Public Land and Boundary Surveys

The rules of Survey are published by the U.S. Dept of the Interior.

The basis of the system is a series of reference meridians and associated baselines. The baseline runs perpendicular to the meridian. In our area the origin of the local system is on Mt. Diablo. (Long 121°54'27", Lat 37°52'54")

The survey rules require that:

1. "The public lands shall be divided by north and south lines run according to the true meridian, and by others crossing them at right angles, so as to form townships of six miles square, …"  

2. "The corners of the townships shall be marked by progressive numbers from the beginning; each distance of a mile between such corners must be also distinctly marked with marks different from those of the corners."  

3. "The township shall be divided into sections, containing as nearly as may be, six hundred and forty acres each, by running parallel lines through the same from east to west and from south to north at the distance of one mile from each other…"

The above divisions define the basic system for locating a tract of land. See figure 23-2 in Wolf/Brinker.

Any further subdivision is done by local surveyors.

The rules create a conflict which must be resolved. (The meridians are not actually parallel) How can a consistent framework be developed?

The area is subdivided in a very strict sequence using **guide meridians** and **standard parallels**. These are 24 miles apart.

These are then divided into townships which are designated by two identifying symbols **Township** and **Range**. The syntax is Tx(N or S) and Ry(E or W). The numerical values of x and y indicate how many "six-mile" lengths the township is from the principal meridian (in the case of range) or from the baseline (in the case of township).

The location of a parcel of land is then described by a series

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1 Manual of Surveying Instructions, US Bur Land Mgt  
2 Ibid  
3 Ibid
Boundary Surveys

Boundary surveys are conducted to establish the exact location of property. The survey is part of the process of determining ownership. The overall system is referred to as the land tenure system.

The basic requirements of the land tenure system are to:

1. Provide a means of changing ownership. (usually referred to as changing or transferring title)
2. Establish permanently marked boundaries which enable parcels to be located in the field.
3. Develop a permanent record system for defining who owns the property.
4. Provide a legal description of each parcel.

The last two items are usually part of local records, generally associated with counties.

The proper description of a parcel is established by a land survey and may be given as:

1. Metes and Bounds
2. Block and lot number
3. Coordinates values for the corners
4. USPLSS descriptions

Metes and bounds
1. Establish the general location using USPLSS.
2. Give a point of beginning (POB). This point must be permanent, identifiable and one of the property corners. This point is usually located with respect to other fixed monuments.
3. A series of lengths and directions of the various sides closing back on the POB.
4. Usually the total area is given.
5. All other supporting information (see example on P 481 of Wolf/Brinker)

Block and lot number
1. a subdivision map is filed and each lot is numbered. The lot is identified only in relation to the map. (see example on page 343 in W/B)

Coordinates of corners
1. Give general location by using USPLSS.
2. Describe coordinates relative to an established coordinate system, usually a State plane coordinate system (SPCS).

The most problematic surveys are retracement surveys. These are intended to relocate previously survey boundary lines.