



# Morrow Mountain survey on July 8

Surveying with Steve and Jane

By John Rankin

July 25, 2008

Marker:

39°24'2"N, 105°28'19"W, 8,025 feet

Southeast Corner: 39°24'9"N,  
105°28'19"W, 7,947 feet

Southwest Corner: 39°24'9"N,  
105°28'36"W, 8,032 feet



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The cliffs and summit of Mount Bailey are visible through the trees from the southwest corner of Morrow Mountain. This point is near the top of the ridge south of Bailey. (Photo by John D. Rankin/The Flume)

The Denver, South Park and Pacific Railroad built tracks up the North Fork of the South Platte River past the present town of Bailey in the mid-1870s. The

Hallack brothers, shareholders of the railroad company, bought many pieces of land along the river, and cut down the trees for use in building the railroad. Edward McGraw and his wife, Blanche, came to the area with the railroad. Edward ran the commissary and kept books for the Hallack and Howard Lumber Co.

Edward died in 1880, leaving Blanche McGraw with two small babies. Mrs. McGraw bought land from Mr. Bailey, and started a boarding house and a store, which today is the Bailey Country Store. In 1888, Blanche married William Morrow, a carpenter for the Hallack lumber mills. The Morrows bought one of the Hallacks' properties, the bare hillside across the river, at a tax sale, and watched as the spruce seedlings grew to replace the forest that had been. (Historical notes from Morrow Mountain of Meditation by Helen McGraw Tatum.)

Blanche McGraw Morrow's granddaughter, Helen McGraw Tatum, donated land to the Park County Historical Society on which to place historic area buildings. That land is now called McGraw Memorial Park in her

honor. She also donated 18 acres across the river, now full with a second-growth forest. The hillside was dubbed "Morrow Mountain" and a hiking trail was built, accessed via the Keystone railroad bridge at McGraw Memorial Park.

Most of the Historical Society members who determined the boundaries of Morrow Mountain and built a hiking trail on it have moved on or passed on. Looking through records, I found a legal description that told where the south, east, and west sides are. The trouble is, I can't translate legal descriptions to locations on the ground.

My hiking partner Steve has worked as a surveyor, and still donates his time to the National Forest Service and other agencies when they need short-term surveying help. He kindly consented to finding the east, south, and west sides of the property.

Our first task was to find a known physical location. The legal description of Morrow Mountain references the "south quarter corner of section 29." Many topographical maps have the 1-mile-by-1-mile sections drawn on them, with section numbers 1 through 36. A peek at one of these maps will show that the town of Bailey lays in section 29. Those maps also show a small "+" at the center of the south border of section 29, which indicates that there is a surveyor's mark there, locating the southeast corner of the southwest quarter of section 29, the point referenced in the legal description. Our first task, then, was to find this marker.

Maps also show latitude and longitude, the language used by hand-held GPS units. I found our "+" on a map, determined the coordinates, and plugged them into the GPS. Next we needed a public path to the marker.

South of Morrow Mountain is the private homes area of Happy Top. We could almost drive to our marker, but Happy Top is a private, gated area, and we needed to find another way. Looking again at our topo map, we found the marker is only a quarter mile or so up a gully from Park County Road 68, up the hill south of the Farmers Union Educational Center. We parked near the gully, which we found next to a Pike National Forest sign, and headed up. It was a good day to be out, with high, thin clouds, warm temperatures, and little, if any, breeze. We soon reached our GPS coordinates, and found a well-marked fence post.

The post was part of a north-south fence. Strands of wire not in the fence led from our post to three nearby trees. There was a faded sign on the post and on each tree, each sign indicating that the post was near the section quarter corner. Just north of the post was the marker itself, a three-inch or so diameter disk, mounted on a pipe and well secured to the ground. Engraved on it were "Department of the Interior," "Bur. of Land Management," and the fact that it marked the quarter corner for section 29.

From this point, the legal description told us we would find the southeast corner of Morrow Mountain by heading due north 624 feet from the marker. North was easy, as Steve had a good surveyor's compass and could find true north from magnetic north. He quickly determined that the fence headed due north. Going the 624 feet wasn't so easy.

The distances that surveyors measure are map distances. Maps are flat, even though the ground they show is not. Say, for example, you are at the top of a 45 degree hill. If you travel north 100 feet, you are going down just as far as you are

going north. If you plot your new position on a map, or view it from very high up, it will look like you only went about 70 feet, not 100. We needed to measure our 624 feet in map distance, taking the angle of the ground into account.

Steve had Jane take one end of a long measuring tape and walk north along the fence 100 feet. This sounds like an easy job, but Steve wanted her to go straight north, despite intervening trees, rocks, bushes, or any other obstacles. Once Jane reached "the end of her rope," Steve used his surveyor's compass to measure the angle of the land between himself and Jane. A quick trigonometric calculation later, and he had the map distance that Jane had gone. I kept the books, recording the land distance, the angle, and the calculated map distance. I added each measurement to the running total until it came to 624 feet. Near there, we found two candidates for a property corner marker: One was a length of rebar with a blue cap, hammered into the ground. The other was a pipe, also in the ground, with its top painted red. Steve liked the rebar, so we assumed it to be the southeast property corner of Morrow Mountain.

From there we went in search of the southwest corner, 1300 feet away. Our northern measurements were mostly downhill, while the western leg was fairly level, until it reached a small gully going down to the north, toward the river. In the gully, we found a trail coming up one side, going a few yards south of the line we were following, and then across the gully and back down. We had found a bit of the trail that was made soon after the land was given to the Historical Society.

Just before we reached our calculated 1300 feet, we came to a north-south fence, and within a few feet of our

westward line, there was another piece of rebar with a blue cap, just like the one we'd started from. We congratulated Steve on a job well done, and declared the rebars to be our boundary markers.

The fence marked the western boundary. We followed it down toward the town of Bailey, until it got too steep to walk. As always happens while I'm on an outing, our priorities had shifted from hiking (or in this case, surveying) to lunch. We turned east, staying well above the houses on River Drive. Clouds had gathered overhead, and they decided we were too dry, and so began to rain. We were prepared with our rain gear, and found our way to and across the Keystone Bridge, and we had our lunch in the Railroad Wait Station at McGraw Memorial Park. The sun came out as we ate, leaving us nice weather for a walk along PCR 68 back to the car.

There are trails on Morrow Mountain, and they are open to the public. You'll find McGraw Memorial Park on the banks of the river behind the feed store and ATF building on Park County Road 68. Be sure to read the historical notes on each of the structures before you cross the Keystone Bridge to Morrow Mountain.