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During the past 25 years, our firm has performed many control surveys throughout the western United States. During that period we have uncovered many triangulation stations in the desert and on top of mountains. Many times we have found old batteries and wooden signal stands left by the triangulation crews who positioned those monuments in the 1920s, 1930s, and 1940s. During the same period, while doing boundary and control surveys, we have also found lath, pieces of old flagging on fences, old sight poles and the wire that had held them, and myriad other accessories.

Origin of the Term

Just as a hunter uses the animal droppings he finds to help him decide whether there is game in the area, these “leavings” from previous surveyors were used by our crews as a sign that we were looking in the right place, or were in the footsteps of the original—or at least a previous—surveyor. At some



Scattered stone mound with 1962 San Bernardino County pipe and brass cap.

point the name “Surveyor Droppings” was coined by one of our “hunters.”

In late 1996, I stumbled onto a new record for surveyor droppings.

Boundary Survey Project

Our firm was contracted by the U.S. Navy to perform a boundary survey around the southerly portion of the Marine Corps Logistics Base at Barstow, California. The boundary of this project extends about 2 miles south of Interstate Highway 40 in fairly pristine desert. The boundary is sectional, following aliquot lines within sections, necessitating locating or re-establishing about 20 boundary corners.

The sections in this area are in Townships 1 West and 1 East of the San Bernardino Meridian. The meridian line had been run North through the area in 1855 by Deputy Surveyor Henry Washington (the same surveyor who es-

SURVEYOR DROPPINGS



(left) Helicopter with RTK GPS mounted and operating for section corner search. (below) Stone Mound Section Corner.

established the San Bernardino Meridian Initial Point three years earlier). The corners within the township west of the meridian had been set by Deputy Surveyor R.W. Norris in 1857. The corners for the sections east of the Meridian had been set by Deputy Surveyor A.P. Sreane in 1856.

The County of San Bernardino had retraced the Meridian line in the 1960s, allowing us to find these monuments relatively easily using their notes from that period. They had also located a few of the section monuments east of the meridian. However, my research gave no indication that the standard boundary corners within the township west of the meridian had been seen since they were set in 1857.

Least Squares Adjustment

I computed search coordinates using a least squares adjustment of all available record data, weighted appropriately for the equipment and techniques of the period in which each record survey was performed, including the 1850 and 1857 surveys. This adjustment of record data was “anchored” to the ground using positions determined by GPS connections to the California High Precision Geodetic Network on several “easily located” and accessible monuments. This resulted in NAD83 “Search Coordinates” for all points to be located.

We attached our Trimble RTK receiver to a small helicopter and sent our crew out to locate the desert corners. This system worked quite well, and we found almost all corners needed, except a for a couple, which were in desert wash areas and had been “erased” away. The section corners located were generally a mound of rocks with four witness rock mounds

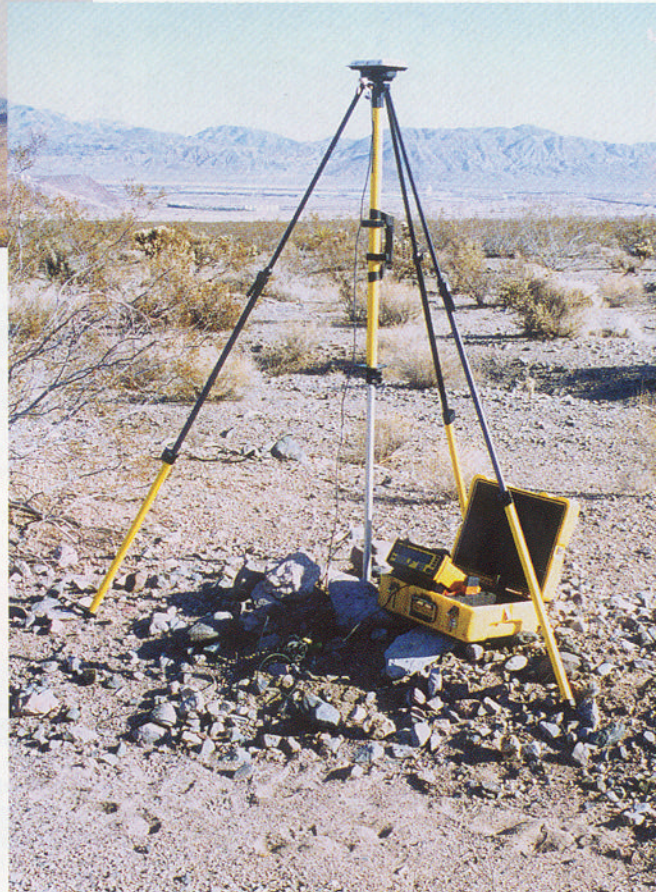
(one in each of the four adjacent sections). The quarter corners were single mounds of rock with no witness mounds.

However, my party chief, Mark Platt, informed me that he had some doubts about one of the section corners he had located. This particular mound of rocks was elongated, about 3' by 5', and did not have the witness mounds that we had found at most of the other corners.

This particular corner was about 1.5 miles into the desert landscape from the nearest usable dirt road. I decided I had better take a look. We had ATVs with us for use when needed, so I unloaded mine; bungied on a tripod, a Trimble 4000SSI and a handheld unit for navigation; and headed off to investigate.

After navigating to the location of the elongated mound, I made a thorough search of the area for any evidence that would either confirm or eliminate this mound as a section corner. The mound was next to a small wash and was certainly suspect.

While I was there, I noticed an old rusty tin can of a type that I had never seen before. The can was about 3" diameter and about 4" high and had a piece of metal about the size of a quarter that had obviously been soldered into a hole in one end to seal the can after it had been filled. “Just another desert mystery,” I thought. I figured it was old and thought about taking it along, but not being an old can collector, I merely left it behind.



Investigating the Mound

I decided that I had to do something to prove to myself that this mound was, or was not, the true original corner. In my research of this area, I had found that the Bureau of Land Management (BLM) had rerun the south line of this township in 1957. Of course, they had set iron pipe with brass caps at the corners. I was pretty sure that I could find the BLM corners with normal autonomous GPS navigation. The township line was one mile further south into the desert and on a high ridge. I got back onto the ATV and headed south.

As expected, I navigated to a point that was very close to the 1957 monument and easily found the corner. This corner was much like the others—a mound of rocks with four witness mounds—except that the corner mound

had the 1957 iron pipe/brass cap monument in the center. I set up the GPS unit to collect a long fast static session to position this monument, which would help me evaluate the suspect corner a mile to the north.

While I was waiting for the GPS receiver to collect sufficient data, I noticed another of those odd cans with the quarter-size soldered seals in one of the

witness mounds. I didn't really think too much of it at the time and tossed the can back in the rock mound.

I finished my session on the 1957 brass cap corner and headed north along the section line toward the elongated mound. By navigating half way, I found the intermediate quarter corner. This corner was a very pristine stone mound with a hole down through the



Stone Mound Section Corner with witness mound in the background.

middle where a post must have been at one time. Nothing changes quickly in the desert unless humans do the changing.

After reducing the day's GPS data and evaluating positions of the newly found section and quarter corner, I determined that the elongated mound did, in fact, fit the original record dimensions to the original monuments in three directions. I was satisfied that it was the original section corner.

Revelation

As I was mulling this over, it finally dawned on me: somebody had left those old cans at both of those section corners in the desert. The BLM in 1957 only went east-west along the township line, not north into the township interior. Besides, I know what a 1957 can looks like. Who else, then, besides me, would have ever been at both of these original stone mound corners in the middle of the desert, carrying their lunch with them, and left their trash behind?

Only the survey crew that set those corners 140 years ago.

Are any of you collectors interested in the precise Lat/Lon of a couple of pre-Civil War tin cans? ▼

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