

# LAYING IT ON THE LINE

WRITER | JULIE FORD

Semi-retired land surveyor, Bob Mitchell, has an interesting hobby. Armed with knowledge, maps, GPS, a shovel, bug spray and sometimes a metal detector, Mitchell searches around Michigan for historic monuments. In land surveying, monuments are the markers that identify surveyed corners of land. The first monuments were wood stakes, pounded into the ground between 1816-1856. Needless to say, Mitchell enjoys a challenge.

To understand Mitchell's quest, it's helpful to understand how Michigan was initially surveyed. The Land Ordinance of 1785 established policies and procedures called the Public Land Survey System or PLSS as an orderly way to measure and document the land of the Northwest Territory, which included Michigan. Instructions for the government surveyors included taking detailed notes of terrain, soil, weather, plants, trees and animals, while they used a compass and 66-foot Gunter's chain to plat 6 by 6 mile squares called townships. Surveying was necessary for the sale of land formerly occupied by Indigenous peoples and historians have written volumes about the circumstances of how Michigan land changed hands.

Thirty-seven states have a meridian (north-south) line and a baseline (east-west) and their intersection or Initial Point sets the point at which all land surveys originate for the state using PLSS standards. The north-south line or meridian through Michigan is straightforward — the western land border of the 1807 Treaty of Detroit set the meridian which runs from Defiance, Ohio to Sault Ste. Marie.

Michigan's east-west baseline is unique, and yes, Baseline Road, also known as 8 Mile Road



in Detroit, is on the baseline. Early government surveyors varied from meticulous to careless or somewhere in between, and Michigan deals with a 935.88-foot mistake. A surveyor disagreed with his predecessor's Initial Point, and due to land to the east that had already been sold, the Initial Point could not be altered. The disagreeing surveyor set what he deemed a more accurate Initial Point 935.88 feet due south, and all land to the west uses his Initial Point.

Michigan is the only state to have this issue. Travel to Meridian-Baseline State Park in Pleasant Lake and you can hike to each spot. The original monuments are long gone but there are interesting commemorative monument replacements.

"When I started in 1969, I didn't have a clue what a land surveyor did," Mitchell says. He answered an ad for a surveyor's helper, and when he told the interviewer he liked working outside and was really good at math, he was hired on the spot.

Over his long career, Mitchell has uncovered a lot of monuments and says surveying is not an exact science, especially when the terrain and historical data are challenging. Mitchell says there are a lot of jogs in Michigan, especially with east-west lines, and mentions that Wexford County, south of Traverse City, is so hilly that most of the miles are shorter than they should be due to constantly measuring on a slope.

While most of Michigan's private land monuments have been located, monuments on state and federal land have either not been set or haven't been recovered. Of course, the holy grail of monument recovery is to find the remnants of a first



survey's early 1800s stake and its two witness trees.

"Well, about four years ago, I found a standing, living bearing (witness) tree — a big white oak in Manistee County," explains Mitchell. "Using the tree, I carefully excavated nearby and found the decomposed wood of the original stake."

Mitchell further explains how just observing the tree gave him an indication to start digging. He found the other witness tree below ground as a soft spot — it was a burned pine with roots in every direction, but the center was still intact.

In the early 1800s, government surveyors set all half- and one-mile corners with wooden stakes within the six-mile square township and scribed a minimum of two "witness trees" at all corners to help settlers find their land. Subsequently, private surveyors used the original monuments and upgraded the monumentation using rocks with an "X" chiseled on them and any imaginable old pieces of iron.

"Discarded iron farm stuff like plow points, broken axle shafts — anything broken on the farm — would be put in for a corner," Mitchell says. "I also have seen a lot of railroad rails, and one time I couldn't figure out what I found ... it was a coupling pin that came off of a locomotive."

One marker he was determined to find was in a pile of rocks a road grader had dug up and thrown 30 feet from where it should have been.

He had been digging through asphalt, then gravel, then clay when a colleague said, "Hey, look at this stone," and there it was — a rock with a hand-chiseled "X."

Mitchell says he has found hundreds of monuments and keeps looking, especially now that his sons have joined the profession and his business. "The surveying profession has been really good to me," Mitchell says. "There aren't a lot of jobs you can have in this world that you feel really good about. I enjoy it, my sons enjoy it. No complaints." □



PHOTO | BOB MITCHELL PROFESSIONAL SURVEYOR

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