

Information
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CORINTHIAN
TITLE COMPANY

LAND MEASUREMENTS



THE UNITED STATES RECTANGULAR SYSTEM OF SURVEYING

The first standardized public land surveys in the United States were made in Ohio in 1786 under an ordinance of the Continental Congress passed May 20, 1785. Though modified since its adoption, the act is still the basis for all surveys of United States public lands, except private land grants.

Briefly, this system is as follows:

Base Line and Principal Meridian

The first step in putting this survey system into operation in a given area is the establishment of an "initial point." This point will be the basis for all government surveys in the area it controls, and its latitude and longitude are fixed by astronomical observations. From this point, a Principal Meridian is run north and south on a line that would intersect the poles, and a Base Line is run east and west on a parallel of latitude. The principal meridians are given name or number designations for use in describing land.

Standard Parallels and Guide Meridians

Because of the curvature of the earth, additional lines called Guide Meridians are run every 24 miles east and west of the Principal Meridian. Other lines, called Standard Parallels, are run every 24 miles north and south of the Base Line. The Parallels north of the Base Line are designated First Standard Parallel North, Second Standard Parallel North, etc., and those south as First Standard Parallel South, etc. These Guide Meridians and Standard Parallels are also known as Correction Lines.

Ranges and Townships

Lines next are run North on true meridian from Standard Parallel and 6 miles apart, this marking the surveyed area into strips 6 miles wide called Ranges, which are numbered East and West from the Principal Meridian. Similar lines are run at every 6-mile point North and South of the Base line, and parallel with the Base line, cutting the Ranges into squares, 6 miles each way, which are called Townships.

The first Township North of the Base line is numbered Township 1 North, the second Township 2 North, etc. Those South of the Base line are numbered Township 1 South, Township 2 South, etc.

Sections

Townships are subdivided into 36 parts - each one mile square, as near as may be, called Sections - accomplished by running through the Township, each way, lines parallel to the South and East Township boundaries at the end of each mile. The interior meridional or North and South Section lines therefore are intended to be straight lines ordinarily for 1 mile only, parallel to the East line of the Township, except those next to the North line of the Township and the interior latitudinal; East and West Section lines are intended to be straight lines for 1 mile

only, parallel to the South line of the Section. The 36 sections into which the Township is divided are numbered from 1 to 36 beginning with the Northeast corner and proceeding West and East alternately through the Township.

The Sections are the smallest tracts the law requires to be surveyed but further subdivisions are made by the division of the Sections into 4 quarters containing 160 acres more or less, and named Northeast Quarter, Northwest Quarter, Southeast Quarter and Southwest Quarter. Due to the earth curvature and unavoidable errors, the Sections along the North Boundary and West Boundary of each Township are irregular. The quarter sections along the North and West boundaries of these sections take up the excess or shortage in the Township, and the Quarter Quarters along the North and West Township boundaries are given Lot Numbers; for example, Lot 2, Section 5, Township 42 North, Range 12 East, or Lot 7, Section 31, Township 41 North, Range 9 East.

In several states, a Township frequently will be occupied partially by Indian lands. United States Government Surveys did not cover these lands, and an intersection with the boundaries of them resulted in fractional Townships.

Fractional Quarter Quarters in the Sections created by reason of the Indian lands are given numbers by the Government at the time of survey; for example, Lot 2, Section 26, Township 40 North, Range 9 East. Also, when the meander line of a body of water is a boundary or when there is an excess or deficiency due to natural error in a section or township, the Fractional Quarter Quarters thus created are described as Section Lots. In short, a Lot exists for the purpose of describing sectional property which cannot be described as a true Quarter Quarter or 40 acres.



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

Sectional map of typical Township showing adjoining Sections.

ONE SECTION OF LAND CONTAINS ONE SQUARE MILE OR 640 ACRES

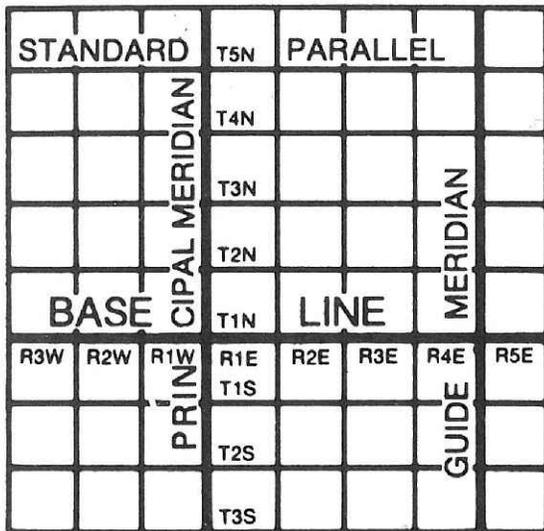
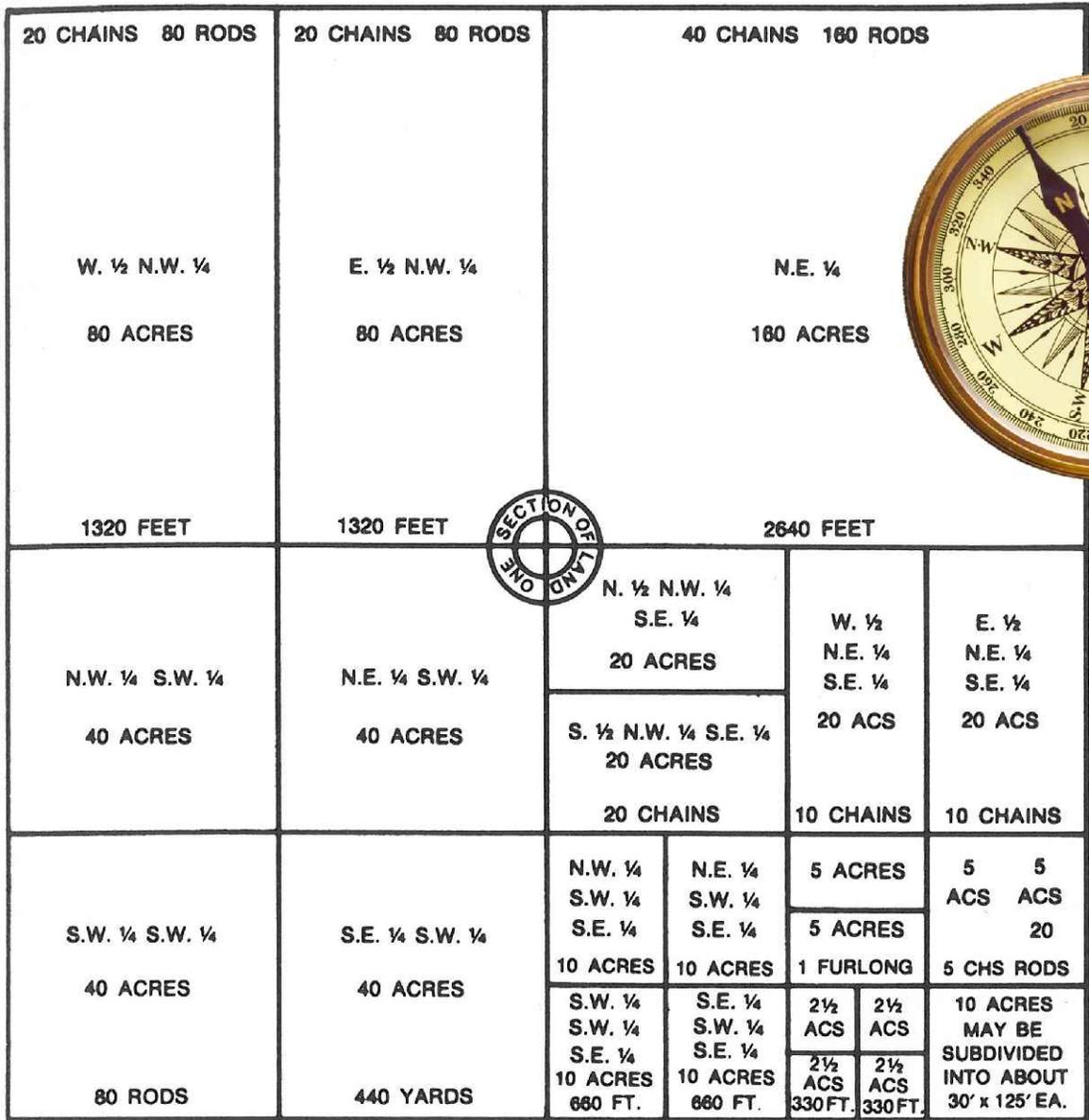


Diagram showing typical division of tract into Townships.

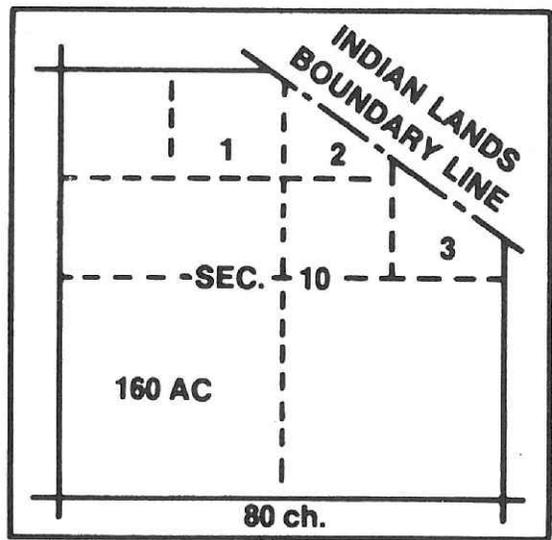


Diagram showing typical division of Fractional Section into Government Lots.



TABLE OF LAND MEASUREMENTS

Linear Measure

1 inch	=	.0833 foot
7.92 inches	=	1 link
12 inches	=	1 foot
1 vara	=	approx. 33 inches
2.75 feet	=	approx. 1 vara
3 feet	=	1 yard
25 links	=	16.5 feet
25 links	=	1 rod
100 links	=	1 chain
16.5 feet	=	1 rod
5.5 yards	=	1 rod
4 rods	=	100 links
66 feet	=	1 chain
80 chains	=	1 mile
320 rods	=	1 mile
5280 feet	=	1 mile
1760 yards	=	1 mile

Square Measure

144 square inches	=	1 square foot
9 square feet	=	1 square yard
30.25 square yards	=	1 square rod
16 square rods	=	1 square chain
1 square rod	=	272.25 square feet
1 square chain	=	4356 square feet
10 square chains	=	1 acre
160 square rods	=	1 acre
4840 square yards	=	1 acre
43560 square feet	=	1 acre
640 acres	=	1 square mile
1 section	=	1 square mile
1 township	=	36 square miles
1 township	=	6 miles square

An Acre is:

43,560 square feet	660 feet x 66 feet
165 feet x 264 feet	330 feet x 132 feet
198 feet x 220 feet	160 square rods
5280 feet x 8.25 feet	208'8.5" square or
2640 feet x 16.5 feet	208.71033 feet square*
1320 feet x 33 feet	

or any rectangular tract, the product of the length and width of which totals 43,560 square feet.

$$*(208.71033)^2 = 43,560.002 \text{ square feet}$$

To segregate any number of acres in a square or rectangular form from a larger tract where a definite length or width is known:

Multiply 43560 by the desired acreage and divide the product by the known length or width and the result is the other dimension of the tract to be segregated. In all cases where the shape of the tract is irregular or has curved boundaries or where the line of buildings or of possession is in doubt, consult a Registered Engineer or Licensed Surveyor.

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all your
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