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Township and Range: The United States Public Lands Survey

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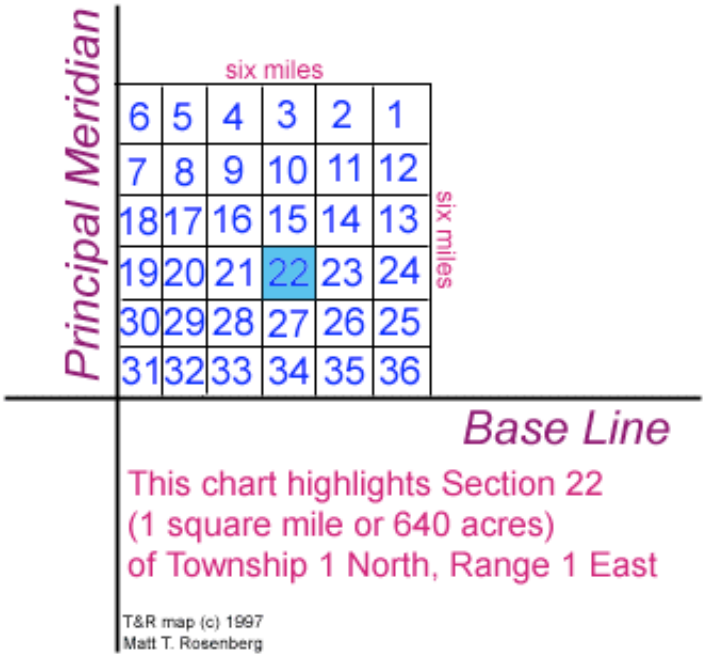
> *Fly across the heartland of the United States today and you will see below a vast checkerboard, with fields and roads and cities laid out in a precise north-south, east-west arrangement. Practically the only features that don't run by the compass are the ridges and valleys and streams.**

Following the Louisiana Purchase and the exploration of the western United States "frontier," the federal government decided to sell as much of the land as possible to the public. In order to make the distribution as equitable as possible among a generally uncharted and very diverse two and a quarter million square miles, they decided to divide up the west with squares.

The General Land Office (later known as the Bureau of Land Management) started surveying west from Ohio. They established 34 sets of survey meridians and base lines which were the starting points for each region of townships. Thirty-one sets are in the western and southern contiguous United States and and three pairs are in Alaska. Originally surveyors named the earliest pairs by number (the first through sixth principal meridians); the rest are named for geographic features. Names include the Boise Meridian, Gila and Salt River Meridian, and the Mount Diablo Meridian.

A township is both a square six miles long on each side as well as the method to locate the north-south (horizontal) row from the base line where the township lies. In the graphic below, the township is located at Township 1 North because it is in the first row north of the base line. Ranges are rows of townships east or west of the meridian (vertical). In the graphic, the township is located at Range 1 East because it is in the first row to the east of the principal meridian.



Each 36 square mile township is divided up into 36 single-square-mile "sections." These sections are numbered sequentially from the northeast corner to the southeast corner (see graphic). The 640 acre sections can be divided even further. For instance, if someone purchased the northeast corner (160 acres) of section 22 as shown in our sample township, the property would be identified as the "northeast quarter of section 22, township 1 north, range 1 east." When you have even smaller portions of a section it becomes a bit more complicated. Try this one, "The southeast quarter of the northwest quarter of section 22, etc." this quarter of a quarter section is a 40 acre parcel. Furthermore, one could identify a ten-acre parcel by adding another quarter to the description (a quarter of a quarter of a quarter of a section).

The United States Public Lands Survey is known as a cadastral survey. Cadastral surveys are those which establish boundaries for land ownership. Since the primary purpose of the USPLS was to sell land, it was important for defining land boundaries.

Not all townships are exactly square. Due to the curvature of the earth, every few rows of townships there is a slight "jog" in the meridians to compensate. There are also portions of the survey where land was already owned and surveyed by different methods. California's Spanish land grants are a notable example. The grants were based on naturally occurring features such as streams so they are irregularly shaped islands among the squares of the survey.

Throughout the west, one can commonly find roads one mile apart and running in straight lines for dozens of miles. We can thank the USPLS for the "checkerboard" pattern which stands out on maps of the U.S. today.

*C.E. Remington as quoted in David Greenhood, *Mapping* (Chicago, 1964) 23.

References

Campbell, John. *Map Use and Analysis*. Dubuque, Iowa, 1991.

Greenhood, David. *Mapping*. Chicago, 1964.

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