

CHAPTER 2

HOW BOUNDARIES ARE CREATED

2.1 INTRODUCTION

To understand the legal fiction of boundaries, the surveyor must be able to make a distinction between the various elements of corners, monuments, boundary lines, and property lines. All of these are different and should be addressed differently by the surveyor who creates them and by the surveyor who must ultimately retrace and redescribe them and then probably will have to defend their location in court. Unfortunately, these principles are sometimes misunderstood by students, practicing boundary surveyors, attorneys, and even the courts.

Neither the student nor the surveyor should confuse the distinction between the creation of boundaries and that of changing boundaries already created and of identifying the location of a boundary that was to be retraced. The changing of boundary lines already created will be discussed later in this book, even though the principles are legal in nature.

The following principles are discussed in this chapter:

- PRINCIPLE 1. A landowner may divide a parcel of land in any manner not inconsistent with the law.
- PRINCIPLE 2. Once a boundary or boundaries are created, no alterations or modifications are permitted in any manner by either the landowner or any surveyor once property rights have been granted or distributed according to the boundaries created.
- PRINCIPLE 3. The original surveyor creates boundaries. It is the retracing surveyor who ascertains or identifies boundaries from the original evidence.
- PRINCIPLE 4. Once created and approved, the original boundaries created are

legally without error and are the exact dimensions as indicated by the creating surveyor.

PRINCIPLE 5. No surveyor or court has the authority to alter or modify a boundary line once it is created. It can be interpreted only from the evidence of where that boundary is located.

PRINCIPLE 6. A retracing surveyor relates previously created and approved evidence to a current survey, being mindful that the current survey is always subject to collateral attack by other surveyors.

2.2 DEFINITIONS

There are several books in print that give academic and/or legal definitions of words that are important to the practicing surveyor. These are the definitions that should be used if one were to testify in court. But in many instances they fail to meet the everyday practitioner's requirements of definitions that are understood. In an effort to introduce a degree of practicality, the definitions given here are those that the practicing surveyor, student, and landowner can appreciate without legal or academic confusion.

Any list of definitions can be short or extensive. The definitions presented here are only those basic ones that are needed to furnish a foundation for future study. Corners, lines, monuments, property lines, and boundary lines may have several definitions. The following are those that the authors use to make distinctions.

A *line* in surveying and dividing grounds means, *prima facie*, a mathematical line [invisible] without breadth; yet this theoretic idea of a line may be explained by the facts referred to and connected with the division, to mean a wall, a ditch, a crooked fence, or a hedge, that is, a line having breadth.

Usually a *corner* is at the end of a boundary line or at a change in direction of a boundary line. Applying that philosophy, we see why an endpoint is also called the *terminal point* of a line, named after Terminus, a Greek and Roman deity. A corner may also be placed along a line where a third party may tie in or reference a senior line. To define a line there must be two corners, or termini, one at each end of the line. The corners, to be controlling over other descriptive elements required in descriptions, must be created by the survey and should be called for in a legal document relating to the specific parcel.

Corners can be located or placed on the exterior boundaries of the parent parcel as well as inside the parcel itself. Usually, an interior corner will not control an exterior corner. To be controlling and legal, a corner does not have to be monumented. A corner has no physical dimensions of length, width, or depth. It has only a legal dimension, in that an original corner found legally identifies the point of the survey, regardless of whether or not it is monumented. This applies only if a conflict exists in a description; otherwise, it can control even if it is not called for, but this is predicated on other applications of law.

A *monument* is a physical manifestation set at or near a corner. To be legal and controlling, a corner does not have to be monumented; it just has to be identified and

called for in the survey or document. Yet the law has set certain requirements for corners. As we will see, a call for a distance, more or less without the call for a corner or monument, is legally insufficient. Yet we can have monuments placed either on the corner point or near the corner. Surveyors and landowners have problems when a monument is not placed at the corner point but near the point where the corner is located. One of the critical requirements for a monument is that the monument recovered in a retracement or resurvey not differ appreciably from the monument set at the time of the original survey when the corner was established and a monument was set to identify that specific point.

Monuments may be classified as falling into two areas or categories: natural and artificial. Courts usually make a legal distinction between the two and hold that when there is a conflict or question between a natural monument and an artificial monument, the natural monument will control legally.

Courts have held that streams, rivers, mountains, roads, trees, and the like may constitute *natural monuments*. Yet if this natural monument is supposed to identify a point that represents a corner, the legal point, how then can a stream that is 20 feet wide and 600 feet long be considered a monument? This distinction cannot be explained. The reader will find that this is but one of many possible conflicts that will be encountered in retracement work by the professional surveyor. Research of early U.S. case law reveals that many of the cases called these points *natural boundaries* and *artificial boundaries*.

Artificial monuments are those monuments that usually are placed at corner points by landowners, surveyors, engineers, and others. They may be called by various terms on maps, in descriptions, and in field books. One may find them referred to as iron pins or pipes (IPs); stakes; at times, trees; concrete monuments (CMs); nails; or whatever the surveyor decided to use. Courts have made the distinction that natural monuments control over artificial monuments, because they are more certain of identification and less likely to be disturbed. This is discussed in Section 5.10.

The surveyor must make the distinction between a *boundary line* and a *property line*. Boundary lines between parcels are created in several ways, yet until written documents or legal principles attach, property lines are nonexistent. In theory, a boundary line remains fixed forever where it was located initially, but a property line may change by legal principles, including estoppel, agreement, adverse possession, or riparian rights.

When a surveyor establishes a survey line in the field to create a boundary, corners are usually identified. Lines are then marked and monuments set at the corners. By principle, each line must have two corners to be fixed in place, one on each end. Although when placed the monument becomes visible to the surveyor and landowners, the monuments that are set identify the position of the corner. The connecting line remains invisible between the corners. Yet if the creating surveyor blazed trees, or placed posts or stakes along that line, these physical objects become the identification of that once invisible line. Thus the objects marked *at the time of the survey* become the location and identification of the boundary line created. The recovery of any of the evidence of this survey at a later date becomes the recovery of the original line, and the lines run in the field to create the original boundary controls.

Once a boundary line is created in the field or on paper, common law and statute law permit it to be modified, changed, and altered. When a line is thus changed, altered, or modified, according to law, it becomes a property line. Because surveyors can create boundary lines and because a property line is a result of law, only the courts can certify or “sanctify” property lines or boundaries. Surveyors in the United States have not been given the authority to determine legal property lines. Usually, when two surveyors disagree on the survey location of a line, the parties resort to the legal system to make the final determination. This is usually referred to as “the battle of the surveyors.”

Once a boundary line is created and identified, it maintains its legality and position even if the corners on its extremities become lost. This may be difficult to understand, but the law recognizes a boundary line as being a legal entity, and once it is created, as long as evidence of that line exists, the line is controlling.

On the other hand, although a true boundary is controlling, surveyors, in retracing these true boundaries, may consider it necessary and prudent to evaluate property boundaries. In many instances, the true boundary and the property boundary may be one and the same; that is, they are superimposed on each other. The fence line or hedge line between the two adjacent parcels is superimposed on the deed line that was surveyed on the ground. Yet common law and statute law of most states permit people to modify these deed boundaries through legal doctrines, some of which are centuries old. Although they may be referred to by different terms in different states, for the sake of identification we will call them *agreement*, *estoppel*, *acquiescence*, and *adverse possession*. These doctrines require a landowner to complete some act in order to perfect the change of the boundary. Changing a boundary through a riparian change must be through, or a result of, an act of nature.

2.3 CLASSIFICATION OF BOUNDARIES

When a surveyor or an attorney looks at a boundary or boundaries, he or she usually does not consider the magnitude of that boundary. One may be asked either to create or to retrace either a boundary of an entire parcel, a boundary of a portion of a larger parcel, or the entire boundary of a single small, minute parcel. The boundary may be composed of natural elements, artificial elements, words only, or a combination of the three.

As discussed in Chapter 1, all boundaries may be considered as either macro boundaries or micro boundaries. The distinction is not necessarily the manner in which the boundary was created, but what rights or interests were being separated and identified.

Since *macro boundaries* usually separate major interests, boundaries between nations, boundaries between political subdivisions of a nation, and major private or governmental and subdivisions may be placed in that category, *Micro boundaries* include smaller subdivisions within macro boundaries. Using this distinction, a boundary may be a macro as well as a micro boundary.

A township and range within a state may be a micro boundary within the state, but in relation to the respective sections identified within its boundaries, the township is a macro boundary for the respective sections (see Section 3.2).

The law of retracements may apply differently to township lines (macro) boundaries than it does to section lines (micro boundaries.) Then if a subdivision of homes (micro boundaries) is placed within the boundaries of the section (macro boundaries), entirely new rules of retracement apply. When there are conflicts between boundaries, the problem must be approached in an orderly and systematic manner, using logic, analysis, and experience to arrive at a possible and suitable solution.

Having classified boundaries as macro or micro, they may be classified further as to the authority for their creation into two broad categories as follows:

1. Rectangular
 - a. Created by federal statutes
 - b. Created by state statutes
 - c. Created by private entities
2. Metes and bounds

These categories are discussed in detail in later chapters. It will suffice at this time to recognize that the various methods of creation will give the practicing surveyor the understanding that the methods and laws by which boundaries are created affect the methods of retracement.

2.4 METHODS OF BOUNDARY CREATION

In looking at the fact that a boundary is an invisible legal division line between two interests or estates in land, one must look at both common law and statute law to determine how courts and legislative bodies have determined the various methods by which boundaries can be created. In applying the methods of boundary location, the surveyor can identify three methods by which the surveyor, the court, or a landowner can create a boundary. It should be remembered that one does not have to be a surveyor to create a boundary. Courts can adjudicate and dictate a boundary, two or more contiguous landowners can create mutual boundaries, a single landowner can create a boundary by personal actions, and surveyors can create boundaries by their actions.

For study purposes, boundaries can be determined or created as follows:

1. *By action.* This is the actual creation of a boundary on the ground by survey, by individuals, or by actions. Corners are created and identified, monuments established, notes made of the survey or actions; possibly, a plat will be prepared and lines marked on the ground. These actions are then incorporated into the resulting descriptions.
2. *By words.* Exterior and interior boundaries of tracts may be created by words. A deed describing “the south $\frac{1}{4}$ ” or “the north 10 acres” creates boundaries, as does a metes and bounds description having courses (bearings and distances) and corners. A major problem is that a “south $\frac{1}{4}$ ” description has no calls for

monumented corners. If the description is a result of a survey, original lines are created and the surveyor is an original surveyor. If it is a result of a words-only description, there is no original surveyor, only a first surveyor who locates the lines described from the words, and as such, this survey is always subject to future collateral attack.

3. *By law*

- a. *Statute law.* Boundaries can be a result of statutes. These boundaries may also be identified under 1 above. The difference is that, whereas under method 1 the actions are done as a result of a mutual desire to locate the boundary, under this section a governmental body, either federal or state, enacts legislation giving authority to duly authorized surveyors to survey large tracts of federal- or state-owned lands.

The most noted and extensive surveys were those conducted by the federal government, now known as the Public Land Survey System (PLSS) or General Land Office (GLO) system. Several states. Georgia and Texas in particular, enacted legislation directing how their public lands would be surveyed for disposal to their citizens. Although the state legislation was not as extensive or as detailed as the federal legislation, it did identify such areas as how the respective parcels would be surveyed and the type of equipment to be used by the surveyors. More particularly, it directed how they would be identified and distributed. Some also included what qualifications were required of surveyors. The federal laws that created the public land system (GLO) were supplemented with a subsequent act (Land Act of Feb. 11, 1805) that basically set the dignity of the original surveys.

- b. *Common law.* Although the common law has recognized that individual landowners can, under certain situations, establish their own unilateral or mutual boundaries, many states have by statute identified the specific requirements required to meet these historical methods.

Accepting that the law does recognize the creation of such boundaries, the names often become confused, misapplied, misidentified, and generally muddled by landowners, attorneys, and especially, the courts. In the founding days of our country, many lawyers and judges were also schooled in surveying, title examination, and land principles. Today this cannot be said of many of the younger professionals. Not to detract from their capabilities, but today's young legal professionals have not been schooled in basic land principles; they lack a basic "land ethic." On occasion, the principles of agreement, estoppel, acquiescence, and the age-old doctrine of adverse possession to change, alter, and reidentify boundaries have to be identified to be accepted.

Creation of Boundaries by Running Lines

It is well recognized by common law and case law that a person may create boundaries of parcels, lots, and even subdivisions by their actions. A basic underlying principle is that as long as the person does not go beyond the exterior boundaries of the

title lines, a parcel may be subdivided in any manner the law permits by running and establishing lines on the ground. This is not in contradiction to establishment by law, but it could be considered as establishment by common law principles.

If a person owns a parcel and wishes to subdivide it into smaller segments, this can be done by physically running survey lines, creating corners, either setting or not setting monuments, marking lines, creating field notes, and possibly preparing a plat of the subdivision. The landowner then conveys the individual lots as they were created. The description by which the lots were conveyed may or may not refer to the survey; if it does, the true intent is identified; that is, the survey would control the lines, regardless of any latent errors.

If a survey is not referred to, the rule is not clear. Courts have been inconsistent: Some courts have permitted reliance only on circumstantial evidence that the original survey controls; others have relied on direct evidence. Some have held that if a plat is part of a description, all elements on the plat become part of that description, including the survey that created it. Others have permitted surveyors to testify as to what was done and made their testimony controlling. To understand what a local court permits, each surveyor should become familiar with local legal decisions. This method is discussed in greater depth later.

Creation of Boundaries by Verbal Actions

If we were to consider maps, plats, and descriptions as verbal actions, it is well recognized at law that a landowner can create a boundary without benefit of survey. This may also include actions by a landowner walking out lines and establishing corners and setting monuments and then writing their own deeds and descriptions, to which rights will be conveyed.

Many times a surveyor will be asked to locate a parcel described as “north $\frac{1}{2}$,” “east $\frac{1}{4}$,” or the “south 10 acres” from a description prepared by the landowner. In analyzing such descriptions there is one certain principle that surveyors, attorneys, and the courts must consider: In some states it is not unlawful for a landowner to convey a portion of the parent parcel by a description without the benefit of a survey. This occurs when a person owns a 10-acre parcel and conveys out the “south 5 acres” or the “south $\frac{1}{2}$.” These two descriptions may or may not be inconsistent. Yet once the deed is delivered or signed, an invisible boundary is created between the “north 5 acres and the south 5 acres” or the “north $\frac{1}{2}$ and the south $\frac{1}{2}$ ” even though no survey was ever conducted. The responsibility of the surveyor is to be able to place this invisible line on the ground by survey. This resulting survey is not an original survey that a surveyor creates when he or she runs the line first before making the plat. It should be considered as the first survey. The unique situation this first survey is placed in is that it is not controlling, as the original survey would be. A first survey by the initial surveyor is no more controlling than would be any other subsequent survey. This first survey is but an interpretation or an opinion by the surveyor or surveyors of the written description from which the surveyor works.

Creation of Boundaries by Survey

The attributes necessary for the surveyor who is given the responsibility of creating boundaries is entirely different from the attributes of the surveyor who is given the responsibility of finding the boundaries created originally. We do not have the flexibility to pick and choose our surveyors for certain jobs, for registration laws hold that once a surveyor is registered, that surveyor is legally and professionally capable of performing any of the actions that the law permits. Being legally capable is not the same as being technically capable. The surveyor who undertakes the responsibility either to create or to retrace boundaries will be assumed to be totally qualified to conduct either job once it is started.

2.5 WHO MAY CREATE BOUNDARIES?

Principle 1. *A landowner may divide a parcel of land in any manner not inconsistent with the law.*

Notwithstanding laws to the contrary, landowners may subdivide land in any manner to suit their needs and desires. If questioned, it may well be considered as a constitutional right to do so. Under the common law, one of the benefits of land ownership is the ability of a landowner to sell property and to describe this property in any manner. At common law there are no requirements that a landowner conduct a survey as a prerequisite for conveying off a parcel of land or a property interest. There are distinctions as to the type of description that may be legal as far as the courts are concerned and adequate as far as a surveyor is concerned.

In many instances, when the landowner conducts his/her own survey or creates his or her own description and deed, a substantial savings to the parties usually results, only to be offset later by the costs of legal fees and litigation between future parties in interest. Surveyors should discourage and not aid landowners to practice this authorized but unrecommended activity.

Principle 2. *Once a boundary or boundaries are created, no alterations or modifications are permitted in any manner by either the landowner or any surveyor once property rights have been granted or distributed according to the boundaries created.*

This principle may cause confusion for both landowners and surveyors. One of the guarantees of the U.S. Constitution is that of being able to use land without government control or intervention. In modern times that has been modified by zoning laws, ordinances, and so on. But one may survey and convey property in any manner not inconsistent with the law. This will permit the landowner to survey and create boundaries for conveyancing. Yet under the law, once these boundaries are created, the landowner can modify the boundaries in any manner desired as long as no

property rights have been conveyed to third parties. But once a single lot or interest is conveyed according to these micro boundaries, all micro boundaries within that macro boundary become legally fixed and cannot be altered or modified without approval of all persons who have vested property rights.¹

At common law there are no restrictions as to how the landowner can convey these lands. Choices must be made as to whether a survey is to be made to identify the lines or the landowner is simply to convey the land using words.

Principle 3. *The original surveyor creates boundaries. It is the retracing surveyor who ascertains or identifies boundaries from the original evidence.*

In keeping with Principle 1, the landowner can create or establish boundaries on his or her own property, and the survey is the method by which these boundaries are actually created on the ground. A parcel of raw land has no boundaries. But once the surveyor runs and then identifies these lines, the boundaries are created and can never be altered by any subsequent surveyor.² The distances recited are those distances indicated; a subsequent surveyor only retraces the original survey. Because boundaries are created, the original actions cannot be altered by subsequent surveyors or landowners. It is subsequent surveyors who ascertain the location of the original boundaries by conducting retracements.³

2.6 SANCTITY OF THE ORIGINAL SURVEY

Principle 4. *Once created and approved, the original boundaries created are legally without error and are the exact dimensions as indicated by the creating surveyor.*

Although this principle is codified so far as federal lands are concerned in federal law in the Land Act of February 11, 1805, it is also accepted in common law. When it becomes necessary to understand the full power of the original lines, it then becomes important for the creating surveyor, the retracing surveyor, and the courts to understand and appreciate the dignity of a found, identified original survey. The creating surveyor should strive to use the most precise means to run the surveys that create the boundary lines as accurately as possible and then record the actions definitively. The retracing surveyor should realize that modern methods of measurement will not duplicate the measurements that created the original boundary. The courts must realize that these original lines cannot be altered by judicial determination. Their responsibility is to examine evidence that is presented to determine where the true and correct locations of these lines are located. When attempting to locate these original lines, subsequent surveyors should always make their analyses in terms of the original units of measurements.

¹*Kelsey v. Lake Childs Co.*, 112 So. 887 (Fla. 1927).

²*Cox v. Hart*, 43 S. Ct. 154, 260 U.S. 427 (Calif. 1922).

³*Cragin v. Powell*, 128 U.S. 691 (La. 1888).

2.7 ORIGINAL LINES REMAIN FIXED

Principle 5. *No surveyor or court has the authority to alter or modify a boundary line once it is created. It can be interpreted only from the evidence of where that boundary is located.*

Retracing surveyors will encounter a minority of surveyors who when finding an “error” in the original survey, believe it is their responsibility to “correct” the error and make the original bearings and distances as they should be had they been surveyed correctly. These surveyors have no concept that once the lines have been created, no subsequent surveyor has authority to recreate the original lines. When a creating surveyor indicates a distance or an angle, these are the original measurements, according to the creating surveyor’s methodology and errors. By law they are free of error, even though, in fact, we do realize that the creating surveyor made mistakes. This concept also extends to the presumption that the survey is correct.⁴ It is not the job or responsibility of subsequent surveyors to correct the originals. It is their job to report any discrepancies found. Differences do occur because of the different methods and equipment used in obtaining the original measurements and the subsequent measurements, as well as differences among the people who did the work and changes in the circumstances or conditions under which it was done.

2.8. DISTINCTION BETWEEN ORIGINAL BOUNDARY SURVEY AND RETRACEMENT SURVEY

People, including many surveyors and attorneys, use words freely. Such words as *love* and *friend* often have different meanings as used in everyday speech from their true meanings. Surveyors use the term *property boundary* very freely on maps, in reports, and in everyday conversation. Yet no surveyor has the authority to identify and locate property boundaries. Few states define one of the attributes of surveying as “locating property boundaries.”

Without judicial authority, no surveyor has authority to locate property boundaries.⁵

Interestingly though, several states have now added as a distinct category of surveying giving testimony in court as to boundaries.

⁴*Camp v. Winegar*, 210 P. 64 (Colo. 1922).

⁵The authors question the authority of a state to enact a law that prohibits a qualified nonregistered surveyor from testifying in a state boundary dispute in which he or she does not hold registration. It is possible that an administrative agency is setting the legal standards for judicial proceedings.

Principle 6. *A retracing surveyor relates previously created and approved evidence to a current survey, being mindful that the current survey is always subject to collateral attack by other surveyors.*

Having seen that only the original entity that created the original boundaries can change boundaries after having secured the sanctity of vested property rights, the surveyor in the private sector can only conduct a retracement of an original survey.

The concept of survey is best defined in *The Manual of Instructions*.⁶ The *Manual* defines the areas of resurveys and retracements in the following areas:

1. Original surveys
2. Resurveys
 - a. Dependent
 - b. Independent
3. Retracement

Since an original survey may be conducted of both public and private lands, both independent and dependent resurveys may be conducted only by the entity that conducted the original survey. On the other hand, a retracement is a survey that is made to ascertain or redefine the direction and length of lines and to identify monuments that were established at corner positions by a prior original survey. A retracement is usually conducted within a macro boundary (e.g., township) to ascertain micro boundaries (e.g., sections). It may be necessary to retrace several miles of lines within a macro boundary from found, proven, original corners to set or relocate a lost corner or corners on a micro boundary.

A retracement may be used to recover new and additional evidence to ascertain the quality of an earlier survey. In a retracement, survey-found proven corners are rehabilitated, but any lost corners that are resurveyed have no finality of position.

The best statement about the place of a retracement (resurvey) is best explained by the following from *Cragin v. Powell*⁷:

The making of resurveys or corrective surveys of townships once proclaimed for sale is always at the hazard of interfering with private rights, and thereby introducing new complications. A resurvey, properly considered, is but a retracing, with a view to determine and establish lines and boundaries of an original survey . . . but the principle of retracing has been frequently departed from, where a resurvey (so called) has been made and new lines and boundaries have often been introduced, mischievously conflicting with the old, and thereby affecting the areas of tracts which the United States had previously sold and otherwise disposed of.

⁶*Manual of Instructions for the Survey of Public Lands*, U.S. Department of the Interior, Bureau of Land Management, Washington, DC, 1973, Sections 6.1 to 6.8.

⁷*Cragin v. Powell*, 128 U.S. 691 (La. 1888).

2.9 CONCLUSIONS

The student should have gleaned an appreciation of the distinct relationship of boundaries, boundary creation, and boundary retracement. When the term *boundary* is referred to in this sense, it is land boundaries that are the intended, not property boundaries, in that a surveyor may conduct a property survey but that should be considered as a special request survey that is specific and not universal in nature. A boundary line may be altered and become a property line boundary by special legal doctrines which are primarily legal in nature. Estoppel, acquiescence, adverse possession, and agreement are legal doctrines that may relegate deed or surveyed boundary lines to property boundary lines. These are legal dicta and should not be addressed by a registered surveyor.

There are two particular decisions that each boundary survey should take notice of: *Kerr v. Fee*⁸ and *Rivers v. Lozeau*.⁹ Rather than express the authors' personal views, it is better to quote what the courts expressed in these two decisions. In *Kerr*, the court stated as follows: "To survey land means to ascertain the corners, boundaries and divisions, with distances and directions, and not necessarily to compute areas included in defined boundaries. Knowing these, any competent mathematician can ascertain the areas."

Then in 1989, the Florida Supreme Court in *Rivers v. Lozeau* identified the responsibilities of the modern surveyor with these words:

First: "The definition of a legally sufficient real property description is one that can be located on the ground by a surveyor."

Second: "In a retracement survey, not a resurvey, . . . each succeeding surveyor is a following or tracing surveyor, and his sole duty, function and power is to locate on the ground the boundaries corners and boundary lines established by the original survey. . . ."

⁸*Kerr v. Fee*, 161 N.W. 545 (Iowa 1917).

⁹*Rivers v. Lozeau*, 539 So.2d 1147 (Fla. 1989).