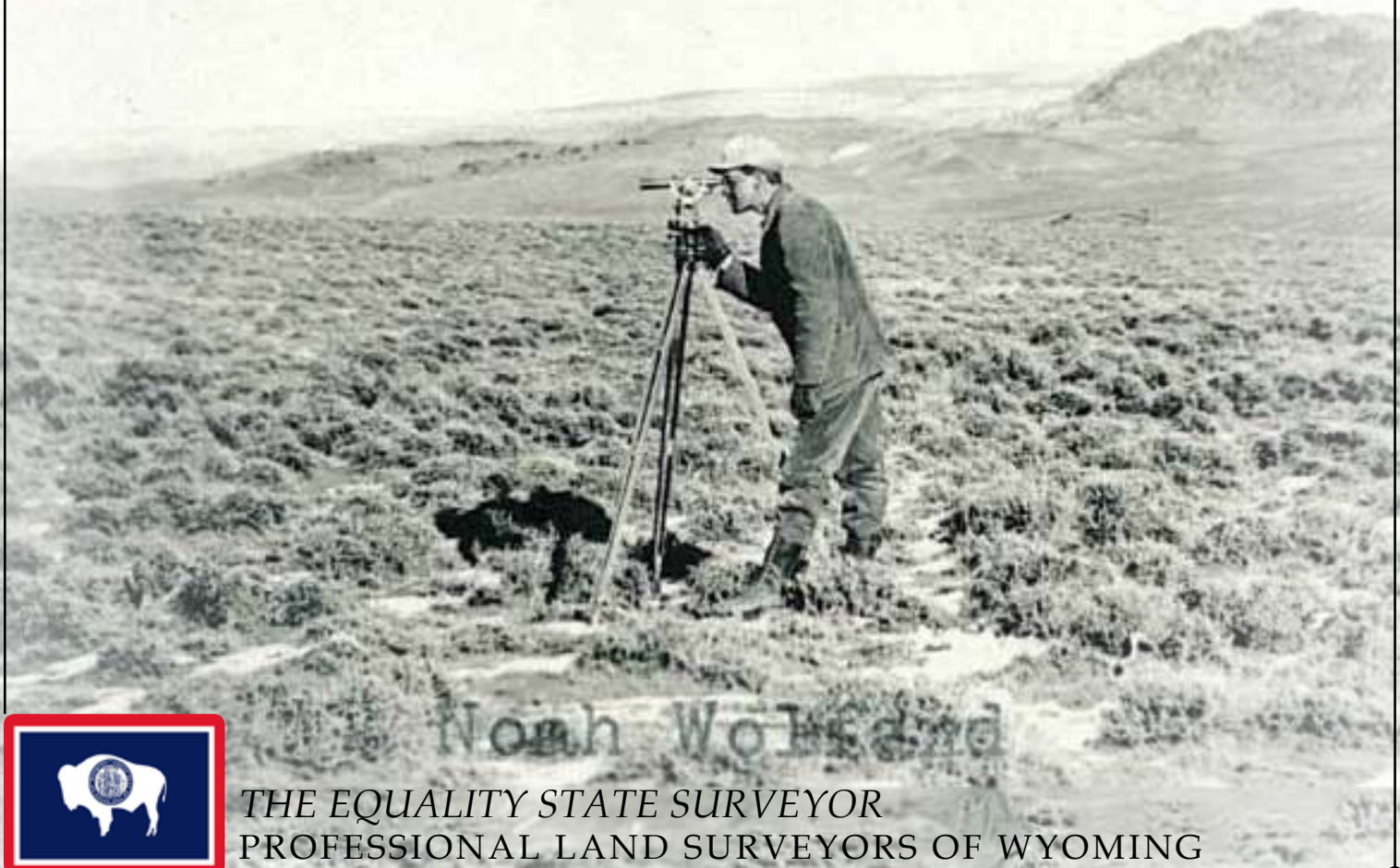


Volume 30: Issue 3
July, 2019



LINES & POINTS

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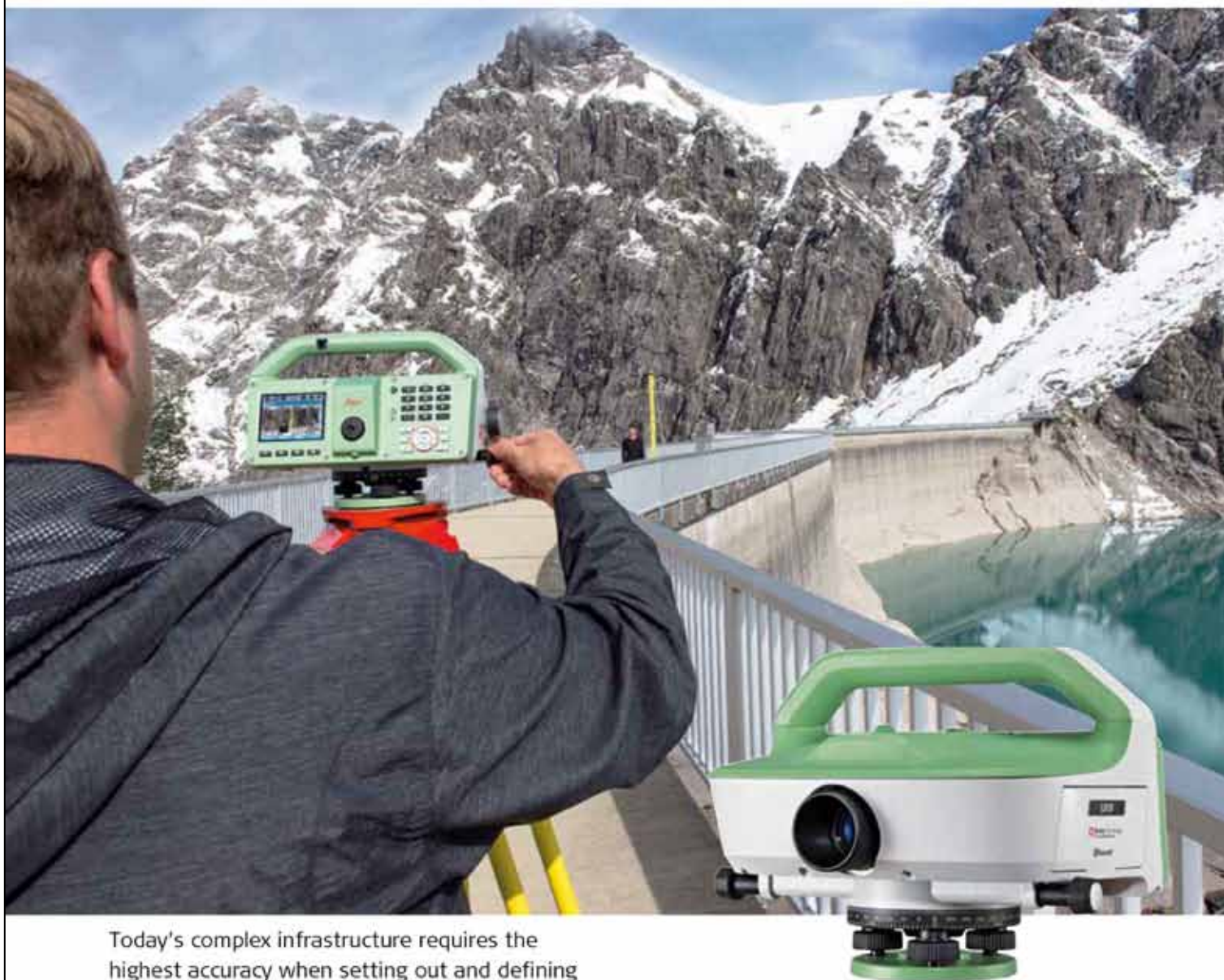


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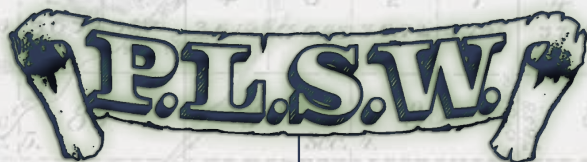
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On The Cover

NOAH WOLFARD,
1933 NOAH WAS THE STATE
REPRESENTATIVE TO THE U.S.
COAST AND GEODETIC SURVEY
FOR OKLAHOMA.

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PRESIDENT'S MESSAGE

In recent years, I have seen several articles and also heard various conversations about the decline of mentoring in the Land Surveying profession. With the technological advances in surveying over the last few decades, there is no doubt we have evolved into doing much of our work independently as one person crews. I, as many other "younger" surveyors I'm sure, gained much of my early surveying experience in the field by myself. Granted, office assistance and advice were always a phone call away assuming I had cell phone reception.

During those earlier years of surveying, I often speculated whether I would be better off surveying decades before when there was no thought of GPS. When one had the opportunity to work alongside a more experienced surveyor in the field every day. Usually, this speculation came at a time when I was struggling to figure out what was wrong with my GPS projection, or what to do with a random metal object in the ground that didn't fit the fences. Again, I pull out the cell phone and wonder if the office is getting tired of my calls yet?

As a product of the GPS age, I feel my career was strengthened by the independence that came with working on my own early on. In many ways, this independence taught me to think for myself and make sure I did sufficient research upfront to be fully prepared. It also encouraged me to verify things in whatever ways possible before leaving the field. Had I had a more experienced party chief with me all the time, it would have been easier to call on them to solve the problem. When surveying alone, it is amazing how good one can become at problem solving!

It is obvious that things have changed dramatically over the past few decades, and I would argue this is for the better. I can't imagine surveyors today wanting to trade the technologies



we have to survey things with a transit and chain, for the sake of having more one-on-one in the field mentoring. So how do we provide and seek mentoring today? I think it is imperative for mentors to be available to provide mentoring when it is needed. We all have the ability to mentor at some level, and being open and available answer questions or provide guidance goes a long way in the development of young surveyors.

One last thing I would add is the significance PLSW Chapter meetings have in the mentoring process. I began attending the NW Chapter meetings at the beginning of my career well before licensure, and still look forward to the meetings today. For me, the biggest value in attending has always been the opportunity to get together with many more experienced surveyors to share with and learn from. Mentoring at its finest.

Opportunities for mentoring are abundant today, and it is up to both mentors and mentees to make it happen. I challenge all who need mentoring to seek it, and more importantly we all be willing and take the time to provide it. This is the foundation of our profession.

Lyle J. Casciato, PLS, CFedS

President, Professional Land Surveyors of Wyoming

ANNOUNCEMENTS



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Feel free to contact Tiffany, Dagmar, or me with any questions.

For general undergraduate information, contact tiffany.peterson@maine.edu.

For general graduate information, contact dagmar.moravec@maine.edu.

For surveying information, contact ray.hintz@maine.edu.

Thanks for your help in getting the word out!

Ray

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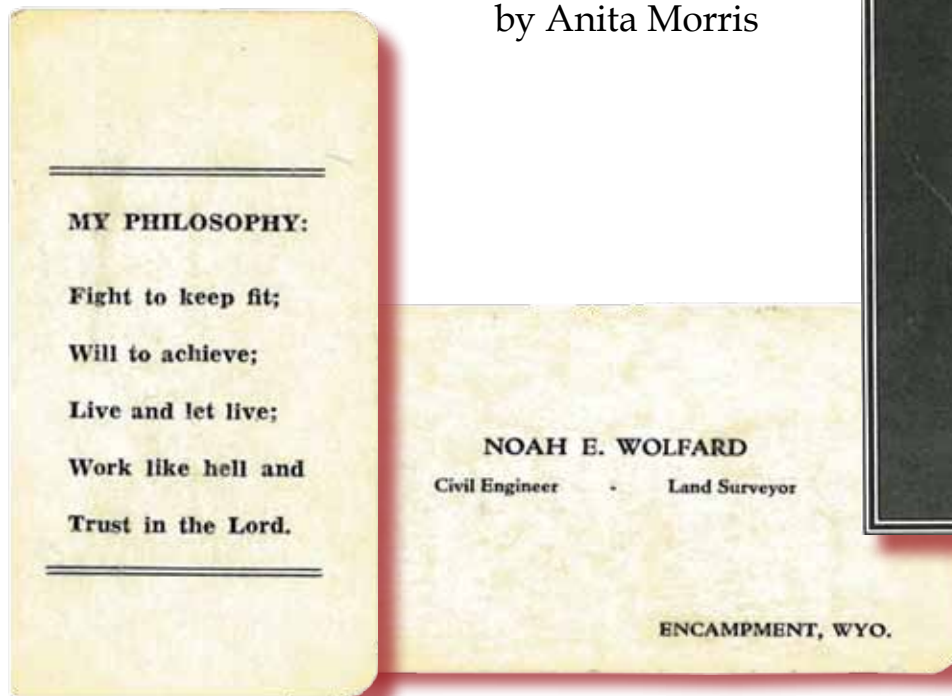
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GATHERING AT THE INITIAL POINT



A Walk in His Footsteps

by Anita Morris



NOAH E. WOLFORD CIRA 1910.

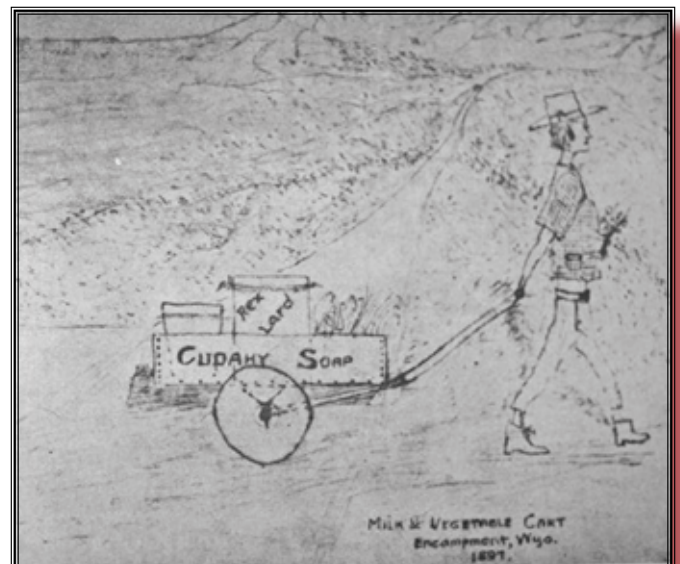
The Grand Encampment Museum now houses the Noah Wolfard Collection. He was a registered land surveyor who lived in Encampment. The collection consists of water rights maps, road design maps, topographic maps, some personal items, and pictures. This article is written to be an interactive story allowing the reader to actually go find Noah's places as they exist today. So grab your GPS and have fun with this story.

The reader is welcome to peruse the Noah Wolfard collection. It is in the Doc Culleton Building, Oldman research room. [Lat. 41°12'14"N and Long. 106°47'20"W]

Old surveyors were tough, and Noah E. Wolfard was one of them. Old surveyors were tough, because among other things, they had to walk through miles of sage brush, carry heavy equipment, ride horseback, actually work with pencils and trig tables, and ink maps by hand.

Noah was born to William Henry and Mary Ann Wolfard on June 10, 1886. The family had homesteaded about a mile north of Encampment three months before he was born, and because they hadn't finished their cabin yet, Noah was born in a tent. [To get to some of the original homestead buildings go west on 4th Street to County Road 303. The buildings are on the HDH Ranch LLC property, Lat. 41°13'18"N and Long. 106°47'52"W.]

As a child Noah had a specific job on the family ranch, delivering milk to Encampment. At age 11, he pulled a milk wagon for the family business, People's Dairy, delivering milk, vegetables and fresh flowers to one of the businesses in town, the Tin Plate Cafe. He is quoted by the Saratoga Sun (in 1971) as saying "I spent my first 11 years planting 'taters, pulling sagebrush, irrigating, and running the milk wagon." He also helped



NOAH WOLFARD DREW HIMSELF AS A BOY DELIVERING MILK AND VEGETABLES TO ENCAMPMENT.

his father survey and build the Wolfard irrigation ditch. The ditch extends from the North Fork of the Encampment River. Today it runs for about 7 miles with many side ditches and enlargements that have been built over the years. [For a view of the ditch go south on Hwy 70 to Lat. 41°12'18"N and Long. 106°48'31"W.]

Noah went to school in the one room school house that was on their ranch. [This building is now at the Grand Encampment Museum, Lat. 41°12'12"N and Long. 106°47'21"W.] After Encampment built a school around 1902, Noah began attending it. [This building is now a private residence at 421 Lomax, Lat. 41°12'30"N and Long. 106°47'20"W.] In 1910 he graduated with a degree in Civil Engineering from Valparaiso University in Indiana. With his degree, he returned to Encampment in 1911 to begin his private practice as a surveyor and civil engineer. However, his company did not seem to flourish prospecting oil in the Shell Creek area. In 1916 he went to Kansas City, Missouri, and worked as a draftsman and designer for two years. He

worked at army construction during World War I, and after the war he became an associate professor in the Engineering School at the University of Oklahoma in Norman, Oklahoma, where he taught until 1940. While there he completed his master's degree in Civil Engineering from Iowa State College in 1926.

In 1933 Noah was the state representative to the U.S. Coast and Geodetic Survey for Oklahoma. During the years of the depression, between 1933 and 1938, he organized a white collar relief project and executed over 500 miles of second order geodetic control surveys. The results of these surveys were published by the Oklahoma Geological Survey in two bulletins and three circulars. Noah was listed in the

1962 "Who's Who in the Southwest" for his accomplishments.

During the World War II years of 1940 to 1944, Noah worked for the Defense Department in Louisiana and Texas. He was Captain of the Ordnance Department at the Red River Ordnance Depot in Texas. Then

from 1944 to 1954 he worked various engineering and construction jobs which included valuation engineer for the Chicago, Burlington and Quincy Railroad, city engineer for Kansas City, MO, field engineer for the states of Louisiana and Texas, and field engineer for the city of Dallas.

Noah returned home to Encampment in 1954 at the age of 68, where he again opened a private practice as an irrigation consultant and general engineer. His registration number is PELS 377 which he got in 1957. He served as county surveyor to Carbon County until 1962. He completed many water rights maps for local ranches, designed and wrote easements for several secondary roads, and

surveyed mining claims. Some of his other accomplishments were designing the first sewer system for Encampment in 1956, and surveying, staking, and signing the plats for the Saratoga Inn Country Club Subdivision #2 in 1962. [A view of the subdivision is in Saratoga at Lat. 41°27'07"N and Long. 106°48'01"W.] He also did topography surveys for irrigation projects such as a hand drawn contour map for the Storer ranch, later to become the Old Baldy Club in Saratoga. [The club's front gate is located on Pic Pike Road at Lat. 41°27'10"N and Long. 106°47'05"W.]

Noah had two marriages. He married Ethelyn Cochrane in 1917. They had four sons: Donald, Neal, Robert and William. This



CAPTAIN OF ORDINANCE,
NOAH WOLFARD IN 1943

marriage ended in divorce in the 1940s. In 1956 Noah married Fannie Fritts, and they lived in her house, which used to be the Tin Plate Cafe, and is one of the oldest buildings in Encampment. [It is the little brown house with big pine trees, located at 4th and McCaffrey, Lat. 41°12'34"N and Long. 106°47'21"W.]

In 1970 Noah officially retired. His retirement project was to plant 600 trees on a little hill east of Riverside on Hwy. 230, known locally as Noah's Knob. He took care of them and watered them daily, envisioning a wooded hillside. Unfortunately, the trees did not survive and the highway has cut into the hill so only a little of it remains. [Go east from Riverside on Hwy 230 to Lat. 41°13'06"N and Long. 106°45'18"W.]

Because of ill health, Noah returned to Norman, Oklahoma in 1973, where two of his sons lived, and he died there at the age of 89 on July 17, 1975. He requested that his ashes be returned to Encampment, and that he be buried next to a baby sister, Flo, who died shortly after birth. He is buried in Mountain View Cemetery east of Riverside where he shares a headstone with his baby sister. [To get to the cemetery go east on Hwy. 230, then turn left on County Road 285. The grave is at Lat. 41°13'33"N and Long. 106°44'27"W.]

One of the surprising things among the Noah Wolfard Collection papers are seven issues of "Avant Garde" magazines from 1968 and 1969. According to Wikipedia this magazine was edited by Ralph Ginzburg, published in New York City, and "while it could not be termed

obscene, it was filled with creative imagery often caustically critical of American society and government, sexual themes, and (for the time) crude language." Noah may have been more liberally minded than the average Encampment citizen for the time.

In a letter to the Wolfards, dated July 20, 1954, Lora Nichols says "the initials for Noah Ellsworth Wolfard made him , "Never old: always N E W".

To quote the Saratoga & Encampment Wyoming, An Album of Family Histories as written by Arleen Woods, "Noah was a man who loved life and lived it with zest. He took pride in his accomplishments and in those of his family. His legacy to all of us: that we are never too old to learn and that learning and having a variety of interests keep us forever young." Noah's philosophy of life was printed on the back side of his business cards. It was:

"Fight to keep fit; will to achieve; live and let live; work like hell, and trust in the Lord".

Sources:

Saratoga & Encampment Wyoming, An Album of Family Histories.

A Wyoming Centennial Lasting Legacy

Project by The Joint Centennial Committee of Saratoga and Encampment, Wyoming, 1990


The Saratoga Sun, October 7, 1971, Vol. 84, No. 13

The Story of the William Henry Wolfard Family, as told by Zoe Wolfard Henry. Grand Encampment Museum Archives.

Letter to the Wolfards from Lora Nichols, July 20, 1954. Grand Encampment Museum Archives



NOAH CARES FOR THE 600 TREES HE PLANTED ON NOAH'S KNOB.



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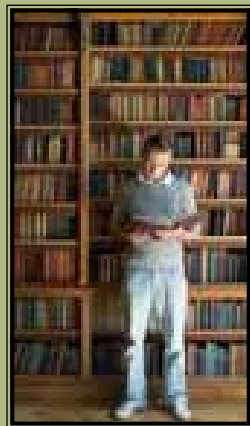


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Northeast Chapter	December 1	December 15, 2019	January 1, 2020
Northwest Chapter	March 1	March 15	April 1, 2020
West Chapter	June 1	June 15	July 1, 2020
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South Central Chapter	December 1	December 15, 2020	January 1, 2021
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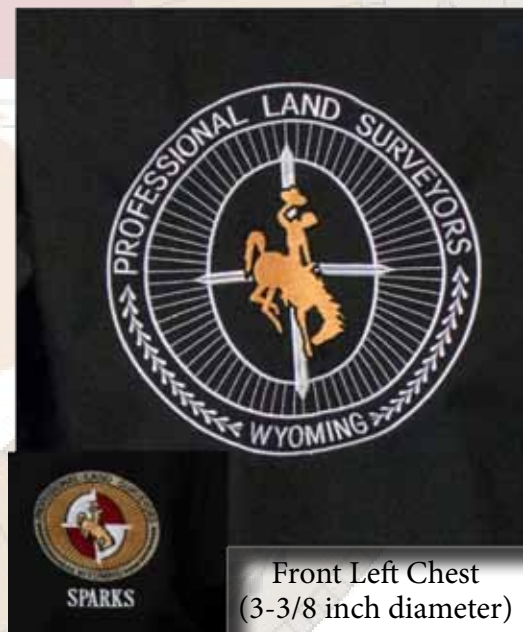
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"MERIDIAN"

USC&GS Triangulation Station

1935

On June 22, 2019, attention was given to the U. S. Coast & Geodetic Survey's (NGS) triangulation station known as "MERIDIAN" (LG0831) and its associated reference marks and azimuth marks which are located near the 6 PM Initial Point.

The triangulation station, originally established in 1935, is situated in the northwest quadrant (Nebraska side) of the intersection where the 6 PM Initial Point is located. At that time, two reference marks (No. 1 & 2) were established at the site and the azimuth mark (No. 1) was established 1.07 miles to the east-southeast near a farm located approx. 0.25 mile north of Mahaska, Kansas.

In 1976, Reference Mark No. 1 was found broken off, so a new monument was established and the original disk was restamped as Reference Mark No. 3. In 1986, the original Azimuth Mark was found to be substantially leaning, so a new one was placed 0.34 mile to the south and renamed Azimuth Mark No. 2. In recent years, both the reset Reference Mark No. 3 and the new Azimuth Mark No. 2 were broken off, but the disks were secured.

The 2019 work placed a concrete pad around the triangulation station to help secure it in place. Reference Mark No. 2 was straightened and a long steel U-post was placed alongside to secure its position. A new reference mark was established and the original disk was restamped with 4 and 2019 (the old RM No. 1 and 3 disk). It was placed in the area to the northeast of the Initial Point in the flat park area. A new azimuth mark was placed in the same general area where Azimuth Mark No. 2 had been located and the disk was restamped RESET 2019 (the old Azimuth Mark No. 2 1986 disk). The original 1935 Azimuth Mark was straightened and two long steel U-posts were placed at the corners to secure it in place. New painted posts and signs were placed by the monuments.

Static GPS positions need to be obtained on the two azimuth marks. Angles and distances need to be obtained from the triangulation station to each point associated with it the before the datasheet can be updated.



Triangulation station "MERIDIAN" before and after.



Driver Distractions

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When was the last time you talked on your cellphone while driving or ate behind the wheel? If you are like many drivers, you have made it a habit, putting yourself and others at risk.

Dangers of Multi-tasking at the Wheel

While there may be little you can do to control another person's driving, you can certainly control your own distractions. To minimize your risks while driving, avoid the following:

- Talking on a cellphone or texting
- Touching up makeup or hair in the rearview mirror
- Tending to smoking materials
- Adjusting the radio
- Eating
- Reading directions or operating a GPS

Mobile Offices

While many drivers' attention may be diverted as a result of multi-tasking behind the wheel, nothing tops the cellphone as a driver distraction. Many drivers use their cellphones to turn their cars into mobile offices, to catch up with friends and loved ones, or to simply squeeze more "productive" time into their day.

The Danger

Cellphone use is especially dangerous because drivers typically cannot divide their attention between the road and their conversation or text. Even if you use a hands-free device, you risk being distracted and inattentive.

It May Be Against the Law

Many states have laws outlawing the use of cellphones and texting while driving. To avoid a ticket and a potentially dangerous accident, do not use your cellphone in any capacity while driving. If you must make a phone call or text, pull off the road safely and then do so. No message is more important than saving someone's life.

Defensive Driving

In addition to avoiding distractions, give driving your full attention by driving defensively to minimize your risk of an auto accident. Driving defensively means being aware of the movement of drivers around you and making adjustments to your driving accordingly.

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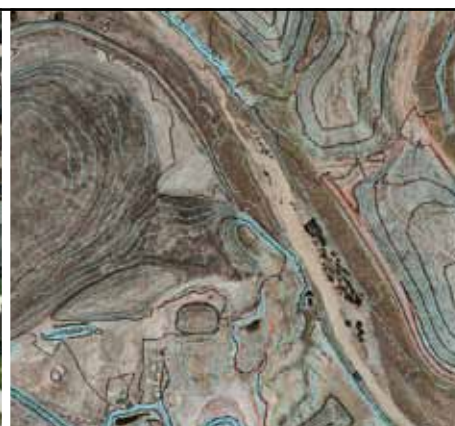
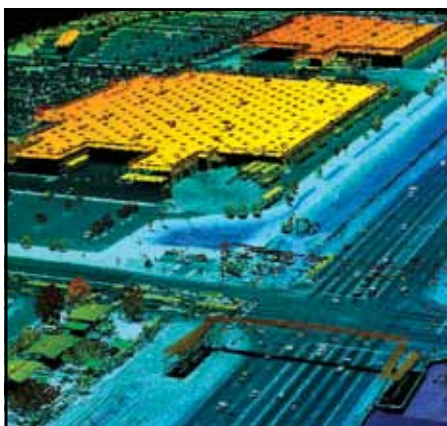
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This New Atomic Clock Is So Exact, It Could Be Used to Detect Dark Matter

Deborah Netburn, Los Angeles Times

Scientists have invented a new clock that keeps time more precisely than any that have come before. The clock is so accurate that it will not gain or lose more than one second in 14 billion years - roughly the age of the cosmos. Its ticking rate is so stable that it varies by only 0.0000 0000 0000 0000 32 percent over the course of a single day.

That level of exactitude is not really necessary for those of us who rely on clocks to get us a doctor's appointment on time, or to know when to meet up with friends.

But keeping time is just the beginning. The new clock is so exact that it could be used to detect dark matter, measure the gravitational waves that ripple across the universe, and determine the exact shape of the Earth's gravitational field with unprecedented precision.

Indeed, these hyper-accurate clocks can help scientists better probe the mysteries of the cosmos, experts said.

"It turns out that if you have all these digits of precision for making a measurement, it can give you a microscope onto our very universe," said physicist Andrew Ludlow of the National Institute of Standards and Technology [NIST, formerly

the National Bureau of Standards] in Boulder, Colorado. Ludlow led the work that produced the new clock, which was described this week in the journal Nature.

Since the 1960s, time has been measured by so-called atomic clocks that use the natural oscillations of a cesium atom as a pendulum. Think of it as a watch with a hand that ticks just over 9 billion times per second.

The optical lattice clock Ludlow and his colleagues developed measures the much faster oscillations of a ytterbium atom. Its atomic pendulum swings about 10,000 times faster, at a speed of 500 trillion times per second.

"Cesium is a beautiful atomic system, but we have reached the basic limits of how good it can be," Ludlow said. "Ytterbium can break down time into much finer intervals, enhancing the precision with which you can measure it."

Optical lattice clocks have been around for only 15 years, and they are still in the development stage, Ludlow said. Scientists continue to tinker with them, gradually increasing their accuracy with each new adjustment.

Most of the improvements in the latest iteration are due to a new heat shield that Ludlow's group developed a few years ago. It protects the ytterbium atoms from the effects of heat and electric fields, which can interfere with their natural oscillations.



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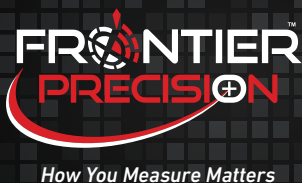
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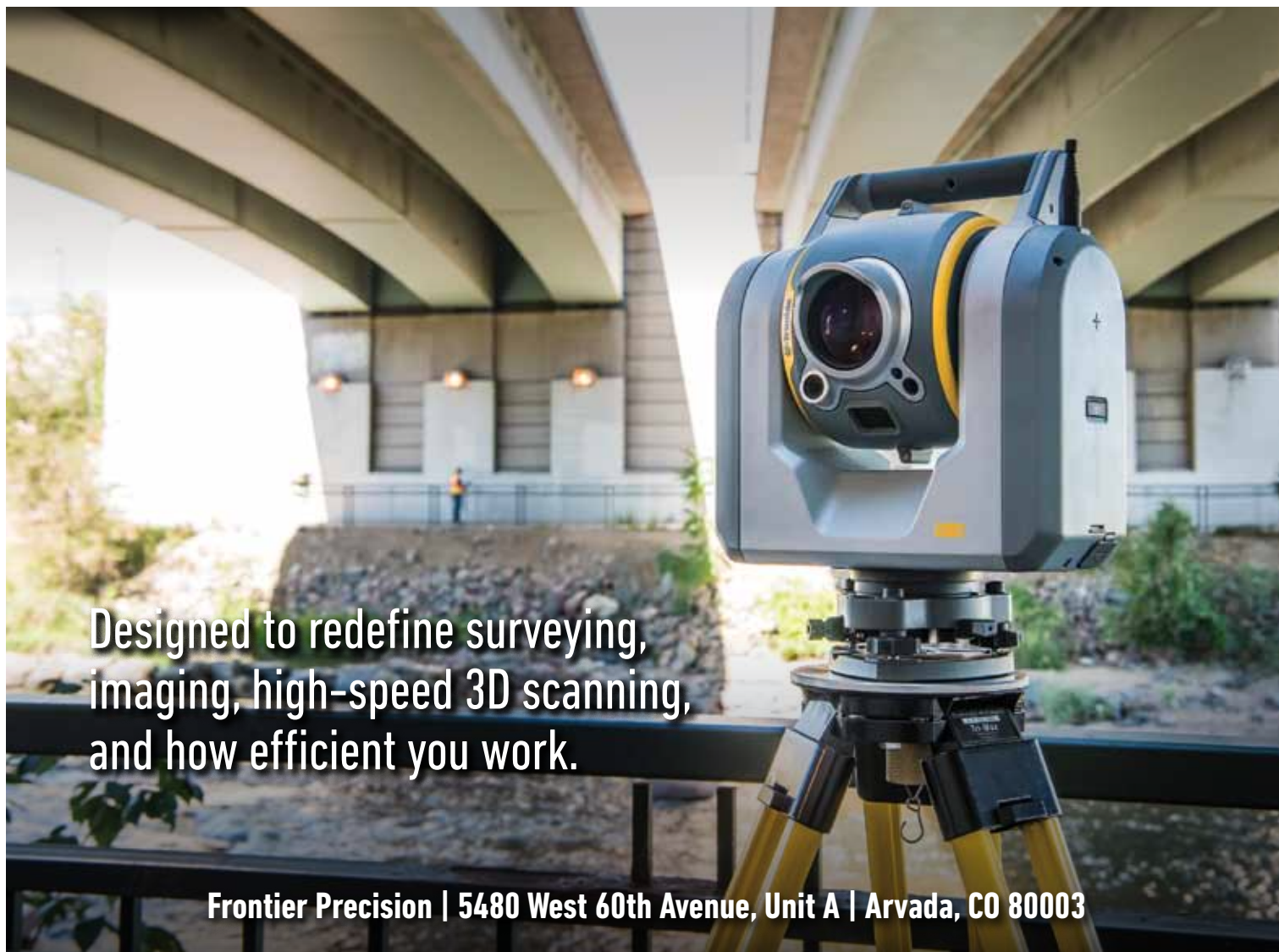
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