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ENGINEERS & SURVEYORS
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Retracing the Original Government Surveys
In Florida

by David E Wine
Fla. Reg. Surveyor #1418
with help from
Thomas Durrance - 15 years
Specialist in Sectional Retracement

As surveyors we are instructed by the standards of our profession to follow the footsteps of the original surveyors, but is it still possible after 100 years of time having lapsed since the completion of the original Government surveys? In order to establish this period in time, it is interesting to note that Abraham Lincoln was a surveyor while the surveys of Florida were in progress. For the most part, these surveys were completed before he was elected President.

Yes, it is still possible to retrace these surveys because Florida flatwoods have a unique capacity to preserve traces of these original surveys. The traces and signs still exist in a sufficient quantity to support the re-establishment of most of these surveys, although time has concealed them from all but an experienced and well trained eye. Then by what process can a surveyor orient himself with the original survey? How can he locate himself within a reasonable area to search for the remains of the corner accessories, or in rare cases to even find remains of the original corner post?

First, one should study the scope of this work and the accuracy with which it was established. It commands the respect of anyone who has been successful in the re-establishment of any part of it. Consider that the tools and support for the field work consisted of the following:

- a. A Jacob's staff and compass accurate to approximately 15' arc.
- b. The Gunter Chain of 100 links of iron rod -- heavy, cumbersome, and subject to snagging, wear, and build-up of debris between the links. $1/32$ " of wear at the end of each link would amount to approximately 42 feet of excess land marked off per mile.
- c. Hand tools such as axes, knives, and a timber scribe.
- d. Horses were used for travel, for packing supplies, and to scout and hunt from.
- e. There were no roads and no people, except Indians, in vast areas that they surveyed.

This list of hardships and crude tools could be added to, but the most impressive thing might be that the surveys were taken and completed on a contract price ranging from \$1.50 to \$4 per mile for the completed surveys.

Engaged in surveying a given area, each Deputy Surveyor reflected a bit of his purpose and personality in the accuracy and prudence with which he completed his field work and the field notes describing his work. Some were dedicated to establishing lasting, comprehensive and fairly accurate surveys -- the ease with which these surveys can be retraced shows this. Others were dedicated to the fee per mile -- the difficulty in retracement soon shows this.

In order to pick up behind the original surveyor, follow his lines and find his marks takes a thorough understanding of sectional survey methods, knowledge of the terms, and a feel of the original field notes. It is a definite asset to be a woodsman -- to know the growth of all varieties of trees. After following the original surveyor for a few miles, one can begin to learn his habits, his accuracy, and how accurate his field notes describe the topography. This all serves to help you know your surveyor and, in many instances, to "second guess" him in difficult areas to follow.

If you have only one section to survey, don't try to order and use only the original notes of the four lines around this section. Order the notes for the entire township survey before attempting to re-establish a particular section. Not to consider the whole township for information and help would be like attempting to survey a residential lot in a subdivision without reference to the subdivision plat of which it is a part. For example, we started from a proven corner, the Southeast section corner and ran a trial line due West. The original surveyor had started from the Southwest corner and ran East setting a $\frac{1}{2}$ mile post. Then, continuing East, he recorded closing the section at the Southeast corner. We studied the notes of other sections in the township and found that as he proceeded from corner to corner, he had covered 19 miles of compass line before closing across this section. We then expected a very large falling on his closing corner and broadened our search both North and South.

We first found a line tree 297 feet South of our trial line and near the Southwest corner of our section. A compass line was then run back to the East finding one more line tree. We then found both witness trees to the $\frac{1}{2}$ -mile post (two living cypress trees) and cut the faces from the scrolls. At 40.2 chains West with the line trees from the $\frac{1}{2}$ -mile post we proved the Southwest corner of our section. Without considering the whole township, we wouldn't have known to carry such a wide search to locate his closing line.

The reader may begin to doubt whether all this is still possible, considering the short period of time it takes insects to eat wooden stakes -- almost as fast as they are driven into the ground. In ten years time the undergrowth will completely erase the signs of a cut survey line. Fires have burnt over almost every acre of Florida time and again. Yet, the traces and signs still remain because they were deliberately placed on living trees. Smaller and younger trees were easier to blaze and scribe. These trees lived many years after the surveys, and many are still living today. The topography as recorded in the original notes has not changed.

Sand Cypress (locally known as jug bottom cypress) live up to several hundred years and completely heal over the scars of hacks, blazes, and scrolls. Some of these marks, though covered by over 100 growth rings, may be just one or two inches under the bark of the tree. This illustrates how slowly this type of tree grows. Thousands of these stunted looking, though healthy trees are still standing throughout Florida containing perfectly preserved original marks. These trees are living witnesses to the original surveys.

The long leaf yellow pines, native to Florida, that were hacked, blazed and scribed have since died or been cut for timber. However, the stumps turn to light wood and will resist rot and insects for hundreds of years. I've seen whitened light-wood stumps on line between a section corner and a reference tree to the corner thus indicating that the preserved whitened stump was there when the original surveyor was. If the stump were a living tree at the time of the original survey, being closer to his corner, the surveyor would have used it for his witness tree.

Mature cabbage palm trees are old, hack marks showing as a decayed cup in the side of the tree. Water from the rains run into the hack mark and eat away a cavity similar to the way a waterfall will wear a cavity under and behind the falls. Scrolls on a cabbage palm show as a rotted area at the height of and on the proper side of the tree where the scroll should appear. In a few cases, the originally scribed numbers can still be read on the cabbage palm tree.

Knowing your surveyor is to know whether he measured from his corner to each witness tree or did he estimate the distance. If his topography is recorded in even or one-half chains, this would indicate that he estimated many of these calls. If the lines are consistently off from cardinal directions by a degree or two or more, then he might have been in error in his correction for declination. This all helps to carry your retracement and end up within a reasonable area to begin a search for witness stumps or scrolls from living trees. The stumps may appear to be gone or lost, but in the case of pine stumps, the tap root generally remains having turned to light wood and preserved. These tap roots can still be found, even under plowed fields. Our crew once found one under a fellow's porch. They reach into the ground several feet and a high water table will preserve them for many years after the stump has been burnt or cut away. Bay, Gum, Black Jack, Magnolia, and Water Oak trees have a short life span and remains of these are rarely found.

The art of finding an original hack mark, blaze, or a scroll tree, or a standing light-wood snag, standing several feet above the ground with a hack or blaze mark preserved in it's heart can only be developed by experience and determination -- best with the help of someone who knows. Someone who can show you a small bump on a tree and explain that it is at the right height, the right slant, on the proper side of the tree depending upon which direction the line was run -- three per tree on a township line and two per tree on an internal section line. If these qualifications apply to the bump found, the tree should be cut into above and below the bump to a proper depth determined by growth rings. Then split off the slab and find an original mark clearly made by an axe or knife and perfectly preserved. Don't be discouraged if it is only a natural scar, but continue to search. Don't overlook a felled and decaying tree. Roll it over and look for hacks or blazes at the length from its base as if it were standing.

If the topographic calls are not matching on your trail line, then your alignment may be off. Running North, for example, a creek recorded "49.6 chains, creek bears NE", matches your line at 48.5 chains. Your line perhaps should be shifted East to cross at the proper call. *

After finding a line tree by a set of hacks or a blaze, then run the line in a cardinal direction continuing to look to each side to pick up additional line trees. Two or more trees will give an alignment to continue on. Use the topographic calls of the original field notes to adjust the measurement of the line. Be sure to know in which direction the surveyor was running when he set each corner and run the same direction where possible. They the line trees or signs of any type will lead you directly to the corner. On a closing line he may have missed his corner. This puts a "dog-leg" in the section line from the quarter corner, but the original corners as found must be held.

The Township plat, aerial photographs, soil maps, and USC&G Quadrangle maps are a tremendous help in studying topography. From these you can match the original topo calls and know where to begin a search for original signs. I recently compared original notes with a quadrangle sheet while at home in the evening. The next morning (Saturday, the men were off) I went out alone with a compass, a machette, and an axe and looked for a corner. After leaving my truck and entering a shallow cypress pond I first found an original hack

mark on a decaying cypress tree. With the compass I ran a short distance South. The original notes showed leaving the pond that I was in at 5 chains South of my corner. Estimating this distance, I located three cypress trees that matched the notes as witness trees. One of the three trees was dead and decaying. I also found the rotted remains of a stump that matched for the fourth tree.

I cut into the decaying tree and found the remains of a scroll. Then I carefully cut into one of the living trees above and below the proper height of the scroll on the side facing the corner. The cut on the bottom came into the scar tissue at the bottom of the scroll and my top cut was apparently too high. I continued the top cut lower until the scar tissue began to show. Then cutting vertically from each side, the face of the scroll split off. The numbers cut with a timber scribe in 1835 were perfectly preserved. Within an hour's time since leaving my truck I was standing without doubt at the original Section Corner.

We later set a concrete post at the section corner and placed another tack on our wall map. We left the second living scroll tree untouched to continue its growth. I brought in the scrolls that were cut, marked them to further identify them and stored them as evidence of the corner.

Try to picture the original surveyor and think like he would as he proceeded with his work. For instance, wildlife such as snakes, bears, alligators and small critters were abundant. I have imagined that the thicker the undergrowth the more noise his crew would make in an effort to scare away these dangers. Trees on the lines and within reach to the left and right would be hacked for the effect of noise. This to my mind accounts for finding hack marks in almost every tree that is old enough along lines that run through thick swamps and cypress ponds. These areas serve as rewarding places to search because of the abundance of original hacks and blazes and because few people since have ventured into them to inadvertently destroy these mark-bearing trees.

Spanish land grants were also surveyed and accounted for in the original surveys. Often times it is necessary to establish adjacent section lines and corners before attempting to retrace the original lines of these grants. The Grant corners and the intersections of section lines with grant lines were not referenced as well as were the section corners. Sometimes only one witness tree was recorded to witness these corners and these trees were marked only with an "X" or the initials of the grant holder. One needs positive location of section lines as they approach the grant lines. Locate the intersecting point at its called distance as adjusted by proportional measurement and from this trial point, try to locate the remains of the witness tree or trees. Then run the grant line as per its called bearings and distances, constantly searching for signs of the original line. Adjust your trial line to match any positive trace of the original line. Topographic calls are very helpful and sometimes are the only ways and means to establish the original lines mainly because these grants were usually of rich or high ground and bore the types of trees that grow fast and soon die and decay.

The U.S. Manual of Surveys and their pamphlet "Restoration of Lost or Obliterated Corners", give detailed instructions of the proper procedure for re-establishing Government corners. These texts should be carefully studied and followed. After establishing the Government corners, these texts also explain the methods of further subdivision of the sections.

I have attempted here-in to explain from the experiences of my associates and myself that these original surveys still can be found. We have accumulated a storeroom full of hacks, scrolls, blazes and a few original posts that testify to this.

In closing I'll say that retracing these surveys is one of the most interesting and satisfying phases of surveying that I've had the opportunity to participate in. Each time that we search for signs we learn a little more and develop a deeper respect for the courage and capacity of those original surveyors. It is a real challenge to find and follow their footsteps.