Lines, the Southeast Quarter may be full – 160 acres – while another quarter of the same Section may be much larger or smaller. Frequently, these fractional “forties” or “eighties” are lotted as shown in Diagram 6. They are always described as fractional tracts of land, as the “fractional S. W.  $\frac{1}{4}$  of Section 6,” etc. Of course those portions of these Sections which are not affected by these variations are described in the usual manner – as Southeast  $\frac{1}{4}$  of Section 6.



# DIAGRAM 3

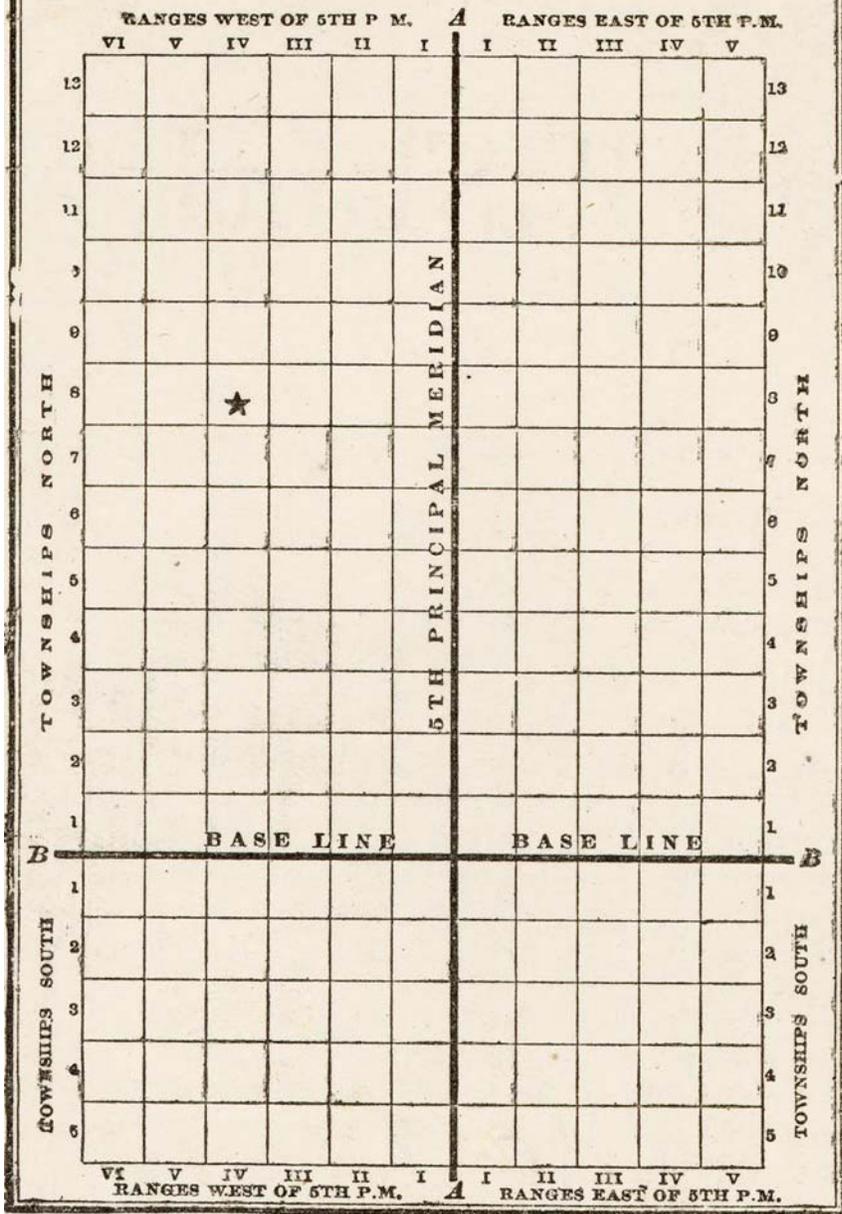




DIAGRAM 5.

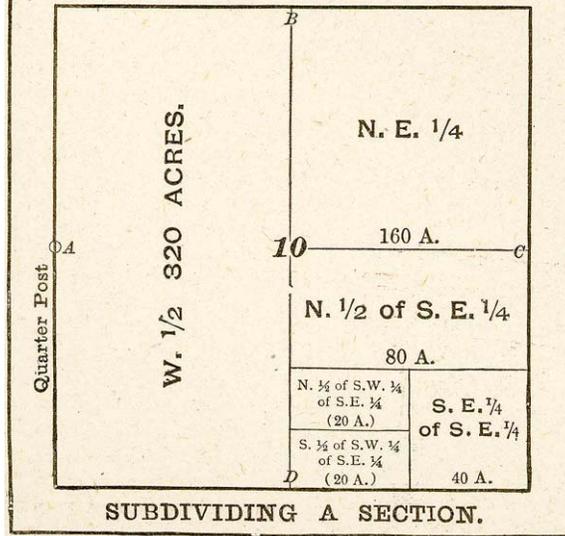


DIAGRAM 6.

