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Locating and marking boundaries accurately is essential if landowners plan to manage their properties or to transfer their land to other owners. People must know where their land begins and ends; what belongs to them and what belongs to their neighbors. In Massachusetts, in order for forest land to qualify for Chapter 61 tax reductions, forest management plans with a plat (map) of the property are required. Accurate boundaries also allow a person to determine total area of acreage which can be used to calculate land values, taxes and survey information. And, well marked boundaries are a deterrent to timber theft and other trespass.

FINDING EXISTING BOUNDARIES

To find your land's boundaries, begin by studying your deed. Every county has a registry of deeds which is a source of information on property located in that county. This office is usually in the county seat. The town assessor's office may have tax maps which might help you also. Deeds describe the property by providing information on such things as corner points, distances, bearings, area, general location, and may refer to adjoining property ownership.

Stone walls and fences were often used as property dividers between owners. Wire attached to trees or posts to control livestock may or may not have been placed exactly on the boundary line.

The following are typical indicators of boundary lines:

- *stone walls.*
- *wire fences and evidence of wire fences.*
Remnants of wire on the ground can sometimes be located by using a metal detector. Also, wire may be seen embedded in trees.
- *wooden fences and evidence of them.*
- *blazes, old or new.*
These may be found on living trees, and on standing or fallen dead ones. Blazes may not always have been placed on boundary line trees.
- *streams, roads, ridge and cliff lines.*
- *brushed-out lines.*
These may have resulted from past cutting for surveys or boundary renewal activities, but not always. Cut stubs of brush or small trees may remain as visible line indicators for 20 or more years.

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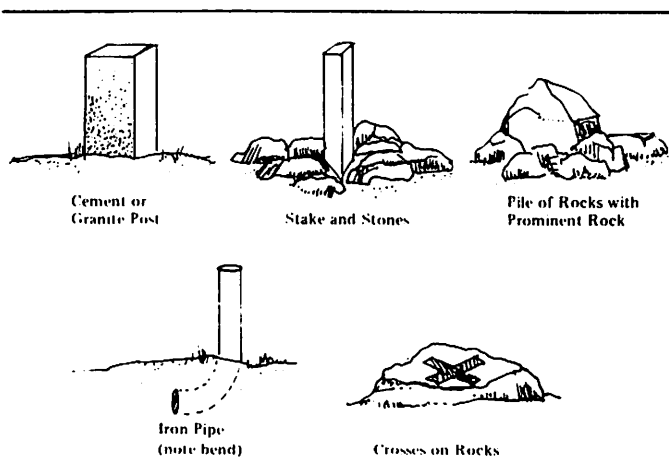
— *visual change of vegetation sizes.*

A line indicating different forest age and size classes or different species resulting from a timber harvest or change in land use might be found. This line might appear as an abrupt change in tree diameters or as a difference in vegetation.

THE BEGINNING POINT

It may be difficult to find the reference points described in your deed. Old deeds are often vague. Corners and lines described in them might not be found on the land. In other instances corners and lines can be located (see Diagram 1).

DIAGRAM 1.



Typical boundary corner indicators are:

- *a stake in a pile of stones.*
- *a pile of stones.*
- *a pipe driven into the ground, stone or cement posts.*
- *chisel marks on large rocks.*
- *blaze marks on corner trees.*
- *intersection of roads or joining of streams.*
- *distances and bearings from another reference point.*

In some cases, corner indicators might be gone or buried beneath forest litter. It is worthwhile to seek out older residents of the community, neighboring property owners or the assessor to help locate your boundaries.

UNITS OF MEASURE

The following are common units of measure found in typical New England deeds:

foot = 12 inches

yard = 3 feet (36 inches)

rod = 16.5 feet

chain = 66 feet (composed of 100 links)

link = 7.92 inches

mile = 5,280 feet

acre = 43,560 square feet

In measuring distances the following methods can be used:

a tape — usually 100 feet

a chain — 66 feet

a pace — length of one step

The length of your pace can be determined by walking a straight line for twenty steps, measuring that distance and dividing that distance by the number of steps. Do this three times to obtain your average length of step.

Example:

Length of step =

$\frac{55 \text{ feet covered by } 20 \text{ steps}}{20 \text{ steps}} = 2.75 \text{ feet to the step}$

The pace can be used to estimate distances. Some foresters and others figure two steps to the pace and count each time the right—or left—foot strikes the ground. The process for figuring length of pace with this system is the same as above. Accurate measurements should always be made with a tape or chain, and should be over horizontal, not slope distances.

ESTABLISHING BOUNDARY LINES

Some boundary lines have been marked permanently with things such as stone walls. In such cases the lines are self-evident and do not need to be re-established, just found. In other instances portions of walls may have been removed, or the wall may never have been completed to the corner of the property. Occasionally, properties have been divided and corner points have not been marked. These corner points must be accurately located.

Many times there is not good or conclusive evidence of a boundary line. *Caution: Do not mark any line with blazes until you are sure the line is correctly located.*

To establish a boundary line, the following technique is sometimes successful. Boundary work is done more easily when leaves are off the trees.

1. First, locate a beginning-point corner that you are sure is accurate.

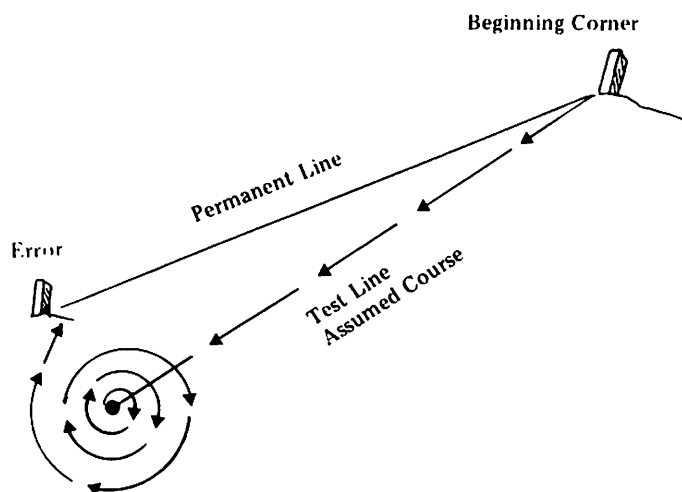
2. When a bearing and distance is given in your deed, measure the distance indicated in the deed along the bearing. When you reach the end of the measured distance you should be in the vicinity of the corner you are seeking. But, only in the rarest of instances will you hit the corner “on-the-nose.”

A hand or staff compass may be used to indicate the bearing. Keep in mind that a compass points to magnetic north, which in New England is approximately 14.5 degrees west of true north varying slightly from year to year. Be sure you understand the use of the compass because corrections are required when converting from magnetic to true north and vice versa. As property values increase, the transit survey is being used more and more because of its higher degree of accuracy and because it is also required for certain land transactions. (When the Registrar of Deeds files a map or plat of one’s property with the deed, the survey must be performed by a registered surveyor and his seal and signature affixed to the map or plat as indicated in Chapter 707, Section 3, Massachusetts General Laws.)

3. Never permanently mark the test line, but use flagging or strips of cloth. If you find the test line is not the permanent boundary line, these markings will have to be removed.

4. At the end of the measured distance (now called the test line), search for evidence of the old corner. This can be done by walking in an ever-enlarging series of circles (see Diagram 2).

DIAGRAM 2.

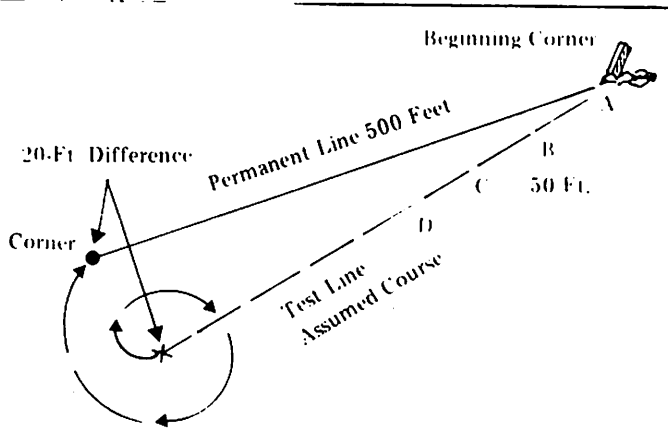


5. If you are fortunate, you may find evidence of an old corner. Such evidence could be very meager, no more than a pile of stones, rusted pipe, rotted stake

or slight irregularity in the terrain where the corner once was.

6. When you have located the corner you are seeking, it will probably not fall along the test line. If, however, it does, the test line becomes your permanent boundary line.
7. If the corner falls to either side of your test line, it will be necessary to locate the permanent line from the corner, back to your beginning point.
8. There are several ways to locate the permanent line using the test line as a reference. If the terrain allows you to sight between the two points, mark the line directly. If this is not possible, a series of offsets from your test line to the permanent boundary line can be calculated (see Diagram 3).

DIAGRAM 3.



Station to Station	Distance	Cumulative Distance	Offset
A to B	50 feet	50 feet x .04 = 2 feet	
B to C	50 feet	100 feet x .04 = 4 feet	
C to D	50 feet	150 feet x .04 = 6 feet	
D, etc.			
	$\frac{20 \text{ feet}}{500 \text{ feet}}$		$= .04$

9. If you have any difficulty at all finding your boundary line, call a forester or surveyor for help.

Note: Surveyors usually only establish the corner markers in their work. If a landowner wishes to have a surveyor mark the boundaries between corners this condition should be stated in the agreement or work contract.

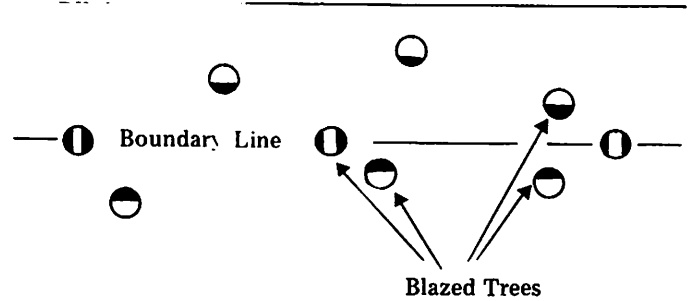
PERMANENT BOUNDARY LINES

Once you are satisfied that the boundary line has been located, it is a good idea first to notify the owner of the adjacent property and obtain mutual agreement on the boundary location. Then, the boundary should be marked as permanently as possible.

Blazing trees is a common way to mark woodland boundaries. Many combinations of blaze marks can be used, but the following is suggested.

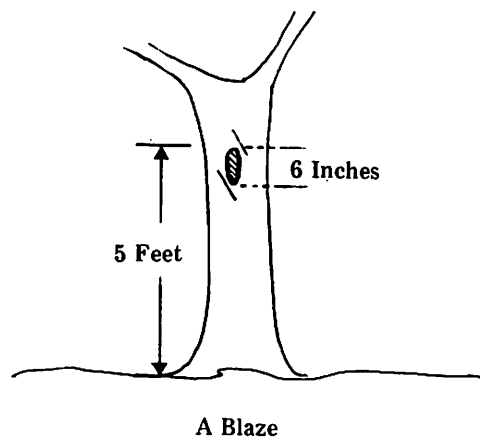
Few trees are actually on the boundary line. For those trees that are on the line, front and back blazes should be made about five feet above ground level. When there are not enough trees on the line itself, then blaze trees within a few feet of the line so that the blaze marks face the line (see Diagram 4).

DIAGRAM 4.



Trees to be blazed should be healthy, vigorous, and not less than four inches in diameter. With an axe remove a four- to six-inch square section of bark down to the live wood. This blaze can be specifically identified as a boundary mark by cutting one slash mark three or four inches above the blaze and another three inches below it (see Diagram 5).

DIAGRAM 5.



Blaze trees at twenty to thirty foot intervals.

In some instances trees cannot be found on or near the line or they may be too small to mark. In situations like this you can build mounds of stones on the line, drive iron pipes in the ground, or build fences.

When you reach a corner of your property, special attention should be given to marking it. Typical boundary corners are listed on pages 1 and 2. To make the corner more evident, two or three trees near the cor-

WOODLAND BOUNDARIES

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ner can be marked as "witness trees." A suggested method to mark a witness tree is to cut a blaze near the base of it and cut three slash marks at four-inch intervals above the blaze. These trees can be recorded by taking bearings and distances from them to the corner (see Diagram 6).

In many instances individuals like to paint the blazes for easier identification. A bright oil base paint is suggested. Wait until the blaze is dry before doing this. Nailing or tacking markers to trees is not recommended.

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DIAGRAM 6.

