Summer 2009

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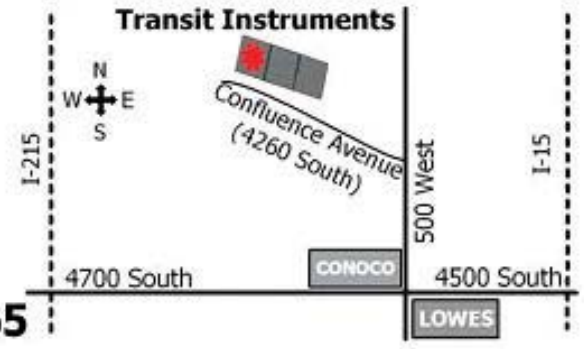

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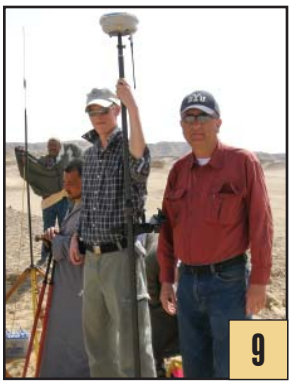
inside



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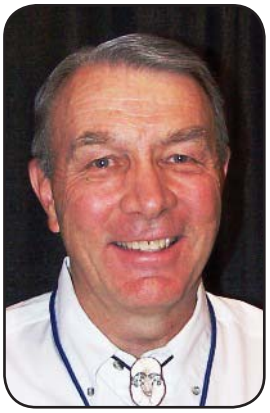
Chairman's Message

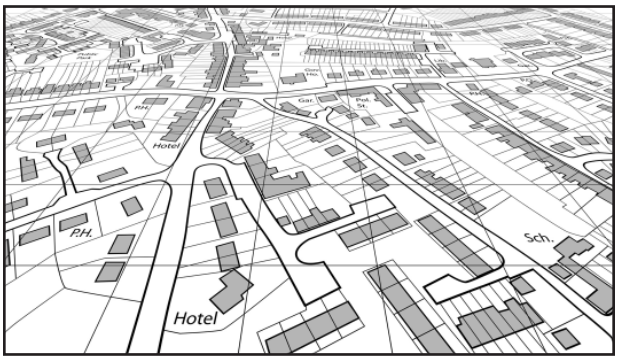
By Francis Eickbush



This past conference in Salt Lake City we were instructed in a very attentive presentation by Jeffrey Lucas. One of the key points made in that presentation was the fact that there is only one line between two adjoining property owners. That one line is the line we are to define in our survey.

Within that focus of thought, we cannot stake the deed and leave it at that. Evidence is to be gathered which we evaluate by applying rules of survey and the intent of the deed to reach our conclusion as to the proper location of the lines. When we mark the line and set corner monuments, we are marking the line between the adjoiners, a common line.

The question which we should have founded well in our mind is "What are the deciding factors upon which I chose this location to monument?" If this survey were to be submitted to a court of law, these factors would be asked of the judge or attorneys. Are we prepared to answer convincingly? Do we have rebuttals based on rules of evidence for other possible points to monument?



A surveyor was asked to survey the deed for a rancher who had several years before contracted to have the property staked and described. Upon retracing the deed and finding pipe monuments at selected corners of the property, the surveyor stated that the pipe monuments were close enough that he would not move them. What he found is that his measurements did not fit the monuments exactly, but he recognized that they were set in the intended locations and fit the intent of the deed.

When we select a point which would be other than one already marked, we have created a second line. Which line is the correct line? Setting a second monument and creating another line is confusing to both neighbors and does little to enhance the feelings of confidence in our profession.

There is a time when we may find a monument does not meet the intent of the deed nor fit the rules of evidence. In those cases we should contact the prior surveyor and try to work out the differences. If he will not work with you, you may have to set another corner. However, the record should be well documented with a tie to the other corner and reason(s) it was not accepted.

As our work is to stand the test of scrutiny, our record should be completely understandable as to what we did and why. Clarity of the record is essential to understand the integrity of the work.

Understanding that our profession is not an exact science should be the reason for discussion of solutions and not an excuse for sub-professional work.

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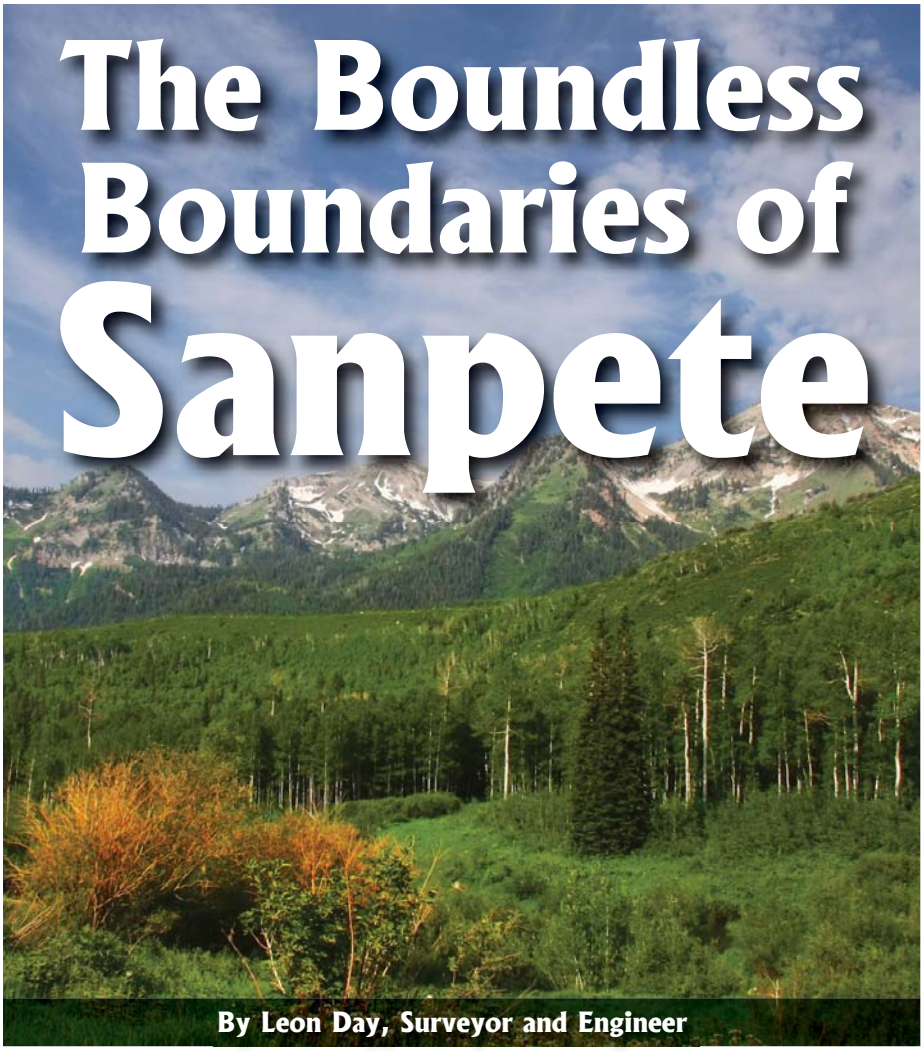
The Boundless Boundaries of Sanpete



By Leon Day, Surveyor and Engineer

Sanpete County is a beautiful county with lots of boundless, wide open space.

However, there is a surprising aspect to Sanpete's vast landscape; a large percentage of official land descriptions are also boundless.

As a land surveyor and civil engineer located in Fairview, I can say that's a problem.

Let's dig deeper into the boundless descriptions kept in the Sanpete County Recorder's Office. Legal descriptions precisely detail the boundaries of your land, how to locate it, and what you own and what your neighbor does not, right? Just get your deed and call a surveyor to fix you right up.

If only it were so simple!

A very common kind of land description is a metes and bounds description. The "metes" are the bearing (direction) and distance measurements around a land parcel. "Bounds" are reliable natural features or permanent manmade structures, like a prominent boulder, the center of a stream, buildings, roads, fences, or metal pipes and wooden stakes placed by a surveyor.

Many folks erroneously believe that a land description that only lists the metes is a "metes and bounds" description. Actually, such a description is a metes without bounds description. In practice, a typical metes-only description may make it difficult to accurately locate your boundaries. Straightforward application of metes-only descriptions, strictly according to the numbers, may even incorrectly place a boundary line.

That's because the metes are only as good as the measurements between the bounds they originated from. The bounds should remain fixed in place while the metes will vary according to how and by whom the measurement is made.

For a surveyor trying to retrace property lines, it is critical to have specific bounds listed in the legal description, and then to be able to locate them on the ground.

Sanpete was originally surveyed by the U.S. General Land Office (GLO) between 1856 and about 1900. The GLO surveyors used a chain and a compass/transit. Review of original field notes reveals that chaining occurred at a brisk pace. These pioneering surveyors literally trotted across the countryside measuring with the chain. Retracing many of their footsteps and comparing their distance measurements to each other or to modern electronic and satellite distance measuring technology has produced significant differences.

How do we resolve these differences? The original surveyors placed special bounds on the ground, called section corner monuments. Originally, land was divided into townships and then subdivided into sections. The bounds usually were marked stones or wood posts and were set at half-mile intervals along the section lines. Property corners and boundaries are controlled by these bounds (original physical markers), not the metes that may vary from survey to survey.

The Public Land Survey System (PLSS) was created to survey the land, place the bounds, and create field notes and plats before the land was transferred from federal to private ownership. Once the land went private, local government was to maintain the bounds. This is where the system broke down or, as I like to say, slid off the rails.

There are few Sanpete County records beyond the original PLSS survey of the GLO. Also, most of the original bounds monuments were susceptible to disturbance by nature and the activities of man, and therefore were obliterated or destroyed, especially in the valley. Sanpete County Surveyor's records should have been kept on the location and status of all section corners from day one, but to my knowledge Sanpete County does not have records before 1989, and few since. The very bounds that the whole fabric of the land ownership system is founded upon were allowed to wither and die on the vine.

Add to that 150 years of further subdivision into smaller parcels where bounds should have been placed at new land parcel corners and specifically called for in the descriptions. This is very critical for maintaining boundaries and retracing them at later dates. This simply didn't happen and has lead to the present day quagmire where the visitation of a metes-only surveyor may be a disastrous event for landowners. If physical bounds were present on the ground, and written descriptions of them were included in all deeds, common boundaries between neighbors would be easier to clearly locate. Thus, the bounds are far more important than the metes.

Moving forward, we should take the necessary steps to solve this conundrum.

Sanpete is on the verge of fast- paced growth and development like other rural communities close to the Wasatch Front. As a community, we should avoid nasty and expensive boundary disputes with our neighbors. Boundaries should be marked by bounds, and those bounds listed in land descriptions, and the metes need to be updated to accommodate modern Geographic Information Systems (GIS) and Global Positioning Systems (GPS) and all the users of this information.

You may believe that your deed's metes accurately give the location of your property, but the reality is they probably don't. Without the bounds, it is almost impossible to determine with certainty the point at which metes measurements begin, continue and end. You can't measure a thing from square one unless you know where square one is. Therefore, while the metes may give a somewhat accurate description of the area and dimensions of your property, there's no guarantee that where your property measured out from the metes is the same place that it was when located from the originally intended bounds. Property lines located from fixed bounds shouldn't move but when continually remeasured from the metes only may be a moving target. Boundaries should be stable and the law states they should never move once created. However, that may be subject to whether you can find the boundary on the ground!

Without the bounds fixed in the ground and written into the description, it's difficult to reconcile the metes on paper to the physical reality. Landowners deserve and should demand easily available and accurate computer data and descriptions that locate things on the ground with reliability.

Sanpete County landowners should insist upon the separation of the combined Recorder/Surveyor's office and return to the election of a licensed professional county surveyor with a mandate to maintain and perpetuate the bounds of our land ownership system.

The boundless quagmire just worsens every year.

Leon Day graduated from Utah State University in agriculture and irrigation engineering and has been a private surveyor and engineering consultant in Utah for the past 15 years. Mr. Day is licensed as a professional land surveyor and professional engineer in Utah.

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Surveying Egypt

Dr. Harold Mitchell, PE, PLS, of BOSS Engineering & Surveying and a faculty member at Brigham Young University Civil Engineering Dept., led a team of engineers and surveyors to Egypt for two weeks in February 2009. Other team members were Todd Osborn, PLS, also of BOSS Engineering, Alexander Lovett (senior in Civil Engineering), and Dr. Brent Benson, PE, of Benson Engineering. The team assisted in the BYU archaeology project at Fag el-Gamous headed by Dr. C. Wilfred Griggs, Professor of Ancient Scripture.

The archeology project is currently focused on excavation of a large cemetery at Fag el-Gamous in the Fayum province of Egypt. The cemetery is believed to be about 300 acres in area. Bodies are buried at several levels and date from both pre-Christian and Christian times. During the 2009 season, the project excavated only one 5x5 meter square and recovered 67 bodies. The remains, as well as wrapping textiles and any grave goods, are carefully examined in the study of who the people were and how they lived.

Using differential GPS equipment, the engineering team established a grid system covering the cemetery and set permanent monuments that can be used to tie together future excavations. The team also acquired data to make a detailed topographic map of the cemetery and surrounding area. Local workers from the archaeology project were assigned to assist the engineers, carry equipment and pound markers. Todd said, "It was the largest survey crew I've ever had. We didn't speak any Arabic and they didn't speak much English but we got along great." The Egyptians associated with the project have a great respect for engineers (mohandis in Arabic) and treated team members very well. Once they understood what was needed, they were always anxious to help.

Fag al-Gamous is located on the eastern edge of the Fayum oasis about 60 miles south of Cairo. The oasis is lush and green with palm trees and fields of alfalfa, grain, vegetables, and orchards. The area is irrigated by natural sources and a large canal that brings water from the Nile River. Legend has it that canal was originally built by the Joseph whose story is told in the Bible. Surrounding the oasis is severe desert. The distance from lush green to nothing but sand and rock is about one stride.

A more challenging assignment for the engineering team was to measure and make virtual reconstructions of two pyramids. It was the first time GPS was used to map the structures.

The Seila Pyramid is located on a ridge about 2 km southeast of the cemetery. It was virtually unknown until excavated by the BYU team about 20 years ago. Inscriptions revealed that it was constructed by a pharaoh known as Snefru (the predecessor of Cheops who built the Great Pyramid at Giza) about 4,500 years ago. The pyramid was originally constructed as a step pyramid

Surveying Egypt *continued on page 12*

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Surveying Egypt *continued from page 9*

but may have been cased to make a true pyramid. It is no longer entirely complete, since many of the stones have been removed, and the top has been eroded by windblown sand during the past 4-plus millennia. The team made measurements of the remaining faces and interior of the structure to construct a computer model of the pyramid when it was in its completed state.

Meidum Pyramid is a much larger structure located in the Nile Valley 10 km east of Seila Pyramid. It was built by the same pharaoh. Again, it was originally a step pyramid but was cased to become a true pyramid. It is believed that the outer casing collapsed sometime at or near its completion. There was apparently a structural weakness where the casing blocks did not tie to the step faces. All that remains now is some of the original casing masonry near the base and much of the step pyramid core surrounded by a pile of rubble. The engineering team was allowed by the Egyptian Supreme Council of Antiquities to take GPS measurements at Meidum to make a virtual reconstruction of the pyramid. One object was to determine the relative elevations of the tops of the two pyramids when they were complete.

There was also time to tour other places in Egypt. The ancient people must have been excellent engineers to accomplish the remarkable works the team visited. Dr. Griggs' favorite pyramid game goes like this. The Great Pyramid at Giza was built during the reign

of Cheops. He was pharaoh for 20 years. The pyramid consists of some 2,500,000 blocks with an average weight of 2.5 tons. If the construction team worked 16 hours per day, seven days a week for 20 years, they'd have to place one block every 2.8 minutes. That includes quarrying, cutting, moving and placing the blocks. You figure out how they did it.

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Utah State TRIG-STAR

Yeonjoo Kwon, Gloria Lee, and Tyler Knighton from Syracuse High School attended the May luncheon of the Salt Lake Chapter of the Utah Council of Land Surveyors on May 21 at Joe Morley's, in Midvale, Utah, to receive their prizes for the 2008-2009 TRIG-STAR competition.

A TRIG-STAR is a mathematics student who has demonstrated in competition that they are the most skilled among classmates in the practical application of trigonometry. The competition for the honor is simply a timed exercise which is the solving of trigonometry problems that incorporates the use of right triangle formulas, circle formulas, the law of sines, and the law of cosines. The competition is an extra-curricular activity held each year in high schools across the nation. Contestants have up to one hour to complete the exam, and the student who achieves the highest score in the shortest amount of time wins. From the winners at each high school, state level winners are determined. The first, second and third place winners in Utah received cash prizes this year of $100, $60, and $40 respectively along with certificates. The Utah State winner Yeonjoo Kwon will compete against other state winners by taking the national exam.

The contest helps accomplish the following goals:

- To promote excellence in the mastery of math in high school
- To honor students who have demonstrated their superior skill at the local and state level
- To acquaint them with the use and practical applications of math in the surveying profession
- To build an awareness of surveying as a profession among high school students, counselors, and math teachers.

One of the most important parts of the Trig Star Competition is a presentation of career information in each high school prior to the exam date. The objective of the presentation is to discuss Surveying and Mapping with the students. Tell them briefly, what it is, why it's a good career, why we like it and how trigonometry is used in our business as a practical application of math.

In past years only a few students have participated in the TRIG-STAR competition throughout the state, but this year we had two high schools participate, Rich County High School and Syracuse High School. Out of the 7 students at Rich County and the 8 students at Syracuse there were 6 students who were considered for the State contest. The winning students for the State are broken out in the following table:

Student	School/ Graduation Year	Point Total	Time	Prize
Yeonjoo Kwon	Syracuse/2011	90	0:38:48	$100.00
Gloria Lee	Syracuse/2009	65	0:39:36	$60.00
Tyler Knighton	Syracuse/2010	64	0:41:21	$40.00
Tyson Larson	Rich Co./2010	60	0:52:05	
Austin Clark	Rich Co./2010	45	0:25:38	
Zachary Jacobsen	Rich Co./2010	40	0:32:45	

The Salt Lake Chapter of UCLS sponsored the State Contest this year and two companies sponsor the local contests: Mortensen Management, Inc. sponsored the Syracuse contest, and Surveyor Scherbel, LTD. out of Big Piney, Wyo., sponsored the Rich County contest.

Surveyor Scherbel has sponsored Trig-Star since the program began. They now sponsor three High Schools in Wyoming – Big Piney, Cokeville and Star Valley. This is the first year they have sponsored Rich County and they also sponsored for the first time three schools in Idaho.

When asked about Surveyor Scherbel's experiences with the TRIG-STAR Program, Susan Hoffman said the following:

"We find the teachers are generally excited to have their students take part and each does it a little bit differently. Our teacher in Big Piney uses Trig-Star in her curriculum and all of the students take the test during the class period and she gives them a grade also. She had 33 students take the test and is enthusiastic about the program. Star Valley High School students took their test during lunch hour and they had about 9 students participate.

"We had one of our employees present an informational DVD to the students in Rich County and in the Idaho schools before they took the test and he also proctored it. The schools in Wyoming that we've been sponsoring for some time are sent the information and the teachers proctor it. We haven't used the program so much as an encouragement for students to go into Land Surveying, but as a support of our local school academics and trigonometry. The teacher in Rich County wants to participate next year and was interested in the scores of the other schools. It was a positive experience for him and we will definitely sponsor it there next year.

"We feel that successful sponsorship requires the land surveyor to take the time to go personally to the school mathematics department and explain Trig-Star's benefits to the students. Because of distance we did not go personally to the teacher in Rich County or the ones in Idaho, but we sent them a letter explaining the program and some sample problems then asked them if they would like to participate. They all responding favorably and we then communicated by both mail and phone.

"I wouldn't say that Trig-Star is really that successful in Wyoming. This year we only had 7 schools participate with 3 other land surveying companies sponsoring it. We were excited that a Big Piney Student (a sophomore girl) won our state contest this year with a score of 90 and a time of 0:34:18...

"I feel that the Scherbels are committed to investing in the communities where their land surveying services are provided. They are also supportive as sponsors in other school academic programs."

Why do the Scherbels care so much about supporting school academic programs? Should we have a similar concern here in Utah? Perhaps the following excerpts from the *US Department of Labor—Occupational Outlook Handbook 2008-2009 Edition* will help us to understand:

> **Employment change.** Overall employment of surveyors, cartographers, photogrammetrists, and surveying and mapping technicians is expected to increase by 21 percent from 2006 to 2016, which is much faster than the average for all occupations. Increasing demand for fast, accurate, and complete geographic information will be the main source of growth for these occupations.
>
> An increasing number of firms are interested in geographic information and its applications. For example, GIS can be used to create maps and information used in emergency planning, security, marketing, urban planning, natural resource exploration, construction, and other applications. Also, the increased popularity of online mapping systems has created a higher demand for and awareness of geographic information among consumers.
>
> **Job prospects.** In addition to openings from growth, job openings will continue to arise from the need to replace workers who transfer to other occupations or who leave the labor force altogether. Many of the workers in these occupations are approaching retirement age...
>
> Opportunities should be stronger for professional surveyors than for surveying and mapping technicians. Advancements in technology, such as total stations and GPS, have made surveying parties smaller than they once were. Additionally, cartographers, photogrammetrists, and technicians who produce more basic GIS data may face competition for jobs from offshore firms and contractors.

As technologies become more complex, opportunities will be best for surveyors, cartographers, and photogrammetrists who have a bachelor's degree and strong technical skills. Increasing demand for geographic data, as opposed to traditional surveying services, will mean better opportunities for cartographers and photogrammetrists who are involved in the development and use of geographic and land information systems.

Although it does not look like it today, the demand for surveyors is projected to be greater in the next 7-10 years, the average age of a surveyor is getting older (Just look around at the next luncheon you attend), and technologies are becoming more complex each year. We cannot afford to wait for the young surveyors to come to us looking for a job. We can not afford to have surveyors with poor math and technical skills on survey crews when most crews are getting smaller and smaller. We must be proactive in promoting our profession to the public for the future generation's sake.

We are looking forward to having others participate with us in the fall for the 2009-2010 TRIG-STAR competition; will you be one of them?

Here are the sixteen SLCC Surveying Technology Program Students who graduated on May 8th, 2009:

Cortney K. Anderson
Lucas Blake
Jared P. Cox
Michael Ray Draper
Charles John Galati *(Dean's Honors List)*
Todd Elias Jacobsen *(President's Honors List)*
Karl D. Jensen
Thomas Tyler Jensen
Adrian Michael Kurip
Cory B. Neerings
Scott Kevin Pounder
Nickolas George Smith
James D. Taylor
Trenton J. Trane
Jessica Raeleen Wier *(Dean's Honors List)*
Michael Shane Withers

Congratulations to each and every one of you, and may we do as well—if not better—for the Class of 2010!

Why the Four Corners Monument is in

Exactly the Right Place

By William Stone, NGS

Recent media reports incorrectly stated that the location of the Four Corners survey monument—marking the point common to Arizona, Colorado, New Mexico, and Utah—is in error by 2.5 miles, and suggested that the monument therefore does not correctly mark the intersection of the four states.

These reports also erroneously attributed the discovery of this supposed error to the National Oceanic and Atmospheric Administration's (NOAA) National Geodetic Survey (NGS). NGS did not, in fact, make any claim or pronouncement that the monument is incorrectly located or suggest that it should be relocated. NGS has, however, worked with the media to correct inaccuracies in the initial reports, clarifying that the distance between the actual location of the monument and its intended location is substantially less than the reported 2.5 miles, and that—as affirmed by the Bureau of Land Management (BLM)—it does indeed correctly mark the four-state-intersection point. Because NGS was specifically named in the reports, this brief document was prepared to present some pertinent facts and history about the Four Corners monument and its placement.

In 1875, a surveyor named Chandler Robbins was contracted by the U.S. General Land Office (GLO), the BLM's predecessor, to survey the entire boundary between the territories of Arizona and New Mexico, from the U.S.-Mexico boundary to the 37th parallel of latitude north of the equator. He was charged with also establishing, at the boundary's northern terminus, the Four Corners monument, as it would be known upon completion of the other territorial boundary surveys terminating there. Robbins was directed to base his survey on the geographic coordinates of Ship Rock (a prominent northwestern New Mexico landform), which had been determined the previous year during the decade-long U.S. Geographical Surveys West of the 100th Meridian, led by First Lieutenant George Wheeler.

An 1863 Act of Congress, signed by President Lincoln, which separated Arizona from New Mexico, specified that the dividing boundary should be coincident with the 32nd meridian of longitude west of the Washington (D.C.) Meridian. The Washington Meridian, which had been in use since 1850, was defined as bisecting the dome of the old Naval Observatory, situated at a longitude of 77 degrees 03 minutes West (for simplicity, longitude values presented here are rounded to the nearest arc minute). In fact, the boundaries of 11 western states are similarly longitude-referenced to the Washington Meridian, and not the Greenwich Meridian. This practice was in place in the U.S. until 1912, when our nation adopted Greenwich as its standard longitude reference.

Hence, what Congress had specified for the Arizona-New Mexico boundary, and the Four Corners monument, was that they should be established at a longitude of 109 degrees 03 minutes West, as referenced to the Greenwich Meridian. Therein, we believe, lies the source of the invalid report

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of a Four Corners monument location error of 2.5 miles. Some people apparently relied on the incorrect premise that the marker was originally intended to be located at a longitude of exactly 109 degrees West. But, Robbins followed his marching orders correctly, and the Four Corners monument was established at the point he determined, to the very best of his ability and using the available technology, to be the prescribed location of 109 degrees 03 minutes West longitude and 37 degrees North latitude. There, his meridian survey intersected the 1868 New Mexico-Colorado boundary survey, which ran along the 37th parallel. Subsequent surveys established the Utah-Colorado and Arizona-Utah boundaries, thereby completing the Four Corners assemblage of territorial (eventually state) lines, as specified by Congress.

It is interesting to note that, upon completion of his Arizona-New Mexico boundary survey, Chandler Robbins went to the effort to write a letter to the editor of The Santa Fe New Mexican (still today's daily newspaper) explaining the very issue of the difference between longitude values referenced to the Greenwich Meridian and those referenced to the Washington Meridian. In this letter of November 1, 1875, Robbins included the following explanation:

> It seems to have been the general impression that the line was the 109 degrees of longitude west of Greenwich. Such is not the case, as the law makes it 32 degrees of longitude west from Washington, which corresponds to 109 degrees 02 minutes 59.25 seconds west from Greenwich, and which places the line a small fraction less than three miles farther west than would have been the case if it had been run as the 109 degrees of longitude.

In these few words, Robbins takes the mystery out of a technical issue that has evidently confused and misled some people for more than a century.

Nonetheless, there remains the question of how close the Four Corners monument is relative to its intended location. In fact, there is a discrepancy between the actual location, which we know to a high degree of accuracy, and our best knowledge of where it was intended to be located. But, instead of a 2.5-mile discrepancy, as reported in the initial news items, this offset is in fact only about 1800 feet, or less. Not only is the offset only about one-tenth of the alleged location error, it is in the opposite direction; the intended monument location is west of the actual monument. There is, however, uncertainty in precisely quantifying the relationship between the intended and actual monument locations due to changes, since 1875, in some technical details of the geodetic reference systems utilized. The actual offset might in fact be considerably less than our estimate.

Regardless of the technical nuances, we can confidently say that, considering the relatively primitive surveying technology of the day, the remote and difficult prevailing field conditions, and uncertainty in the survey's beginning coordinates for Ship Rock, Chandler Robbins' survey was a resounding success. He "nailed" the location of the Four Corners, to the best of his ability, using the tools and information available to him at the time.

Finally, we cannot overemphasize the fact that the aforementioned technical geodetic details are absolutely moot when considering any question of the correctness or validity of the Four Corners monument in marking the intersection of the four states. Indeed, the monument marks the exact spot where the four states meet. A basic tenet of boundary surveying is that once a monument has been established and accepted by the parties involved (in the case of the Four Corners monument, the parties were the four territories and the U.S. Congress), the location of the physical monument is the ultimate authority in delineating a boundary. Issues of legality trump scientific details, and the intended location of the point becomes secondary information. In surveying, monuments rule!

The physical monument marking the Four Corners has been rebuilt multiple times by the GLO and BLM over the years since Robbins installed a seven-foot-tall sandstone shaft to mark the spot. But the same location has been perpetuated now for more than a century and a quarter. The current monument complex was constructed in 1992 and includes a visitor plaza area surrounding a commemorative survey disk. The Four Corners monument has been included in modern high-accuracy Global Positioning System (GPS) geodetic surveys, producing three-dimensional coordinates accurate to an inch or better. These survey results and descriptive information about the monument are included in the database of geodetic control points maintained by NGS. The geodetic control datasheet for the Four Corners monument (designation: CO UT AZ NM) can be found online here: http://www.ngs.noaa.gov/cgi-bin/ds_mark.prl?PidBox=AD9256.

Hence, in addition to marking the intersection point of four states, the Four Corners monument is also a component of what is known today as the National Spatial Reference System (NSRS), which is maintained by NGS and serves as the nation's geospatial framework. Through its published geodetic position, the monument provides a mechanism for geospatial professionals (land surveyors, engineers, etc.) to access this framework with a high degree of both accuracy and certainty. The Four Corners monument continues its long-standing heritage of playing an important role in the history and demarcation of the American West—all the while bearing witness as the only point of intersection of four U.S. states—in exactly the right place.

NGS is responsible for defining, maintaining, and providing public access to the NSRS—a consistent national coordinate system that provides the foundation for mapping and charting; some state boundaries; transportation, communication, and land records systems; as well as scientific and engineering applications. More information about NGS and the various components of the NSRS can be found at: http://www.ngs.noaa.gov. NGS is not normally involved in boundary-related issues and is providing the information contained in this document simply as a statement of clarification of the pertinent facts and background regarding the Four Corners monument. The field notes and plats for the remonumentation of the Four Corners monument and the surveys/resurveys of the state boundary lines can be obtained from the BLM at: http://www.glorecords.blm.gov/.

For additional information, please contact William Stone, NGS, at: william.stone@noaa.gov.

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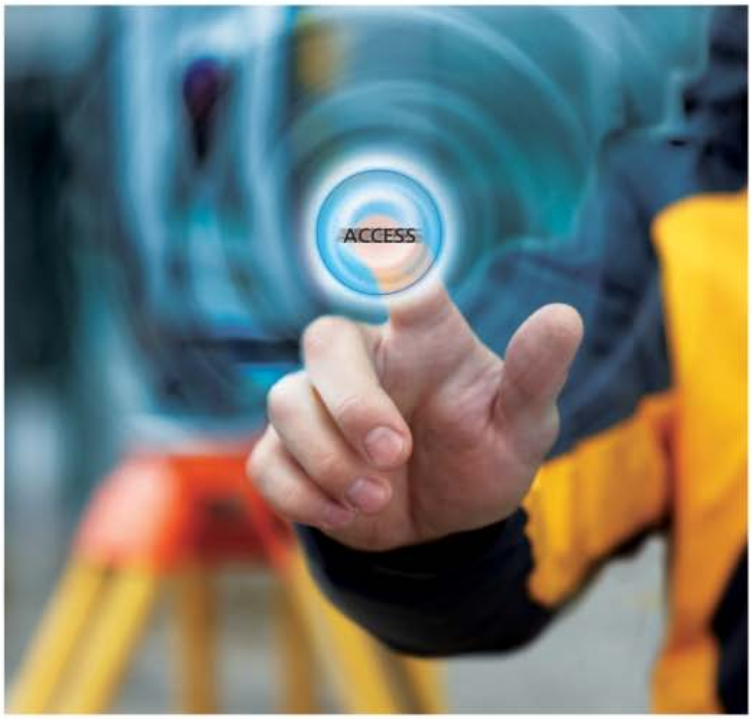

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