

CHAPTER 1

HISTORY AND CONCEPT OF BOUNDARIES

1.1 INTRODUCTION

The history and location of boundaries are steeped in the history of the world from the time before records were kept to today. These boundaries are a result of actions of individuals and nations and law. Boundaries can be related to the areas of history, politics, surveying, and law. Both boundaries of an international nature and those between individuals have caused problems that have been fought, are still being fought, and will continue to be fought in the future over their locations between nations, states, and individual parcels of land within “Happy Acres” subdivisions. In recent years, both local and international judicial tribunals have had to apply old, proven doctrines and have created new legal doctrines to resolve boundary issues. One cannot pick up a newspaper or a magazine without reading about some individual or nation with a boundary issue that is new or that has been festering for many years.

Wars have been fought both on an international scale and in local neighborhoods, and people have been killed over boundary disputes of an inconsequential nature involving pieces of land that have ranged from hundreds of miles to a fraction of a foot or meter. Boundaries are personal in nature, and people have been and will continue to be protective about the misidentification or misalignment of a known or perceived boundary infringement. The surveyor may become the common factor in a boundary problem, as a result of, for example, preparing an erroneous map showing the boundary between two or more nations or the erroneous depiction of a single line between two landowners.

Even after modern boundary issues have been, seemingly, resolved, members of both the legal profession and the surveying profession may question the results,

asking incredulously, “How could the court do that?” Both the trial attorney and the testifying survey expert could not believe the Court disregarded the case law on the subject.

In the primeval forest, particularly in the plant kingdom, there are no known boundaries between living things. Although some horticulturists dispute this, we accept the fact that plants do not create boundaries to separate themselves. Animals—especially humans—do create boundaries. We like to think that only humans create and appreciate boundaries, but it has been observed in nature that most mammals, some reptiles, and a few fish create, identify, mark, and defend boundaries.

In this book, we discuss the creation, identification, description, and recovery of boundaries among people. We do not include the recovery and interpretation of the evidence of once-created boundaries; rather, we examine how boundaries are created, how they are described, and the technical legal and ethical ramifications of such boundaries that separate rights, both real and perceived, in real property.

Some boundaries are created in a random manner, whereas others are created according to preconceived plans, identified by any manner of a written description(s), and then litigated according to common law, case law, or statute law.¹ Although it is not our intent in this book to dwell on the creation of boundaries by the lower forms of animal life, their actions in creating boundaries should be examined, because certain principles are similar. Many of these boundaries humans create remain for generations and, when they are retraced by modern methods and with a modern approach, may cause technical and legal problems for today’s surveyors and courts.

Field examinations and studies by naturalists have revealed that most animals really don’t create boundaries per se. However, it is recognized that they usually create terminal points (corners) and then identify the boundaries between these points,² although lower forms of animals may create boundaries that are not necessarily of a permanent nature.

Humans usually create boundaries in several ways. For the sake of simplicity, these may be placed in the following categories:

1. *By action.* Physical acts create a line and points on the ground. This is followed by placing actual monuments at the corner points and identifying these points (corners) and line objects. The lines and objects are then described and may be identified on plats or in field notes. This evidence created and left “on the ground” becomes the proof of the original work and lines and becomes the legal controlling factor in conducting *retracements*.
2. *By writings.* The written word becomes the method of creation when a person describes corners and/or lines in a deed and then conveys to these described lines, prior to the completion of a survey. The problem is created when what the surveyor places on the ground is and then fails to create a solid paper trail.
3. *By law.* Ancient common and modern statutes are relied on to create, modify, and relocate many modern boundaries.

The following principles are introduced in this chapter and discussed in detail in later chapters:

- PRINCIPLE 1. Boundaries enjoy a long history in both mythology and Judaic-Christian history.
- PRINCIPLE 2. A surveyor creates land boundaries. These created lines, which are separate and distinct from property lines, are determined by legal principles and law.
- PRINCIPLE 3. A described closed boundary identifies a claim of right to any property interest for which any person can make a claim of possession through a claim of title. These boundaries may be either macro or micro in nature.
- PRINCIPLE 4. A person or landowner can legally convey only the quality and quantity of interest in land to which he or she has title.
- PRINCIPLE 5. In most instances, there are no federal laws describing real property rights.
- PRINCIPLE 6. Although there are no federal laws of real property, property rights are identified by the state laws and are protected under the U.S. Constitution.
- PRINCIPLE 7. Real property rights are determined according to the laws in effect in the particular locale where the land is located. English common law is the predominant law, and it is described as the *lex loci*.
- PRINCIPLE 8. Once boundary lines are created, the contiguous lines may, by law or by the actions of landowners who have vested rights, be changed or altered.
- PRINCIPLE 9. Law does not provide for two original descriptions of the same parcel.
- PRINCIPLE 10. Multiple boundary descriptions may exist for the same parcel, but only one is controlling.
- PRINCIPLE 11. There can be only one original boundary survey and description; all subsequent ones are retracements.
- PRINCIPLE 12. A resurvey can be conducted only by the entity who conducted the original survey. The law provides for resurveys of parcels, but only on a limited basis and under certain restrictions, the main one being that the bona fide property rights granted under the previous survey are not jeopardized.

1.2 SIGNIFICANCE OF BOUNDARIES

The description of property by surveys and landmarks and by reference to boundaries is very ancient. Basically, property interests are separated by boundaries. From precolonial times in the United States, many wars, both local and regional, have been

fought and people have been killed as a result of disputed boundaries. This problem was probably inherited from the European continent when the United States adopted English common law as the basis of its common law.

In Great Britain and in Europe, territorial boundaries have, for the most part, generally been stable because the lines were etched in antiquity. Once parish boundaries were established in England—many during Roman times—they formed invisible webs or lines around families and bound them into communities, and ultimately separated communities from one another. This historical background was passed on to the United States, and these distinctions exist today as a result of this influence.

Stories abound in both the United States and Great Britain in which boundaries have affected people's lives. Individuals and groups go to extremes over boundaries, for a boundary can have political ramifications in areas such as citizenship and jurisdiction in legal matters. A tale from colonial times tells of the decision of surveyors who were engaged to run the boundary line between Kentucky and Tennessee to place a jog in the line when a landowner placed a jug of rum near his property and told the surveyors that it was theirs if they found it to be in Kentucky. They did. Naturally, the line has a jog in it. One of the authors of this book, Walt Robillard, remembers that when he was a young boy growing up near the Canadian border, his grandfather would take him to a tavern that straddled the U.S.–Canadian border. On the U.S. side of the bar, the serving of drinks stopped at midnight and was “never on Sunday”; however, on the Canadian side, the drinking continued. At the stroke of midnight and on Sundays, all drinks were served on the Canadian side. The bar patrons would move physically from the United States into Canada.

In 1870, the Reverend Francis Kilvert, an Anglican priest in Wales, related how one of his parishioners occupied a house that straddled the border in Wales on the edge of Brilly Parish. It was suggested that it would be more desirable for this parishioner to give birth to her child in his parish. The line between the parishes was indicated by a notch on the chimney. To ensure that the child would be born in the proper parish, the midwife had the mother give birth standing up in a corner on the appropriate side of the parish line.

People take boundaries seriously. Yet what they really are saying is, “I want the rights that I am entitled to in this property” or “I want those rights in that parcel of land.” Boundaries do not determine rights in land, but they identify the limits of any rights a person or group of people may have created or identified and now claim.

1.3 BOUNDARY REFERENCES

Principle 1. Boundaries enjoy a long history in both mythology and Judaic-Christian history.

Historically, the English language, using actual occurrences, developed certain terms that depicted and/or identified boundary problems. Until the advent of published maps, boundary identification and the resulting problems and discrepancies were passed from generation to generation by word of mouth.

It was not until mapping became a part of everyday living that boundaries were identified to such a degree of certainty that they no longer relied on the spoken word. In all probability, many of the boundaries on modern maps were placed there based on the testimony of people who identified them at an earlier time. There are many place names that indicate evidence of boundaries. The Old English term *maere* translates to “boundary.” An examination of modern British Ordnance Survey maps or maps produced by the U.S. Geological Survey indicate names like “Merebrook” and “Merebeck,” indicating that certain streams were considered boundaries.

Once boundaries were established and identified, they would be of no value if society could not ensure them with a degree of certainty. Once again, the gods and society were called on for guidance. The ancient Greeks ensured that boundaries would be sacrosanct. They “appointed” the goddess Terminus to be the protector of boundaries. This system was inherited by the Normans and Saxons in England in two ways: first, by the manner in which boundary stones were originally marked, and second, by the practice of *beating the bounds*.

The historic practice of beating the bounds consisted of the ritual of selecting children from the locality (usually boys), who, accompanied by a member of the town, a clergyman, and the parties to the land transfer, would walk, or perambulate, the boundaries. At each corner, one of the boys would be suspended by his feet and his head would strike the monument. Then, in the event of a future dispute, the boy would go to the corner marking the boundary and point out its location, as he remembered it.

For centuries, surveyors have marked boundary stones (corners) by cutting crosses into rock monuments (see Figure 1.1). This practice was probably brought



Figure 1.1 Boundary stone marked with a + of medieval origin. (Courtesy of Prof. Angus Winchester.)

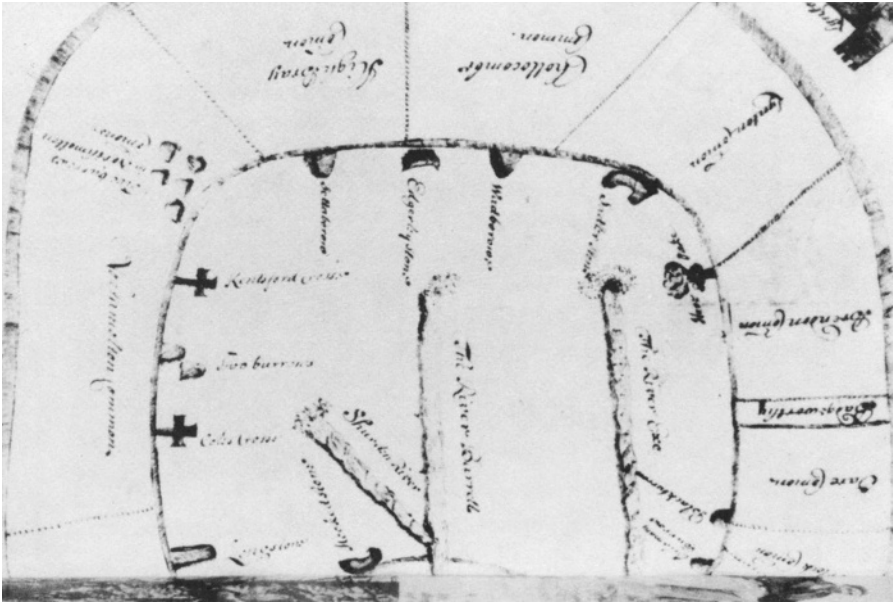


Figure 1.2 1675 Map of Exmoor Forest, Devon. Note crosses at some corners. (Courtesy of Public Records Office, London.)

to America by early English surveyors, who used the same practice in their home country. An examination of early survey and mapping practices indicates that early English surveyors would cut a cross into the monument as protection or to indicate the bounds of a religious holding. They then indicated these beacons (monuments) on maps in the form of crosses (see Figure 1.2). In all probability, these crosses were cut into the stone and then shown on maps in hopes that the Christian God would protect them as Terminus had protected Greek boundary stones.

1.4 TERMINUS: THE GOD (OR GODDESS) OF BOUNDARIES

Following the Greeks, Terminus was designated by the ancient Romans as the god of boundaries. Some believe that this god evolved from the ancient Greek goddess Terminus. Today, surveyors, real estate attorneys, and judges who must make legal determination on land matters should consult the wisdom of this ancient god(dess). There are numerous references in the Old and New Testaments concerning boundary stones, markers, landmarks, and boundaries. Ovid, the Roman poet, wrote: “O Terminus, whether thou art a stone or a stump buried in the field, thou hast been deified from days of yore . . . thou dost set bounds to peoples and cities and vast kingdoms; without thee every field would be a root of wrangling. Thou courtest no favour, thou art bribed by no gold; the lands entrusted to thee thou dost guard in loyal good faith.”³

To show faith in such a god and with the hopes that a favorable response from the god would bring peace to a community and stability to its boundaries, a festival called Terminalia was held on February 23. During this annual festival, landowners would meet at their common boundary stones. Each would place a garland of flowers, and the ceremony would culminate with a minor feast of cakes and honey and toasting with wine. Then an animal, usually a pig or a lamb, would be sacrificed and the bones and blood deposited near the site.

Titus Livy wrote in his *History of Rome* that the Romans showed such favor to Terminus that at Rome's founding a temple was erected to the god on one of the seven hills, and his domain was never questioned. To show that all of the gods of Rome looked to Terminus, Livy wrote: "The gods are said to have exerted their power to show the magnitude of this mighty empire. . . . The fact that the seat of Terminus was not moved, and that of all the gods he alone was not called away from that place consecrated to him, meant that the whole kingdom would be firm and steadfast."⁴

1.5 DISPUTES AND BOUNDARIES

Principle 2. A surveyor creates land boundaries. These created lines, which are separate and distinct from property lines, are determined by legal principles and law, predicated on law.

Disputes as to boundary location and/or boundary line identification predate recorded history. Until the development of modern maps at scales that permit adequate and positive identification of boundaries, individuals and communities depended on the spoken word to "seal" the location of boundaries and possession to maintain them. One historical method of identifying boundaries is beating the bounds. This practice was possibly a vestigial reminder of what had been a quasi-religious practice first used to identify parish boundaries between religious orders (see Figure 1.3). Today, this method is still referred to as "beating the bounds" and is still practiced on a very limited scale in a few states.

Disputes over boundaries were frequent between communities and between church lands. The ancient ritual of beating the bounds was usually carried out during Rogation Week, the period between the fifth Sunday after Easter and Ascension Sunday. On the day selected, the parson, the constable of the townships, and the steward of the court (clerk) of the manors, accompanied by townspeople both young and old, would take ample supplies of food and drink and perambulate the boundaries to be identified. In this manner they sealed in the memories of the townspeople boundaries that had never been committed to writing or placed on a map. To enhance the memory, young boys were selected and given an unforgettable experience at each of the beacons (corner monuments). Trials over disputed boundaries and depositions in many shire (county) courts have left us with excellent accounts of some of the rituals that helped the young people remember the disputed boundaries. Some are related as follows.



Figure 1.3 Beating the bounds of Edgmond Parish, Shropshire, about 1933. (Courtesy of Local Studies Department, Shropshire County Library.)

In 1687, an elderly man, William Gregory, testified that, as a child of seven in 1601, in a boundary dispute of a line in Exmore (Somerset), he had assisted in a perambulation of Exford Parish. As the group passed one of the boundary stones, one of the older gentlemen called to the boy, “William, put your finger on the meerestone, for it is soe hot it would scald him.” William related “that in doing so he layd hold on my hand and did wring one of my fingers sorely so that for the present it did greive me very much.” William then recalled that the person stated: “Remember that this is a boundary stone and it is a boundary to the parish of Exford.”

Not to be outdone, in 1635, Robert Fidler testified in the matter of a boundary dispute that as a boy he “had his eares pulled and was set on his head upon a mearestone neere to a newe ditch of Ormisirke Moore and had his head knocked to the said stone to the end to make him better remember that the same stone was a boundary stone.”

The ritual of perambulation, or beating the bounds, can still be found in some communities. Although antiquated, it nevertheless incorporates sound legal purposes and principles. During colonial times, it was required that owners of adjoining land walk and inspect their common boundaries yearly. The law also stipulated a penalty for those who failed to comply. More recently, in New England, municipalities are required to inspect and renew their bounds periodically. This remains the law in several states, although most do not carry out the “letter of the law.” Some towns still undertake this job faithfully by surveying and marking their boundaries, and with new technology they are placing coordinates and global positioning system (GPS) values on monuments and corners. This ancient practice ensures landowners and others of the “true and correct” bounds and helps relieve surveyors of possible future surveying costs that are necessary to determine such lines when they are coincident with private boundaries. Yet disputes still arise when surveyors apply modern technology to ancient boundary descriptions. The practice of beating the bounds

was replaced in 1677 by the enactment of the *Statute to Prevent Fraud (Statute of Frauds)* that required a written document be presented in order to have a cause of action for certain legal problems and to transfer an interest in land.

An examination of many early English maps and names reveals that some disputes were centuries old when William the Conqueror arrived to turn the Anglo-Saxon world into turmoil. Here is a selection of some of the names on present-day maps in the United Kingdom:

- *calenge* (Middle English): challenge, dispute
- *ceast* (Old English): strife, contention
- *erioch* (Gaelic): boundary
- *devise* (Old French): division, boundary
- *flit* (Old English): strife, dispute
- *fyn* (Welsh): end, boundary
- *grima* (Old Norse): marker boundary blaze on a tree
- *ra'* (Old Norse): landmark boundary, settlement on a boundary
- *skial* (Old Danish): boundary, boundary creek
- *terfyn* (Welsh): boundary
- *threap* (Old English): dispute

Few of these names were adopted in the United States or carried into American English and indicated on our maps when English common law was accepted, but we have developed our own words to describe the problems that result from boundary disputes.

The historical result of this ancient practice is that today in England the number of land surveyors who practice land boundary surveys to settle boundary disputes is probably less than 100 for the entire country.

1.6 ROLE OF THE SURVEYOR IN BOUNDARIES

Principle 3. *A described closed boundary identifies a claim of right to any property interest for which any person can make a claim of possession through a claim of title. These boundaries may be either macro or micro in nature.*

The surveyor should be able to make a distinction between the types or classes of boundaries that may be encountered. There are boundaries—and then there are boundaries. One will find both macro and micro boundaries. A *macro boundary* may be an international boundary between nations or between subdivisions of nations; a *micro boundary* is a boundary on a local level, such as between land grants or, possibly, between individual parcels of land. Surveyors can become involved with boundaries in two separate and distinct ways: those that represent major proportions or areas, which are *macro boundaries*, and others that are smaller and parochial

in nature, which are *micro boundaries* (see Section 3.2). Few surveyors have the opportunity to create or retrace macro boundaries, but most surveyors are intimately involved with micro boundaries. Few retracing surveyors are asked to create or retrace international boundaries, state boundaries, or country boundaries that may be disputed; however, many of the boundaries they create or retrace will be of small parcels of a single lot or subdivision. A list of possible distinctions between macro and micro boundaries is provided in Section 3.2.

Although the methodology of creating macro and micro boundaries may be similar, the application of law may be entirely different when retracing these boundaries. The surveyor creates these invisible boundaries, which are a product of the work of the instruments used, the capabilities of the surveyor, and the methods employed in conducting the work.

Usually, the original surveyor creates the boundaries of land parcels through actions and/or words and according to the law. Once an original boundary is created and described, that description remains in effect forever, legally. According to federal statutes as well as common/case law, those lines remain fixed in perpetuity, from the time the first property rights are conveyed in reliance on the lines and corners described. Subsequently, the same surveyor or another surveyor or surveyors are the individuals who retrace the boundaries that were originally created and who may create new evidence for future surveyors to search for.

The first belief that any surveyor should have when entering the area of boundaries is that any boundary dispute can be resolved with the help of knowledgeable experts and with reasonable people as clients. The only problem one may encounter is that some disputes may take longer to resolve than others. One person stated that it required the death of the original parties to resolve a boundary dispute. Some disputes may be prolonged for generations, even to the point that they are identified on maps and become sealed in history. At that point, the origins of disputes become lost in history. One of the longest historical disputes in America was the Hatfield and McCoy feud, which crossed the state line between West Virginia and Ohio. What started as a simple timber trespass by Hatfields on McCoy lands, over the state lines, escalated to killing pigs and then scores of people in the two clans. The dispute lasted for over 100 years.

In examining British Ordnance Survey maps, one sees names such as Threapwood and Threapmuir. Threapwood is found in Wales near Wrexham, a tract of disputed land that belonged to no county, parish, or township. The residents were found to be paying no taxes and were subject to no local courts. It was a true no-man's-land. The boundaries had been disputed for centuries, and no county had ever gained authority over the people and the land. Similar situations exist in all U.S. states, in both public land surveys and in state-surveyed areas. As recently as 1994, surveyors in Louisiana discovered a "lost" strip of land between two federal townships that resulted in many legal problems for many occupants who had been residing and transferring the land without benefit of an original patent; in 2002, two parishes were still disputing their common boundary.

Many other macro boundaries are being disputed between countries and countries. Today, the states of Connecticut and Rhode Island are disputing a common

boundary that was created in the 1700s. Recently, what should have been a simple described line between the states of Georgia and South Carolina was settled by the U.S. Supreme Court when it determined that the original definitive boundary—namely, the center of the river, with all of the islands belonging to Georgia—had been changed by estoppel. The most recent boundary problem faced by Georgia is the north boundary with the state of Tennessee. The original charter calls for the “parallel 35 degrees.” In 1811, the creating surveyor told the commissioners that his equipment could obtain a precision of only plus or minus 1 mile. The line was run and monumented. Recent precise measurements place the run boundary 1 mile south of the parallel. Georgia, facing a serious water shortage, now wants to change the boundary 1 mile north so that it hits the Tennessee River, which would give the state the ability to extract water from the river.

In a major boundary problem between England and Scotland, the dispute over the Threpe lands was settled in 1552 by digging a ditch and giving half to each of the disputing parties. The ditch, called Scots Dyke, is still in existence. Here in the United States we do not have that flexibility.

The British left us with a legacy of boundary disputes but also with one of attempting to make permanent those important markers that identify land boundaries. A reference to today’s Ordnance Survey maps will indicate such boundary landmarks as the Navelin Stone, which was established in 1200. This stone, also called the Avellan Stone, is identified in the charter established in 1210 depicting the boundaries of Cumberland in England (see Figures 1.4 and 1.5).

In other early attempts to resolve boundary disputes by legislative and legal means, the English tried to rely on boundaries identified by the centerlines of roads.



Figure 1.4 The Navelin Stone, marking the boundary between Brisco and Cleator, Cumberland, established in 1200. (Courtesy of Prof. Angus Winchester.)

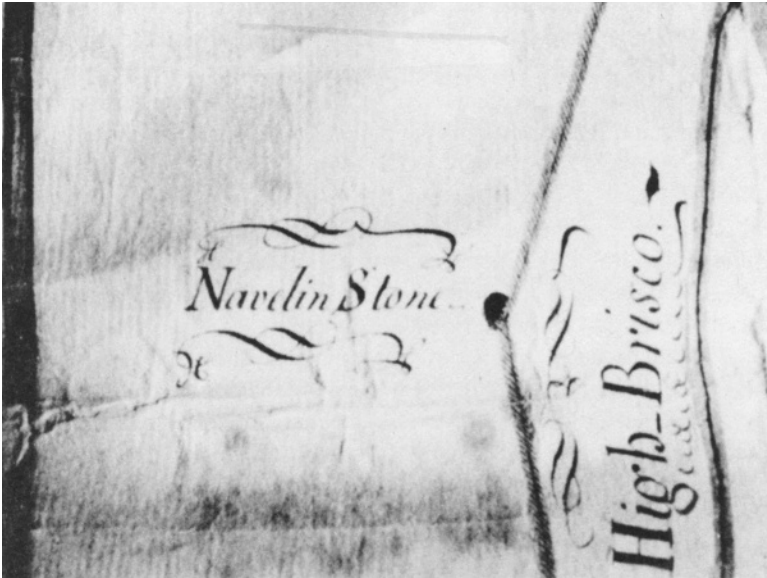


Figure 1.5 The Navelin Stone depicted on a boundary map drawn in 1750, 550 years later. (Courtesy of Prof. Angus Winchester.)

To aid in maintenance and care, local governments were given authority to modify boundaries and give each governmental unit half the length of the road and responsibility for its entire care. The philosophy adopted was that all stones and markers placed along boundaries give tangible substance to those boundaries. In many instances, when the boundary stones were erected, proper names were given. Today, one can find such names as Kingstone, Earlestone, Sir Steven's Stone, Sargeant's Stone, and Attorney's Stone, all recording a long-forgotten history.

It must be remembered that even though boundary stones were very important, they did not eliminate other forms of boundaries, including natural boundaries. Such boundaries, or natural objects, are discussed to some extent in subsequent chapters because many judges, attorneys, and surveyors misunderstand their significance as controlling elements in boundaries.

Clients should expect surveyors to be expert measurers and collectors of data and evidence of boundaries. The work is not necessarily limited to land boundaries but could include boundaries above and below the surface of the Earth. In the event of a dispute, the surveyor's purpose becomes that of presenting these measurements, and the evidence recovered, to the court and jury for their deliberation and consideration. Hence, their skills and knowledge of the science of these measurements should be positive and should never be deficient.

Surveyors are the nexus of boundary issues in that they create them, they may describe them, and then they may be asked to retrace them or relocate them. The time frame between any two of these phases may be hundreds of years.

Surveyors create evidence and describe the evidence created in their own words; then they recover the evidence so as to have juries interpret it; and finally, to have courts apply the proper laws of evidence, they apply meaning to, and determine the intent of, legal documents that land surveyors and attorneys use to describe and locate land and boundaries of rights and interests, which we describe generally as *landownership*.

In this book, it is assumed that surveyors possess the mechanical measurement skills that are necessary and essential to create and locate boundaries correctly. Yet in today's modern technological world, new areas are evolving with which the student must become familiar: for example, geographic information systems (GISs), global positioning systems (GPSs), and many other areas of pseudo-measurements that some wish to substitute for measurements. To understand boundaries fully, the student must first understand that measurements, actions, and words are the foundation for boundaries.

Measurements that create boundaries, measurements that are used as evidence of boundaries, and the words used to describe boundaries are all important elements and become controlling elements for the surveyor. The person who specializes in boundaries should realize that a dual responsibility is placed on surveyors.

First, a boundary between two individuals (estates) could not exist without being created. The boundary created not only can describe a parcel of land but can also be used to describe multiple interests within a boundary of the same parcel of land. Second, the boundary created must be relocated and identified at some time. In this phase, the surveyor will be required to take the description and, using those words, locate the parcel on the ground. This may require the surveyor to disagree with his or her peers as to what the words actually mean or what the evidence indicates. It is in this phase that disputes seem to arise, for no two persons see evidence in exactly the same light.

Unlike in other countries, surveyors in the United States do not have the authority to locate legal boundaries that are binding on all the parties involved. Their responsibilities lie in the area of interpreting legal descriptions and then placing these descriptions on the ground by conducting surveys to recover evidence of prior work or surveys. In addition to locating these title boundaries, surveyors may be called on to:

1. Locate the limits of possession.
2. Locate the limits of the claim of ownership, either under color of title or not under color of title.
3. Locate improvements on property.
4. Locate and describe rights and interests in land.

1.7 WHAT IS BEING CREATED? WHAT IS BEING LOCATED?

Principle 4. *A person or landowner can legally convey only the quality and quantity of interest in land to which he or she has title.*

The surveyor who creates a boundary line creates nothing but an invisible line that is only described by numbers, yet no line can exist without its endpoints, the corners; in order to be a definite line, there must be a corner at each end of the boundary line. This principle was first identified by William Leybourn in his historic survey book, *The Compleat Surveyor*, in which he described a line as being “created by moving out of a point from one place to another so a line is thereby created, whether straight or crooked. And of the three kinds of *Magnitudes* in *Geometry*, viz. Length, Breadth, and Thickness, a *Line* is the first, consisting of *Length* only, and therefore the *Line* A B, is capable of division in *Length* only. . . .”⁵

The surveyor who creates boundaries locates or creates nothing more than invisible lines and corner points that exist as legal fictions between property rights. Boundary lines without any other support have only legal dimensions; they have no physical dimensions until fences are constructed on the invisible lines; these fences are called for and identified in documents that are in the chain of title, or trees are marked and identified in field notes as *line tree* or *tree on line* and then that tree or trees become a reference indicating what it was that the creating surveyor intended. A boundary exists because the law permits it to exist, yet one cannot feel it, touch it, or see it; it is not manifested in any way by a dimension of width, only length. However, once it has been created, it has legal authority. One neighbor cannot cross over a neighbor’s invisible boundary without being in trespass, and possibly being responsible for damages.

Regardless of the position of the surveyor, the responsibility that is assumed is that of creating or identifying rights and interests in land. Rights and ownership are related and are often confused, but they are not the same. The ownership of a land parcel carries with it responsibilities and liabilities, whereas rights will give a person, whether or not a landowner, certain legal rights that can be addressed in the courts.

Usually, to have a boundary created, that boundary must have terminal points, or *corners*. Each boundary line is controlled on each end by a corner, which may or may not be monumented. But in the event that the controlling corners are unmonumented, those corners have the same legal dignity as monumented corners.

In most instances, once a boundary is created, there is no need to resurvey that originally created boundary as long as the land is in the original ownership. A resurvey is required only when the originally created evidence becomes so questionable that a retracing surveyor is unable to find it or when a transfer of the property is contemplated. Boundaries are usually retraced in the event that the parcel is sold or a dispute arises when an adjoining boundary line is ascertained. As such, a new survey will identify the existing conditions of the boundary lines at the time of the recent conveyance but written in terms of the original description. Such a survey should identify the condition of the original corner monuments and should also redefine the definition of the courses (bearings and distances) in more modern terms. This is defined as a *retracement*. The practicing surveyor must be able to make the distinction between original surveys and retracements—this skill is absolutely required of the modern land surveyor.

In the process of attempting to understand boundaries and the various aspects of boundaries, the original boundaries of any parcel are created by the original

survey; once an original boundary is created, it can never be re-created once rights are granted to the boundary. From that point on, unless the original creator conducts either a dependent or an independent survey, subsequent surveyors can only conduct retracements. Title and boundaries are symbiotic.

1.8 ORIGINAL WRITTEN TITLE

The concept of title to land is unique to English law. The migration of Europeans to the New World resulted in a basic conflict with Native American beliefs and practice.

The European concept is primarily an English concept of landownership and its use. Native Americans had no known concept of written title, and at times uses by different tribes overlapped. Although tribes did recognize areas of specific claim or use, they held the belief that no individual or individuals could own land. Individuals only had the right to *use* land, and land was composed of certain rights of usage.

The English brought with them the concept of written *title*. Title as we know it was unknown to Native Americans. Possession was paramount. Today, we assume that most boundaries are defined in some sort of title document: a deed or a will, for example. Yet this is not entirely true. The law provides for and permits boundaries by several other means. These are discussed later in this book.

A very simple explanation of *land title*, which is separate and distinct from a land description, holds that it usually is a written document or legal instrument by which one can claim ownership to a separate and distinct identifiable parcel of land or property.

As the courts have recognized it, title may be considered as originating from varied sources, including: (1) conquest, (2) royal grants from a foreign power, (3) grants of original crown lands from one of the original states or from another state, (4) grants or patents from the U.S. government from land considered originally as being in the public domain, and (5) lands in the form of newly created lands.

To claim lawful possession, one must have a claim of ownership, which usually is exhibited as a document purporting to give ownership. Regardless of how title to a person's property originated, potential problems might be uncovered by the surveyor that could cause problems in the location or relocation of boundaries. Several of the 13 original states not only granted lands within their original boundaries but also granted, with or without authority, lands outside these boundaries, usually under the terms of their original grants as they were and are interpreted. This situation happened between Tennessee and North Carolina; Virginia and West Virginia; Connecticut and Massachusetts; Virginia and Ohio; and New Hampshire, New York, Georgia, South Carolina, and Vermont.

Today, in any particular situation, the surveyor or attorney must consider whether the question is one of title—who owns it and how much—or one of boundary—what and where the boundary is. This permits a court to determine what a person owns or who has better title to a parcel of land, even if it is considered as being unsurveyable or unlocatable.

1.9 RIGHTS AND INTERESTS IN LAND ARE COMPOSED OF A BUNDLE OF RIGHTS

Rights and ownership are related but are not the same. When a person owns a parcel, usually that person has the right to timber, water, minerals, and possession. Each right may be described, identified, and conveyed, and the owner may convey all of the rights, yet retain the right to pay taxes.

The original surveyor creates the boundaries between individual rights, and, once these rights are created and the original owner relies on these boundaries, no one, other than those who are beneficiaries, can change these boundaries. To understand what is being created, the surveyor, the attorney, the real estate agent, and especially the courts must understand the distinction between *title*, *property*, and *rights* or *interest*.

Title is the means or vehicle, usually documents, by which one acquires an estate. *Rights*, such as the right to take minerals, are attributes that a person may hold by being a landowner. A person holding a lien on land may have an interest but not a title, depending on the respective state where the property is situated. *Interest* and *title* are not synonymous.

Property may be considered as corporeal, meaning some right that describes a tangible element: a house, trees, a fence. The primary function of the surveyor has been in regard to rights, and interest in land has been to define these elements. The title to property is the exclusive domain of attorneys. However, as surveyors' responsibilities, identity, and capabilities have been changed and redefined by the courts, in many jurisdictions the surveyor is no longer prohibited from giving an opinion about who holds the title to a piece of real property.

The surveyor must be able to understand title but should refrain from giving opinions as to title issues.

Whatever rights or interests a person may have in land today are controlled and regulated by the laws of the state in which the land is located. The federal government has control over the public domain, Native American lands, lands involved in bankruptcy, state boundaries, navigation, lands seaward of state boundaries, and air rights crossing state boundaries (violations of air quality). Although no "law school" list of specific rights that attach to a person's land exists, certain "common-law" rights are recognized:

1. The right to dispose of property, not inconsistent with the law.
2. The right to have land free from interference.
3. The right to support of property, both subjacent and laterally.
4. The right to use waters that flow through or on property.
5. The right to any waters that flow through or touch property.
6. The right to all space above and below surface boundary lines.

7. The right to possess the property.
8. The right to convey or gift the property to second parties.
9. The right to use legal methods to protect these rights.

As stated, land is composed of assorted rights, both corporeal and incorporeal, that are held together by ownership or title. These rights were identified very early in English law. Jurists first identified the *bundle of rights* as extending from the center of the Earth to the accolades in the heavens. Some of these rights included, but were not limited to, timber rights; air rights; mineral rights; the right of possession; water rights; and the right of ingress, egress, and regress. These rights can become confusing and conflicting, as in Alaska, where Congress granted surface rights to one group of individuals and the subsurface rights to a second group.

Each right may be independent of the exterior boundaries of the parcel and may have boundary lines that are separate, distinct, and independent of the exterior boundaries of the parent parcel. In this situation, a landowner may ultimately convey numerous rights, and the surveyor may ultimately survey numerous boundaries within the parent parcel. This bundle of rights has been described as and likened to numerous straws, held together by the belt of landownership, each right with its boundary identified by its name and having its own separate description, boundaries, and rights to the holder. According to this concept, separate owners can each hold one or more of the straws in the bundle, and, as such, each owner would have a vested interest in the entire parcel. A surveyor may be asked to determine the source of a nuisance that violates a right, or he or she may be the cause of a nuisance in the form of trespass by the surveyor or his or her assistants.

Basic U.S. real property law has its foundation in English land law, originating in feudalism. After A.D. 1066, all lands under English rule were considered as if owned in total by the reigning king, William I. William made conditional land grants to his followers, to specific English barons, and to certain individuals who submitted to his control. The grantees became holders of the land, or *tenants*. Because all grants were made in return for services by the tenant, the terms of the holdings under which each tenant held were free or unfree *tenure*.

Free tenure was divided into (1) *military or knight service*, wherein each knight was required to give a number of days each year in defense of the king; (2) *spiritual or Frankalmoigne tenure*, which required prayers or spiritual duties for the king; (3) *socage tenure*, which consisted of nonmilitary duties such as providing the king with crops or cattle; and (4) *serjeanty*, wherein personal services were provided to the king. Once each person provided the identified and specific tenure, his or her remaining time was his or her own, and the person could use the property freely in any manner so chosen. These four forms of tenure later became known as *freeholds* or freehold estates.

Serfs held their land under unfree tenure, in that they were bound to the land and could not use any of it for their own purposes. The main point in the feudal system is that the person who held tenure was also in possession or *seisin* of the property. Upon the collapse of the feudal system, only socage remained, from which we retain freehold estates.

Under early common law, the people who possessed seisin in reality owned a collection of rights incident to the land. The tenant holder's rights became known as his *estate*. Estates differed primarily in the length of time for which they might exist. In modern legal and technical senses, an estate is the degree, quality, extent, and nature of the interest that a person has in real property. Some find the term *estate* confusing in that it may define the *corpus* ("body"; either real or personal property or both), as in "all of my estate," or the *rem* ("thing"), as in "fee simple estate." An estate may be either absolute or conditional. In most instances, *fee simple* connotes absolute. Today, all estates are classified as freehold or non-freehold (less than freehold). Freehold estates are divided into fee simple, fee tail, and life estates.

A fee simple estate is the highest and greatest estate in land that one can obtain. Those who possess a fee simple or *fee simple absolute* estate are, for all purposes, the owners of the land. The words *fee simple absolute* in reality are not a single term; each distinct word carries a meaning that explains the entire term. *Fee* denotes that the estate is one that can be inherited or devised by a will or other documents. *Simple* denotes that the estate is not a fee tail estate, wherein the estate must be inherited by a specific person. *Absolute* means that there are no conditions or limitations so far as time is concerned on the estate, and this estate may continue forever (not like a fee or an estate that may be determinable upon the happening of an event), either precedent or subsequent.

Fee tail or *estate tail* is an early English type of estate, which in all probability was borrowed from the Romans. It is a true freehold estate limited by the grantor to the heirs of the grantee's body or to a special class of people, either male or female (e.g., the eldest, the youngest, or other). If the conditions are breached (no male or female heirs are produced by the grantee), the estate reverts to the grantor or his heirs at law or the sovereign. In the United States, individual states have determined that this type of estate, if adopted as part of English common law, that a conditional fee was present, and that upon the birth of a child it was converted to a fee simple estate,⁶ or that statutes eliminated the estate and any reference to *fee tail* it then is converted to connotes *fee simple absolute*.⁷

A *life estate* is considered a freehold estate because it can be conveyed to a third party, yet its duration is measured by some life. In essence, the life estate lasts only for the life of some person. An *ordinary life estate* is normally worded "to Jones for life and then to Brown in fee simple." An *estate per autre vie* has a measured life other than that of the holder of the estate and may be worded "to Jones for the life of Brown and then to Smith in fee simple." This estate and the right of legal possession terminates with the death of Brown.

Life estates may be created by expressed provisions or words in a will or deed or by contract between heirs or parties in interest. If a question exists as to the creation of a life estate, the courts will look at the precise words used. Terminology such as "to Mary Jones as long as she remains single" has been interpreted as creating both a life estate in Mary Jones and a fee simple estate.⁸ A person who receives a gift of "rents and profits for his life"⁹ or "the right to occupy the land as long as he may live"¹⁰ has been construed to receive a life estate. A life estate may also be created by an operation of law wherein a surviving spouse is granted *dower* (for a widow)

or a *curtesy* (for a widower). The law varies from state to state, and the prevailing statutes must be consulted.

The holder of a life estate has the right of possession, as with all freehold estates, but not all the rights of a fee simple absolute holder. He or she may not commit waste of the estate by reducing the value of the estate or by making unreasonable use of the estate proper (e.g., cutting timber, destruction or removal of minerals or structures, or improper placement of improvements). The holder of the life estate is obligated to pay taxes, to make all necessary repairs, and in some instances to provide the necessary insurance to protect the property.

A life tenant may convey any and all interests possessed but cannot encumber the property beyond the life conveyance terms. All conveyances purporting to convey any part of the remainder estate, without the prior approval of the remainderman, are void.

A surveyor should never go beyond the words in the document.

In Pennsylvania, some land was sold with *quitrent*; that is, the purchaser had to pay the seller a regular quitrent (a payment in money at specified intervals, theoretically, forever). This right was voided by the courts.

Whenever an estate is in question, the court attempts to convey a perfect estate or as large an estate as possible. Although the final decision is a legal one, it is important that surveyors or other people who research land records have knowledge of possible legal implications. In areas where surveyors commonly research legal records needed to conduct a survey, they should be able to recognize wording that could affect the interests of their client. If a researcher neglects to call attention to a possible problem and the client suffers damages, the researcher could be held liable and responsible.

1.10 ROLE OF THE COURT

All aspects of real property rights are protected and litigated in the respective state in which the land is situated by the Fifth Amendment of the U.S. Constitution. The Constitution does not address real property rights as such except in the instance of the annexation of property for the public good. Thus, for any real property issues associated with the federal government, the law of the respective states in which the land is located applies, *lex loci*.

Since the titles to land in the United States originated from various foreign sources, and the Constitution recognized all prior valid rights in land, approximately 20 states are legally recognized as *metes and bounds states*, basing their real property and survey system on English common law, and that law applies in situations regarding land title and boundaries. In states that base their titles and surveys on the Public Land Survey System that originated under several public land laws, those laws apply under which the lands were surveyed and patented.

The role of the court in title and/or boundary questions is much different from that of the surveyor or the attorney. The surveyor's responsibility is to collect evidence of past boundaries described in documents, to collect evidence of possession and use, and to create new evidence to be left for future surveyors to recover. In questions of title or boundaries, the surveyor can then be called on to testify and give opinions to help the court or the jury understand complicated areas. Usually, an expert is not required if the facts are within the capabilities of the jury to understand. Surveyors should not be considered as advocates for a particular client or position.

Attorneys, on the other hand, are the means by which legal questions are presented to the courts. They are advocates, espousing the position of their clients, right or wrong. At times it may seem that surveyors are advocates, but one must differentiate between honest differences of opinion among surveyors and the advocacy of a surveyor who may seem to be an advocate.

What boundaries are is a question of law; *where* boundaries are is a question of fact.

The courts are present to apply the various laws, both statute and common, to the facts presented. If there is a question as to the facts, it is in the province of the jury to decide what facts to believe and to apply. In most states:

In actual practice, the surveyor may encounter numerous attorneys and judges who do not understand this principle and maxim.

In applying this statement, courts will attempt to ascertain the application of common-law doctrines, such as adverse possession, estoppel, and agreement to boundaries, whereas juries will determine which of the two surveyors is to be trusted in testimony and how much weight should be given to any evidence and the resulting facts. Surveyors will ascertain the interpretation of words in a description that is contained in a deed, and the jury will determine which of the two is correct, whereas the courts and the judge will determine whether the deed meets the requirements for legality and sufficiency. A court or legislature cannot bestow this authority on any person or agency.

Because of the court's exclusive right to determine the meaning of words contained in a conveyance that is being questioned and then to determine where that parcel is located according to the description, it is necessary for surveyors to know and understand how courts interpret these meanings and what order of importance to place on them.

1.11 REAL AND PERSONAL PROPERTY

In most instances, the surveyor's concern as to the differences between real and personal property (see Figure 1.6) is of minimal interest, but to the client, these differences may be of extreme value. *Real property* is fixed, immovable, and permanent, whereas *personal property* is consumable, can be destroyed, or is movable at will. At times, the distinction between the two may not be clear, yet it must be made.

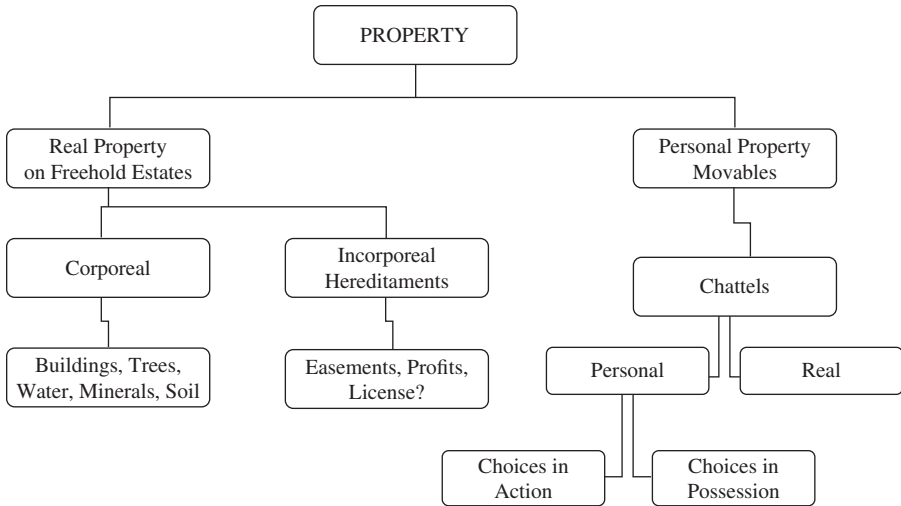


Figure 1.6 Classification of property as real or personal.

Standing timber is realty; cut logs may or may not be personalty. A surveyor's failure to report cut logs observed in hot or cold decks in the course of a survey may result in liability if the client suffers damages by the surveyor's failure to do so.

Crops are considered personalty, but title may pass with the land. Perennial shrubs are realty, but nursery stock is not. Tree seedlings in heeling beds are personalty, but the exact same seedlings planted are realty. Fence posts in a pile are personalty, but the same posts in the ground may be realty. A surveyor's failure to identify pine seedlings in heeling beds behind a barn resulted in the client being sued for a large sum of money because the seedlings were considered as realty by the lessee of the vendor. The actual determination of classification (real or personal) rests on fact (evidence) and not necessarily on law. Under our judicial system, questions of evidence are determined by a jury. The classification is important because if property is realty it is governed by the Statute of Frauds, whereas property that is personalty comes under the Uniform Commercial Code.

Local laws or state laws determine questions of deed construction, boundaries, sufficiency of descriptions, rights of inheritance, and any other questions dealing with land. Thus, surveyors should be knowledgeable about these areas.

1.12 WHAT CONSTITUTES REAL PROPERTY

Principle 4. *A person or landowner can legally convey only the quality and quantity of interest to which he or she has title.*

Title to land does not constitute real property. Title in real property law is the right¹¹ or means by which one can claim just or legal possession to a parcel of land. In the true sense, to determine boundaries, the surveyor generally uses the same documents as an attorney uses to inspect and comment on title.

Land is the solid material of the earth (soil, rock, clay, sand, lava, minerals, and so on). Real property has become synonymous with land. In its broadest description, real property is four-dimensional. The average surveyor, attorney, and court visualize real property or land in only two dimensions, *length* and *width*. Yet visionary surveyors are able to see that land or real property is also composed of *depth* (including height) and *time*. The third element, depth, in addition to surface rights, has been interpreted by the courts to include subsurface rights in minerals, waters, and passage, as well as aerial rights and the space above the land itself. English common law and the courts in the United States also recognize a fourth dimension: time. Time can describe or indicate the duration of the legal rights in real property that the vendor has to convey. Since ancient times, land has been considered as immovable or fixed in position. Hence, the courts and the resulting case law treated land as unique and considered the location of each parcel as definitive and distinguishable.

The common-law rule wherein the owner of the surface fee owned everything above the surface has been modified by case law, primarily because of air navigation. Today, the general rule is that the owner of the fee owns whatever airspace he or she can control or use, but the theories and case law on the use and control of airspace are not uniform from state to state. An action in trespass lies against anyone who violates a person's airspace, surface, or subsurface. Of course, this is in theory only and is not practical. Technically, airwaves, sound waves, air flights, or other violation of airspace is trespass, and under common law a surveyor would be prohibited from using electronic distance equipment across a person's property. It is doubtful that this concept could be enforced in court today.

With the advent of high-rise condominiums, parties buy and use rights to airspace within rooms. At times, surveyors have been asked to define, locate, and describe certain air rights in relation to signs, elevated walkways, and scenic or visual parameters.

In ancient law, underground waters were considered as part of the soil itself; thus, ownership was in the name of the surface owner.

Some states have legislatively separated water rights from the bundle of rights and treat these rights in a different manner, to the point that when a fee simple deed is drafted, water rights are not included in the conveyance and a separate deed is required to convey water.

In recent years, several states have modified this concept because they now consider waters as migratory in nature and as being owned in common; that is, the surface owner owns the waters in common with other landowners and has the right to use a portion of the waters for his or her benefit. Government may regulate the rate of pumping according to prior rights granted and for the common good. The courts may hold a party responsible for a decrease in water quality, as well as for detrimental damages to adjacent property caused by altering the flow or course of the runoff. In these instances, the surveyor may be called on to map or to identify water courses or to prepare topographic maps that will identify certain aspects of water.

Mineral ownership includes ores, coal, gravel, sand, oil, and gas. Even though oil and gas are classified as minerals, they are migratory in nature and are incapable of absolute ownership as a thing in place. The surface owner has had an exclusive right to drill, produce, and retain all oil and gas brought to the surface. In recent years, the tendency has been to change the law so as to require unit development of oil fields.

With respect to the ownership of lands adjoining tidewaters, lakes, or rivers, riparian rights attach to the land. However, the nature of riparian rights is still being determined by our courts. This complex subject is reviewed in Chapter 9—Riparian and Littoral Boundaries.

Vines, trees, crops, shrubs, and other growth (*fructus naturales*) are considered for most purposes as part of the land to which the roots are attached, yet there may be certain circumstances in which they are considered as personal property. A failure by the property surveyor or topographic surveyor to identify clearly the condition or state of certain *fructus naturales* may result in liability upon him or her. As a general rule, unless crops are reserved in writing, they pass with the sale of the land, and usually the requirements are clearly described in the Statute of Frauds. We do not discuss fixtures on property in this book because their treatment varies from state to state.

Principle 5. *In most instances, there are no federal laws describing real property rights.*

One of the basic aspects of the U.S. Constitution is that any areas not reserved by the federal government are delegated to the respective states. Since, in the formation of the Constitution, real property rights were not retained by the Framers, by default the respective states had virtual authority over individual and real property rights.

Thus, when any agency of the federal government either sues or is sued over aspects of real property, the law of the location of the property, or *lex loci*, is the respective law to apply.

The U.S. Constitution is a creation of reserved rights and not delegated rights. What the Framers decided to delegate to the states they failed to mention in the Constitution.

Principle 6. *Although there are no federal laws of real property, property rights are identified by state laws and are protected by the U.S. Constitution.*

When decisions relating to real property rights are litigated, even with the federal government as a party, state laws control the litigation. This may not be so if a boundary problem is at issue. Control over real property falling within all state borders were not retained by the federal government. As States entered the union the 14th and the 5th Amendments became controlling

Principle 7. *Real property rights are determined according to the laws in effect in the particular locale where the land is located. English common law is the predominant law, and it is described as the *lex loci*.*

Although there is no federal law of real property, there exists federal survey law that is applicable to those lands that originated from the General Land Office (GLO) system of surveys. The first federal law enacted, still in effect today, was the Land Act of 1785. It was this act that created the entire GLO survey system. The act was modified and supplemented with subsequent federal laws, which are still in effect.

Although few states have enacted statutes to direct and control state surveys, most states apply common-law principles to the location of boundaries. Although several states, including Georgia and Texas, enacted surveying statutes to control surveys of their lands, most of the states in this category have relied on common law. In the modern era, many states have enacted statutes to control the creation of boundaries for subdivisions and other surveys of large parcels.

1.13 NATURE OF MODERN ESTATES

Although most surveyors are not involved in having to determine the effect of an estate on the survey, the modern surveyor should be familiar with what constitutes an estate. This is important in that the modern surveyor usually recovers more and much older documents than does the attorney. The surveyor may uncover documents that may have a great legal effect on the final determination of the case.

By law, an *estate* is the interest that a person has in real or personal property. The word is sometimes used to mean the property or assets of a person, such as in “the estate of John Doe.” In general, real estates are classified by the time of enjoyment, and they are identified as follows: (1) estate in fee, (2) estate for life, (3) estate for years, and (4) estate at will.

An *estate in fee*, sometimes called an *estate in fee simple*, is the most absolute interest a person can have in land. It is of indefinite duration and is freely transferable and inheritable. The duration in fee could be considered as being “in perpetuity.” More than one fee can be held on a given parcel of land; for example, one person may have the fee to minerals and another the fee to the land, excepting the minerals. A *defeasible fee simple estate* is one in which a future event must be met. The title is conveyed on the condition that certain things will be done within a time limit or that certain things will never be done. A fee may pass on the condition that a storm drain is installed or that the property is never used to sell alcoholic beverages. Restrictions of various natures have been placed, even to the point of prohibiting the use of property for “immoral” purposes.

An *estate for life* is an estate limited to the life of the person or persons holding it.

An *estate for years* is usually created by a lease between two parties whose relationship is that of landlord and tenant, such as a lease to use a parcel for 10 years, conditioned on payment of a given amount of money or other consideration.

An *estate at will* may be terminated at any time as described by law or contract.

1.14 TAXES ON LAND AND TAX MAPS

One of the obligations and responsibilities of landownership is the requirement to pay taxes on any property titled in the landowner's name. A landowner will find that there are numerous governmental agencies to which taxes will be owed. Taxes for the operation of governmental services, taxes for police, taxes for waste disposal, school taxes, and even income taxes can affect the ownership of property.

Usually, land parcels are located on tax maps and identified by a land parcel identifier that shows a *jigsaw* compilation of land parcels that are identified by the names of the record holders of the individual parcels. In most instances, little or no effort is given to accurately locate the individual parcels in relation to each other. Courts have held that tax maps cannot be used as evidence to ascertain boundaries; they can only be used to identify who is paying the taxes on the parcel.¹²

One of the police powers enjoyed by governmental bodies is the right to appropriate any lands for the nonpayment of taxes. If and when this is done to a parcel of land, different legal principles may apply concerning property rights and encumbrance on that parcel of land.

Some surveyors are prone to use tax maps to identify land boundaries. Courts are hesitant to permit this use because this type of map usually is not sealed by a surveyor and does not meet minimum standards of map preparation. They will permit the limited use to identify to whom the tax bill was sent and who paid the taxes. Courts have held that a tax map is admissible for limited purposes. The Vermont case of *Bull v. Pinkham Engineering Assocs. Inc.* states that "tax maps are not intended to be used in establishing boundaries on any survey, and it would not be in accordance with professional surveying standards to do so."¹³

The New Jersey court had this to say about maps: "[Z]oning involves more than looking at a map and drawing what appears to be logical or natural boundaries. It is more than an exercise in plane geometry. The mere observation of a plat map, tax map, or zoning map will lead to misleading abstract deduction and error."¹⁴

1.15 EASEMENTS AND LICENSES

Although of a legal nature, servitudes, restrictions, covenants, and conditions coincident with landownership should be understood by the practicing surveyor. At times, the surveyor may be asked to create such elements as a result of the work, or the surveyor may be asked to ascertain the extent, location, or possible effects that such elements may have on a parcel that is being surveyed.

When creating or relocating boundaries of servitudes, of which easements are but one area, a surveyor will be working in three dimensions. An easement may be on the surface of the ground or it may be located in the air as well as beneath the surface of the land, which may include waters. A company may require an easement or a right-of-way for an underground pipeline. In relation to any single line (e.g., a rapid transit line), a portion may be located on the surface, another underground, and, finally, some part may be elevated. These all require boundaries, which may be

transition boundaries going from subsurface to surface to above ground. A surveyor locating mineral rights may find that the minerals located are thousands of feet below the surface of the Earth. The simple construction of a building or the building of a wall on or near the boundary line may require both an accurate and a precise survey, described adequately and legally and monumented sufficiently.

Surveyors, attorneys, and the courts often confuse easements and licenses, but they are actually different in many ways. The student should learn to recognize the basic differences, because often the boundary lines become important as to location, creation, identification, and relocation. One of the more important aspects of easements is location, as well as permitted uses and, still more important, the duration.

An *easement* is one of the many bundles of rights that enjoy a boundary or boundaries. It is a type of interest that one person has in the land of another. The other types of interest—covenants and servitudes—are discussed in Section 1.16. Courts, attorneys, surveyors, and even landowners should recognize that an easement is not a possessory right, it is a nonpossessory right that permits the holder of the easement the right to only the nonpossessory use within the boundaries described.

An *affirmative* or *positive easement* permits the possessor of the easement to do some physical act on, under, or over the lands of another party. The land that benefits is called the *dominant estate*, and the land to which the easement is attached is called the *servient estate*.

Negative easements are those in which the holder of the dominant estate can prevent the servient estate holder from some use of property. These may include easements for light, air, or scenic value.

An *appurtenant easement* benefits the dominant estate or its holder and attaches to the parcel of land, not to the holder. For example, an easement acquired by the owner of a landlocked parcel for the purpose of gaining access to a road is appurtenant to the land. The easement passes automatically with the sale of the land, whether or not it is mentioned in the conveyance; it is attached to the land. The converse of an appurtenant easement is an *easement in gross*. Easements in gross usually are to individuals and are for a specific purpose. In most instances, easements in gross are for the period of time the individual has the easement.

An easement may have either precise and definite or indefinite or imprecise boundaries depending on their method of creation.

An easement in gross attaches to a person, not to a particular parcel of land. For example, an easement granted to a railroad for a right-of-way, or to a person for the right to fish or hunt on a parcel of land, or for access and use of a swimming pool on a nearby parcel, are all easements in gross that attach to a person. In one instance, a person gained free airline passage for a lifetime by granting a right-of-way.

Easements are usually limited to the use cited. An easement for ingress and egress may not be enlarged to include surface or underground utilities. Easements may be created by reference in a deed or will, by a separate document, by implication, by necessity, and by prescription. In most states, an easement in writing must meet the same requirements as those for signature and recording as a deed. Courts usually make a narrow interpretation in deciding whether an instrument conveyed a fee title or an easement. Unless expressly identified, courts usually create an easement.

The most common method of creating an easement is through an express conveyance such as a deed or will. Those deeds that describe and convey an easement strictly without deeding a tract of land in fee are known as *deeds of easement* or *easement deeds*. The deed must describe correctly the interest conveyed and must comply with all the formalities required for the transfer of an interest in land. Easements may also be created by express reservation or exception in a deed of conveyance. By exception, the grantor is not conveying that which normally would be included and is retaining that which is being excepted.

According to the general rule of law, when the owner of a tract of land conveys part of it to another, the owner is said to grant with it, by implication, all easements that are apparent and obvious and that are reasonably necessary for the fair enjoyment of the land granted. Implied easements are often sought in litigation when there is no apparent right-of-way to a landlocked parcel of land. In theory, it is not possible to landlock a parcel of land through ordinary conveyancing. Implied easements over landlocked parcels are of two types. When an owner sells off a rear portion of a lot, it is implied that he or she must furnish an easement to it. If an owner retains the rear portion of a lot and fails to provide himself or herself an easement to his or her portion, in many but not all states, he or she has no implied easement.

Easements can be created by estoppel. In legal terms, an *estoppel* is a legal bar raised by the law which precludes a person, because of his or her conduct, from asserting rights that he or she might otherwise have. For example, if Jones, by her conduct, causes Brown to believe that he has an easement and in reliance to that conduct Brown erects improvements on a landlocked parcel, Brown may have an easement by estoppel. Because Jones's conduct or lies led Brown to do something that he would otherwise not have done, Jones is denied the right (estopped) to tell the truth.

If the language of a document does not create a specific easement, the courts will examine the entire transaction or document conveying the parcel and will determine whether an easement was implied at the time of the conveyance. For an implied easement, it is necessary that a common owner of the two parcels be identified, that the common owner retain one parcel, that the use for which the easement is necessary exists, and that the easement is reasonably necessary for enjoyment of the dominant estate.

Easements may be granted because of necessity. The courts have held that if two or more parcels are so situated that an easement over one or more is strictly "necessary" for the enjoyment of the other parcel(s), they will find that an easement exists of necessity. To effect an easement of necessity, the courts examine for a "common grantor" and whether alternative means of ingress or egress are available. Only availability, not cost or convenience, is considered. An easement of necessity exists only for the period of time during which the necessity exists. Once an alternative means is available, the necessity and easement cease to exist.

The requirements for creation of an easement by prescription vary from state to state but are usually the same as those for adverse possession. They are:

1. Adverse use without permission
2. Open and notorious use

3. Continuous use
4. Use for a specific purpose
5. Use for the statutory period

Easements may be terminated or extinguished in a number of ways. As with any other interest in land, an easement may potentially be unlimited in duration or may be created to last for a limited period of time, in which case the easement expires according to its own terms. Easements created for a specific purpose expire when the purpose has been accomplished.

Easements may always be extinguished through a release agreed upon by the parties involved. In addition, easements are terminated by merger. Because a person can never have an easement over his or her own land, if he or she acquires a parcel of land over which he or she has an easement, the easement ceases to exist. Stated in legal terms, when the dominant and servient estates are united in one entity, easements are extinguished and are not revived by a later separation.

Destruction of the servient estate, as by loss of land due to erosion, can terminate an easement. Destruction of a building existing on an easement may also terminate an easement. The holder of an easement may lose or terminate the easement by increased burden or use. When an increased burden inconsistent with the original use is placed on a property, such as placing underground utilities on an easement intended for access, the courts may void the entire easement.

The owner of an easement, under certain circumstances, may terminate the easement by abandonment. Abandonment means more than mere nonuse by the easement owner; it means conduct indicating an intention never again to exercise the right. Although nonuse is some evidence, it must be joined by an affirmative action by the holder of the easement, indicating an intention to forgo the right forever. As easements can be gained by either prescription or the process of estoppel, they can also be lost by the same processes.

In summary, an easement has these characteristics:

1. It is an interest in land (*incorporeal hereditaments*) and must be created by grant or agreement, expressed or implied.
2. The interest must be in the land of another.
3. The easement is nonpossessory because the owner of the easement can only prevent interference with his or her interest.
4. The privilege to use an easement must be capable of creation (e.g., the right of a ticket holder to view an event cannot be an easement).
5. The easement should be described by definite accurate boundaries and precise surveys.

The perfect easement is unique with respect to boundaries. It has multiple boundaries, with at least three boundaries being identified. Boundaries of the dominant parcel, boundaries of the servient parcel, and boundary of the easement(s) itself.

For most land surveys, the surveyor is asked to certify that there are no encroachments on the land and/or to show easements. Liability can result for failure to

identify or recognize the use of roads, underground pipelines, power lines, and the like.

A license is a personal, revocable, and usually unassignable permission or authority to do acts on the land of another without possession of an interest in the land. The main distinguishing feature between an easement and a license is the license's revocability. An oral agreement to permit passage across an adjoiner's land without documents as required by the Statute of Frauds is nothing more than an oral license.

Many licenses never become easements. A ticket to a sporting event and a ticket to park a car are licenses. A license may develop into a contractual agreement between two persons such that if one is denied permission to enter upon the property, he or she may seek legal relief on the basis of breach of contract.

A surveyor or survey crew passing over a person's property with permission has a license. Without permission, the surveyor or crew are trespassers and, as such, assume liabilities above that of a licensee.

1.16 SERVITUDES, RESTRICTIONS, COVENANTS, AND CONDITIONS

A *servitude* is a restriction or a limited real right over another person's property that entitles the holder of the servitude to certain powers of use and enjoyment or prohibitions of use in relation to that property. In the true legal sense, the freedom of ownership of a parcel of land is restricted by a person other than the owner, who has a direct interest in the property and thus is "served." The condition of the ownership of the restricted property is termed a *servitude*, and the land itself has a burden placed upon it.¹⁵ Under Roman law the number of servitudes was limited, but under modern law a large number of rights may be placed under servitude.

By law, servitudes may be classified as real (*predial*) or personal. A *real servitude*, such as an easement, is a right or rights established in favor of a parcel of land (the dominant tenement) over a second parcel (the servient tenement). A *predial servitude* is established for the benefit of a particular estate of land and is held for the benefit of the estate and not the individual.¹⁶ As with easements, servitudes may be classified as positive or negative.

Although modern real servitudes may be unlimited in number, public policy restricts or limits the number, for it is against public policy that land be unduly burdened with restrictions. Servitudes have traditionally been classified as either rural or urban. *Rural servitudes* are concerned primarily with the land (e.g., grazing, rights-of-way, and water) and are usually positive. *Urban servitudes* are concerned with residential, commercial, or industrial property (e.g., drainage, support, party walls, light and air, sewer, and views) and are usually negative.

A *covenant* is an agreement between persons or parties that restricts the use of a freehold property. It is enforceable not only between the original parties who were privy to the agreement but by all parties who become assignees of the encumbered land. To be enforceable, a covenant must "touch and concern the land." Courts have held that it would be inequitable to permit a person to purchase a parcel at a price kept low because of a restrictive covenant and then allow him or her to sell it at a much higher price free of the restrictions.¹⁷

A covenant contained in a conveyance instrument is an agreement usually to restrain from doing certain acts and may take on certain forms:

1. Covenants contained in an agreement between more than one party, usually in the same neighborhood or subdivision
2. Covenants contained in the deed of a single parcel
3. Covenants, conditions, or restrictions contained in the deeds on the plat of a subdivision owner, binding on all owners or purchasers of lots within that subdivision

A developer or owner may convey parcels with specific restrictions recited as he or she so desires or determines are for his or her benefit or that of the subdivision, and such restrictions will be binding on all future owners as long as they are not unlawful (racial or religious) or contrary to established rules of public policy. These restrictions will be binding on all future owners whether they have actual notice or not.

1.17 ACTIONS ON BOUNDARIES AND EASEMENTS

Principle 8. *Once boundary lines are created, the contiguous lines may, by law or by the actions of landowners who have vested rights, be changed or altered.*

Most legal actions relative to land can be placed into one of the following three categories:

1. A question of title. This is primarily the lawyer's domain.
2. A question of boundary. This should be the surveyor's domain.
3. A combination of 1 and 2. This is the team's domain.

Category 2 can be subdivided into the following:

1. A question of *what is the boundary*. (This is a legal question.)
2. A question of *where is the boundary*. (This is a question of fact or survey.)

Boundaries are unique in that the invisible lines are subject to modification or alteration by various methods. In many instances, legal doctrines will legalize actions or inactions by landowners. Although the law is adamant that original lines will control, in an effort to provide some flexibility courts will recognize that under certain circumstances or conditions boundaries, once created, can be changed. Although the names may be different from state to state, the results are the same. One conflicting problem that attorneys fail to recognize is that most of these doctrines do not affect or create title. The major doctrines recognized for boundary modification or changing are:

1. Agreement, written and oral
2. Estoppel

3. Acquiescence
4. Adverse possession
5. Judicial action

These doctrines will be fully discussed in subsequent chapters.

1.18 ONE UNIQUE PARCEL OR BOUNDARY

Principle 9. *Law does not provide for two original descriptions of the same parcel.*

The responsibility of a land surveyor can be in one of two areas: as the creating surveyor or as the retracing surveyor. The surveyor cannot be both at the same time. Both have their strengths and their weaknesses. The creating surveyor is *cloaked* with the law, in that whatever boundaries are created have no error (legally).

The reasoning for this is that the two weakest elements of a description, the bearing (course) and the distance, are subject to change; as technology improves, the initial instrumentation of the original surveyor must remain in the controlling elements. The original surveyor created the *footsteps* for the retracing surveyor to find from the evidence.

On the other hand, the retracing surveyor is given the responsibility for the evidence of the boundaries that was left by the creating surveyor, or as the courts have related to *the footsteps*. The retracing surveyor only does that when he correctly does so.

Misunderstanding this principle has led to surveyor problems in that it is the surveyor's responsibility to rely on the most current description as well as the original creating description for the boundary research and retracement.

Principle 10. *Multiple boundary descriptions may exist for the same parcel, but only one is controlling.*

Land is described as a *bundle of rights*, where the composite picture of land includes such elements as minerals, soil, timber, and water, with each of these elements capable of severances and sale by the fee holder to separate individuals under separate documents and at different times and in different interests. If the fee holder decides to sell the timber rights to one person and the minerals to a second person, then two separate documents should be created, each with its own individual boundary description.

This does not preclude that all of the interior boundaries are "held together" by the exterior boundary description that is separate and distinct in itself.

These boundaries may exist independently of each other.

1.19 THE ORIGINAL BOUNDARIES ARE SACRED

Principle 11. *There can be only one original boundary survey and description; all subsequent ones are retracements.*

Along with the concept that the original surveyor creates the boundaries and that these boundaries have no error legally comes the recognition that the responsibilities of each of the two kinds of surveyors are different and distinct. The creating surveyor must first conduct the fieldwork and prepare the subsequent record, whether it be field notes or plat, to a degree of sufficiency that any subsequent surveyor will have little trouble and few problems in retracing the original work on the ground, using today's technology.

Historically, courts have made the distinction that surveys conducted to describe boundaries of a parcel of land and the accompanying interests have the following attributes:

1. They are without error and defined in the decision *Cragin v. Powell*¹⁸ by the U.S. Supreme Court.
2. They are *unassailable* through the courts.
3. They are permanent, even if no evidence is found to identify them.
4. They can be retraced and redefined by retracements, but never changed.

Principle 12. *A resurvey can be conducted only by the entity who conducted the original survey. The law provides for resurveys of parcels, but only on a limited basis and under certain restrictions, the main one being that the bona fide property rights granted under the previous survey are not jeopardized. Two classes of resurveys are recognized: dependent resurveys and independent resurveys.*

Subsequent to the original survey that created the boundaries, when certain requirements or conditions are met, resurveys may be ordered. Two classes of resurveys are recognized: dependent and independent resurveys.

1.20 CONCLUSIONS

In this chapter, the concepts of land boundaries, landownership, and related topics were discussed. The reader should glean that boundaries are created and that until people erect physical evidence, including monuments as well as fences, trees, fields, etc., on the invisible lines that were created, they exist only by law. These lines describe rights to claims to possession of real property. We also noted that land is a collection of property rights that are freely assignable and that can be divested one at a time, and which can be lost or gained through legal doctrines. With this background, the reader should have gained an appreciation of the complexity of real property that boundaries separate. The practicing surveyor, the student of surveying, the courts, and landowners should recognize that the concept of boundaries is complex, controversial, and confusing.

The retracing surveyor should be versed in the technical aspects of boundaries. Although the surveyors must have an understanding of the laws regarding

boundaries, they should realize that the making of any legal conclusions is the responsibility of the attorney.

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NOTES

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2. Farley Mowat, *Never Cry Wolf* (Back Bay Books, Benica: CA, 2001).
3. William Leybourn, *The Compleat Surveyor* (London, 1657, reprinted).
4. Quoted in “On the Origin of Property: The Myth of Property,” *Probate and Real Property Journal*, (Chicago: American Bar Association, 1992), 23.
5. Leybourn, *The Compleat Surveyor*.
6. *Antley v. Antley*, 132 S.C. 306 (1925).
7. *Ibid*.
8. Official Code of Georgia Annotated (O.C.G.A.), Sec. 44-6-4 (1992).
9. *Cochran v. Groover*, 156 Ga. 323, 118 S.E. 865 (1925).

10. *Armstrong Junior College v. Livesey*, 189 Ga. 825, 7 S.E.2d 678 (1940).
11. *Allen v. Lindsay*, 139 Ga. 648, 77 S.E. 1054 (1913).
12. *Resseau v. Bland*, 268 Ga. 634, 491 S.E.2d 809 (1997).
13. 107 Vt. 450, 752 A.2d 26 (2000).
14. *Bogert v. Washington Tp.*, 25 N.J. 57, 135 A.2d 1 (1957).
15. *Horney v. Price*, 189 N.C. 820 (1925).
16. *Black's Law Dictionary*, 5th ed., (St. Paul, MN: West Publishing, 1982), 1535.
17. *Frost-Johnson Lumber Co. v. Salling's Heirs*, 150 La. 756, 91 So. 207, 245 (1921). *Tulk v. Moxhay*, 1 H. & T. 105.
18. *Cragin v. Powell*, 128 U.S. 691 (La. 1888).