

THE NEVADA TRAVERSE

Journal of the Professional Land Surveyors of Nevada

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Living Legends Edition

JOHN "STEVE" PARRISH, PLS

A person is silhouetted against a bright, hazy sunset sky, standing on a rocky outcrop and using a surveying instrument. The scene is framed by dark, leafy tree branches in the foreground. The overall mood is adventurous and professional.

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A close-up image of the Trimble R12 GNSS receiver, showing its white top section and black body with a yellow stripe.

R12

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THE NEVADA TRAVERSE

This publication is issued quarterly by the Nevada Association of Land Surveyors (NALS) and is published as a service to the Land Surveying profession of the state of Nevada. *The Nevada Traverse* is an open forum for all Surveyors, with an editorial policy predicated on the objective of NALS and Bylaws, Article II, which reads:

'The purpose of the association shall be to promote the common good and welfare of its members in their activities in the profession of Land Surveying; to promote the common good and welfare of the public in terms of professional land surveying activities; to promote and maintain the highest possible standards of professional ethics and practice; to promote public awareness and trust in Professional Land Surveyors and their work.

This organization, in its activities and in its membership, shall be non-partisan, non-sectarian, and non-discriminatory."

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The Editor's Corner

by Trent J. Keenan, PLS



Over the last few years there has been a lot of talk about creating a tribute series to recognize those individuals that have given so much to our profession and to NALS. So, who better than the **GREAT** Mr. Steve Parrish to start off this series! Why dedicate a full Nevada Traverse to one person you ask? At the annual conference we present the Surveyor of the Year Award, the Meritorious Service Award, and occasionally the Von Schmidt Award (Steve has been awarded all three!) but sometimes there is someone bigger than all the awards we can bestow upon them, and Mr. Parrish fits that description! Steve has spent countless hours giving back to the profession. His support of NALS and willingness to speak at conferences and seminars has benefited every Surveyor who has had the opportunity to attend one of his presentations. Steve is always willing to support our profession and all of the young surveyors and techs will attest, Steve NEVER misses an opportunity to mentor anyone willing to learn! THANK YOU, Steve, for ALL that you have done and will continue to do for our profession!!!

"The mediocre leader tells. The good leader explains. The superior leader demonstrates. The great leader inspires."

—Gary Patton

Now let's talk about this edition of the Nevada Traverse.

We cannot have a Tribute Edition in honor of Mr. Parrish without some BLM content. With that in mind, we have included a great article by Michael Kidd, PLS discussing our love for Closing Corners. In the NRS/NAC Rule of the Month column, we look at the removal of the "brick and mortar" requirements and how they might help some rural areas of the state. These changes were proposed by the Nevada Board of Registration for Professional Engineers and Land Surveyors (NVBPELS) and codified by the Legislature in 2019.

I am excited to announce that the Nevada Traverse was awarded the NSPS 2019 Journalism award for Best Magazine (Editor Carl C.deBaca) and Best Editorial (Author Shane Trotter)! Carl and Shane have teamed up again to provide the Geographic Coordinate Data Base (GCDB) article in this issue of the Nevada Traverse. I send a hearty congratulations to both Carl and Shane and pledge to do my best as Editor to continue to publish a high-quality magazine that provides timely information for NALS members.

I hope you enjoy this edition of the Nevada Traverse!

"Your Life Only Gets Better When You Get Better."

—Brian Tracy



About the Cover...



A composite image of different photos taken throughout Mr. Parrish's career.
Photo credit to Jeremy Long (Full Metal Worldwide)

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NALS Launches Job Board

Visit the NALS Website at: NvLandSurveyors.org

The screenshot shows the NALS Job Board website. The header features the NALS logo and the Nevada Association of Land Surveyors seal. Below the header is a search bar and navigation links. The main content area displays a list of job postings with columns for topics, replies, views, and last post.

TOPICS	REPLIES	VIEWS	LAST POST
Western NV College - Instructor Needed by nalsboardadmin » Thu May 17, 2018 9:19 pm	0	1	by nalsboardadmin » Thu May 17, 2018 9:19 pm
Senior CAD Technician by sgrimmitt » Thu May 17, 2018 3:36 pm	0	1	by sgrimmitt » Thu May 17, 2018 3:36 pm
Welcome to the NALS Job Board by nalsboardadmin » Wed May 16, 2018 11:57 pm	0	8	by nalsboardadmin » Wed May 16, 2018 11:57 pm
Welcome to phpBB3 by nalsboardadmin » Sun Apr 15, 2018 12:10 am	0	3	by nalsboardadmin » Sun Apr 15, 2018 12:10 am

NALS has launched a new job board to help employers fill vacancies and members search for new opportunities. The job board is a separate system from our members' portal, to post you will need to register and follow the onscreen prompts. Registration is free. You do not have to register to view postings.



The President's Message

by Greg Phillips, PLS

Happy fall fellow Surveyors! To say what a year it has been is quite the understatement. A global pandemic, wildfires, murder hornets, riots, protests, and as I am writing this, we are only 2/3 of the way through 2020. With all that is happening locally and globally I can still say that I believe we are very fortunate to be where we are in life. The economy in Nevada has remained strong. The housing market in our area is above pre-recession numbers and that drives most of the infrastructure work that keeps our industry hopping. With the massive cuts that are coming to public funding, I hope that we can remain positive through the winter and 2021.

With some adjustments to our normal routines, NALS has stayed busy. We have transitioned our Board of Directors meetings to a virtual platform so that we can continue to conduct business. Our last face-to-face meeting was in January, pre-pandemic. I do greatly look forward to getting back together in person. Some of the best ideas seem to come from a discussion during a lunch break or over a beer at the airport on the way home.

The Conference turned out to be a huge success. My hat is off to the Conference Committee that was able to coordinate going virtual with little notice. I have to admit, I was somewhat skeptical on the idea of a virtual Conference. I think that we all agree that the personal aspect of seeing old friends and meeting new ones tops the list of benefits of our Annual Conference. That being said, the APLS-CLSA-NALS Virtual Conference had many great workshops/sessions and the virtual platform had its own set of benefits. I think it was Crissy that I heard the term "Zoom Mullet" - business in the front and party in the back. Going virtual meant I did not have to put on long pants, a belt, or shoes once. There is a lot of appeal to be able to sit in a comfortable chair to watch some of these great presentations. I think it truly enhanced the ability to learn the presented material. That being said, I cannot wait to see you at the bar in Reno 2021!

I am happy that NALS is honoring the leaders in our profession with special tribute editions of the Nevada Traverse. I am excited that this issue is dedicated to my dear friend, Steve Parrish. I have known Steve for nearly 20 years. I first heard him speak at a conference sometime in the early 2000's and I remember all the cool props he brought with him. Later in 2002-2003, he was an instructor at the Pacific Land Seminars courses that I took in preparation for my California PLS exam.

Funny story that my friend, Chip Brejc, and I ran in to Steve on our way home from taking this exam in 2003 at the In-N-Out in Placerville. After spending several years preparing and two grueling days in Sacramento at the CalExpo taking the exam, we were fried and our heads had turned to mush. Discussing all that went wrong and what we surely missed on the drive back over the hill, we ran in to Steve having lunch with his wife Gloria. Listening to his calming words of wisdom and reassuring supportive voice started to put my mind at ease. By the end of the meal, I had calmed myself and was starting to make peace with the fact that there is always next year to try the exam again. A short 5 months later, both Chip and I received the long anticipated letter from the California Board stating that we had passed! As my career and life has advanced, I have been fortunate to have Steve be a part of it. To this day, I am so lucky to correspond with Steve weekly on projects and life in general. He is truly an asset to our profession and wonderful human being.

I am hopeful and looking forward to the future. 2020 has thrown some challenges at us for the record books. I am looking forward to human interaction in the future that will include being together in person as well as more connected through some of the technology that has rapidly evolved out of this pandemic.



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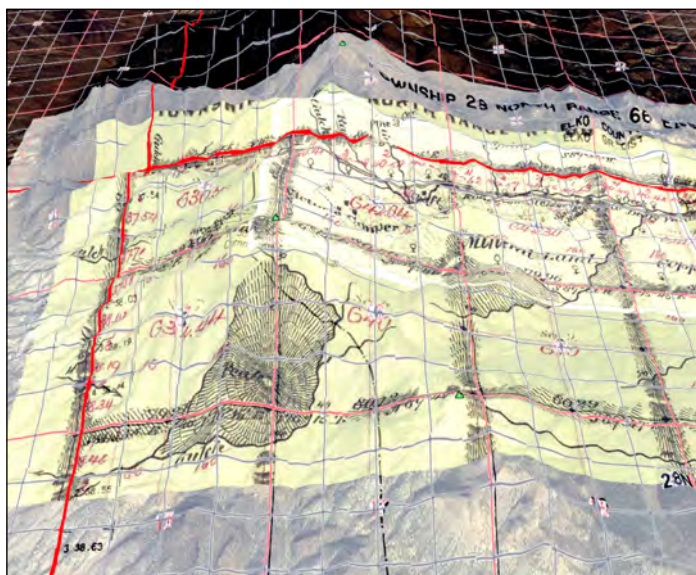
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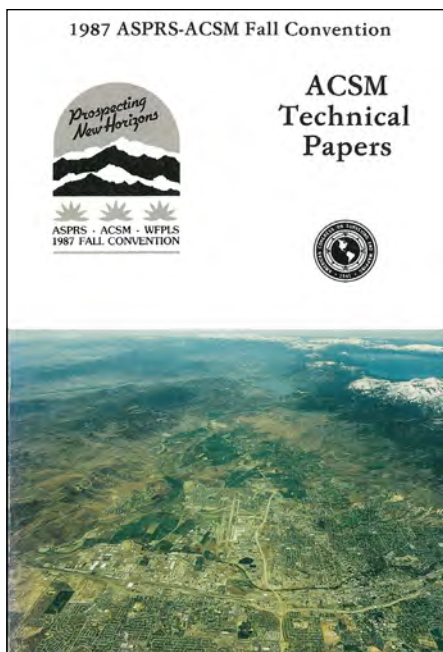
The BLM and Coordinate Data From GCDB to GIS

By Carl C.de Baca, PLS & Shane Trotter, PLS



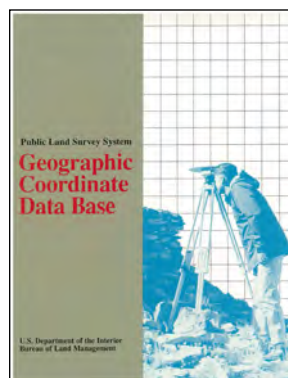
Introduction

My first exposure to the BLM's Geographic Coordinate Data Base or GCDB, was at the WFPLS-ASPRS-ACSM conference in Reno in October, 1987. I still have the book of technical papers that every conference attendee received and I have referred back to that book and many of the papers therein, several times since I got it. There are asterisks on the Title Index sheets by all the classes I attended and in the pages of a few of the papers faded highlighter can still be seen, as well as some incomprehensible notes scrawled in the margins.

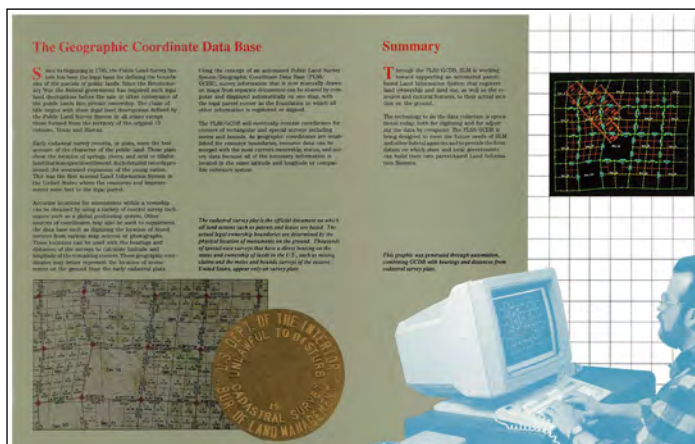


One of the papers was entitled "The Use and Limitations of Coordinates from the BLM Land Information System". This paper was presented by a fellow named Daniel T. Mates from the Washington staff of BLM's Cadastral Survey division. That presentation was my first exposure to what became the BLM's Geographic Coordinate Data Base or GCDB and in fact, Mates uses the term GCDB a couple times in the paper.

This idea stayed with me for a couple of years at least, but it was after all the late Eighties and just a few years too early to actually get anything like digital data from the BLM. Anyhow I moved to Sacramento in 1990 and kind of forgot about the whole thing. That is until February 1995, when I attended a Saturday Field Trip event at the CA BLM offices in Sacramento organized by the local chapter of CLSA. The main topic of that tour through the BLM offices was the GCDB and the status thereof. I took copious notes throughout the morning, of what at that time was still a 'work in progress'.



The data was mostly being input by contractors working in a trailer in the parking lot and when crunched, most likely by a state of the art, ultra-fast Intel 386 processor on God-knows-what operating system. Lastly it was pushed through a couple iterations of merge and adjust before being stored on something like a massive 1 gigabyte hard drive. It was a huge undertaking, and by 1995 the eastern half of California, including the Sierras and southern deserts was already completed. The rest of the state was prioritized as follows: 1) all Federal lands, i.e. BLM, National Forest, National Parks, Military reservations, etc; 2) northern forests; 3) private land in the Central Valley, (depending on funding).



On my return to Nevada in 2005 I had many occasions to call on the GCDB data, which by then was complete and readily available

from the NV BLM website. I was usually interested in one particular piece of the meta data, and that was the error ellipses for whichever corner I would be searching for. While not the most user-friendly of interfaces, or even of individual township files, once grasped, this information was valuable in developing proposal costs and search strategies. After 2016 when I went to work in Reno, I called on GCDB data once or twice more, but confess that since 2017 I have not gone looking for coordinates or error ellipses. So, imagine my surprise when I discovered in July of 2020 that the BLM had discontinued the GCDB program in favor of a new GIS-flavored super interface for geospatial data accessed through the BLM "Navigator". How delightful! That is, if you want a data set for the whole state. Less delightful if you just want one township. More is not always better, but it is nice to finally have a single source to go to for PLSS data regardless of what state, city or county I am in. If you are a private surveyor, you have probably dealt with the various rules and regulations when recording and sources or methods to obtain survey records which vary from county-to-county and state-to-state.

Just as a side note, the general response from surveyors when they go searching for GCDB data that no longer exists, is perplexity that it has been gone for so long and they didn't know it, and frustration that they have to learn or use a new tool to get the information they need. The fact that you almost certainly must have access to ESRI ArcMap to actually use the data once you download it (more on that in a minute), is really a tough hurdle for most of us to get over. Hopefully the BLM will see fit to develop some additional ways of presenting the data in formats usable by the common surveyor. (More about that at the end of this article.)

So, before we talk about this 'new' (to me) data portal and how to deal with it and get the most out of it, let's talk about how the GCDB came together in the first place, and what made the data so handy to use.

Geographic Coordinate Data Base *

If you are already conversant with GCDB data, you may want to skip this section – it is intended only to give some background on how the data was originally collected and assembled.

The BLM began collection of the geographic coordinate information in 1989. This effort was undertaken to meet the need for a common system of reference regarding resource data, based on geographic coordinates. On a state-by-state basis, The BLM, using contractors, began compiling comprehensive flat files of various records such as official survey records, cadastral survey plat/field notes, local survey records, mineral surveys, and geodetic control. In some places, reliable agency records and County records were included; examples in California of such trusted agencies included LADWD and CalTrans.

Available funding, which was never a sure thing during the years of data compilation, was spent to better manage and upgrade these GCDB flat files into a user-friendly database called the CADNSDI. BLM then began to invest in creating a software to present all this information in such a way that it was easy to use and interpret. This internally-developed program, called Geographic Measurement Management (GMM), would provide detailed land use information, tie it to geographic coordinates, and allow for continuous updates to record information.

The points in GMM are based on a six-digit, numerically logical

point identification code for PLSS corners. Each point contains information as to how the corner was computed in the software and where the information came from. This usually contains datum information, measurement system used, point ID, error and record information, and each file is separated to protect the data. Each survey was computed individually in GMM, by input of analyzed bearings and distances, and then GMM applied a least squares adjustment to estimate the error of the survey. In some cases, corners overlap each other; the weighted analysis used both corners in its adjustment and saved separate record information files. The least squares adjustment created a line of best fit and automatically adjusted adjacent townships to new information.

As projects were completed in GMM, they were exported into the CADNSDI metadata file. Over the years most of the adjustments have been relatively small, but some regional adjustments dramatically changed information in the GCDB. Therefore, it is essential that a user should use the most up-to-date CADNSDI file available on the BLM website.

The GCDB proved to be an immensely helpful to the public and surveyors. It was easy to obtain fairly, (depending on location), accurate coordinates for corners, as long as the user kept in mind that when utilizing GCDB information, it is merely record data and not a field survey. Data from the GCDB does not represent the boundary lines on the ground, it only provides information as to interpret them.

For a few years, this data was available from the BLM website in your state as .lx files which were essentially DXF files that could be brought into a typical cad-based survey program. The files contained Section and Township lines, points as described above and a layer containing the reliability or predicted accuracy of each point, expressed as an error ellipse.

** Much of this section was liberally borrowed from a 2014 paper written by Todd Lang of the California BLM and the authors express much gratitude to Mr. Lang for his down-to-earth explanation of the GCDB.*

BLM CadNSDI

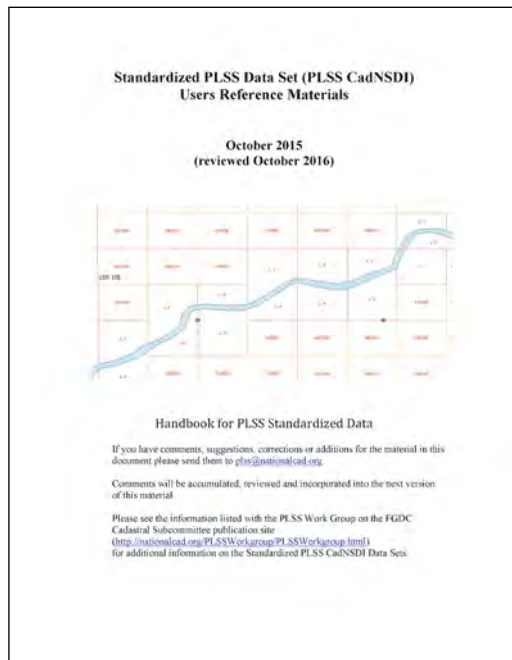
According to the BLM, NSDI is the National Spatial Data Infrastructure, defined as the framework data sets that provide a basis to support decision-making and encourage the broad use of geographic information. The goal of this Infrastructure is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability. The Cadastral components of the NSDI, sometimes called the **CadNSDI**, are the core or essential elements of cadastral information that provide the framework for building and using cadastral (land records) information nationwide. Cadastral publication data has two primary components, land parcel data and cadastral reference data. It is important to recognize that the publication data are not the same as the operation and maintenance or production data. The production data is structured to optimize maintenance processes, is integrated with internal agency operations and contains much more detail than the publication data. The publication data is a subset of the more complete production

CONTINUED ON NEXT PAGE ►

data and is reformatted to meet a national standard so data can be integrated across jurisdictional boundaries and be presented in a consistent and standard form nationally. It is important to note that the PLSS CadNSDI is not intended to be a legally binding source. Any legal decisions will need to refer to the most authoritative record, such as the survey plat and notes. The PLSS CadNSDI features are the best available representation of the Cadastral Records for use in GIS applications.

The layers of data, include: township outlines, section lines, 'first division' surveys, 'second division' surveys, meandered water, special surveys, townsite surveys, and points. To get the most out of this data or even to use this data at all, you should have access to ESRI ArcMap. From ArcMap you can export Autocad-usable files if you wish. Once the data set is loaded into your software, you have much control over how to display it. With a little experimentation, you can have thick lines for townships, thin or colored lines for section lines, other colors for meanders, reservations, ranchos, etch and you can extract section, township and range data, and labels for aliquot divisions and lots, tracts, and townsites. The old error ellipses I spoke so fondly of earlier, not so much. But the meta data contains the accuracy of the points, expressed in x and y error so the information is still there. At this point, rather than make this a long-winded technical treatise on the use of the CadNSDI, I would point you to this document:

<https://nationalcad.org/download/PublicationHandbookOct2016.pdf>



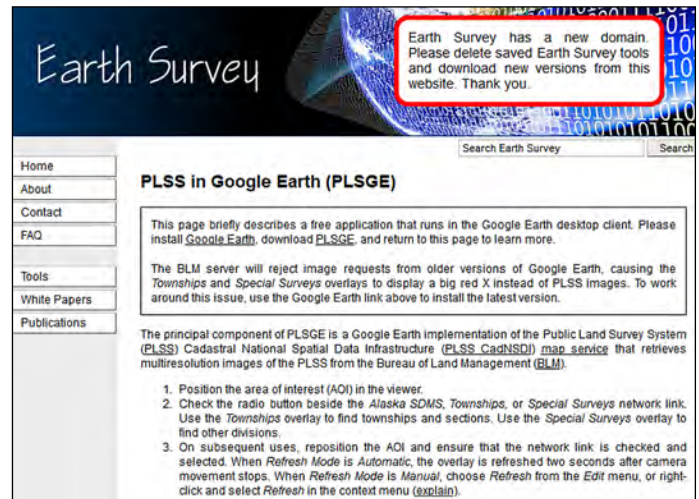
Get yourself a copy of this PDF, download the CadNSDI data for your state (links to CA & NV are at the end of the article), and go to town. But wait... there's more.

CadNSDI and Google Earth

There was a time when, especially in desert environments, the primary backdrop for cadastral searches was the 7-1/2' quad map. Heck, the USGS even did some of your homework for you, by helpfully putting a red cross on corners they had found during their surveys, and using solid lines for sections lines with both termini found and dashed lines where this was not the case. These days Quad maps are pretty much done for, although the

USGS National Map can still be a very valuable resource in much the same way that the quads were. But in this day and age, we love to go to the field having first overlaid our data with aerial imagery, usually that found in Google Earth. Obviously, once you download the data and get it into the proper state plane zone, you can certainly do this, but there may be an easier way.

Much of the CadNSDI data is also available in Google Earth using the Earth Survey PLSGE app, which is a **free** download. This page has a decent explanation of the tool and there is also a legacy white paper on their website that explains it in more detail. <http://www.earthsurvey.us/EarthSurvey.html>



(You can also download the latest iteration of the CadNSDI data set as a KML file from BLM here:

https://gis.blm.gov/arcgis/rest/services/Cadastral/BLM_Natl_PLSS_CadNSDI/MapServer
once downloaded this can be opened in Google Earth)

Closing Thoughts

Some things to keep in mind when working with the Public Land Survey System, especially when using CadNSDI data:

1. Error ellipses are valuable and good for estimates.
2. Google Earth is incredibly valuable
3. As Steve Parrish always preaches, knowing your history, that is, developing a feel for the surveyors from these old GLO surveys, is of paramount importance too. For instance, were they part of the Benson Syndicate? Or better yet, have you retraced that surveyor before? As anyone who has worked in the PLSS in NV or CA can tell you, you start to develop a feel for particular surveyor's methods and more importantly, their shortcomings. Guys like Hatch, Eaton, Smyles, McClellan, Steward, Bridges, Ives, Ingalls, Von Schmidt, Monroe, etc - you bring up a guy's name to another surveyor familiar with PLSS work and they can tell you all about him.

Here's a brief example of that: there was a certain GLO surveyor whose name has slipped my mind, who was known by some of us as tending to put his corners at the tops of cliffs if there was a steep slope that the corner landed on. Sure enough, our BLM crew went out and found a corner a couple hundred feet east of

where it was supposed to be on a steep slope, sitting at the top of the ridge.

Another example: Monroe is known to have done excellent work, but he didn't mark corners well at all. You typically will have trouble finding his original work, but he was definitely there so you really have to look close for his stuff. The same can be said for Hatch and Eaton.

Another surveyor is widely thought to have just sat up on ridges and wrote out his topo calls without surveying between the sections, then later, went down to the flat land and completed his work.

So, while the error ellipses are very important, you should keep in mind that there are a lot of other new and old tools available that can be used as well. Start by dropping all available map data, including top calls from the field notes, into Google Earth, and then look for anything inconsistent or outright weird.

Here's a helpful workflow you can follow to end up with georeferenced image like the one that opens this article:

1. Download the KML mentioned in the Google Earth discussion, open & save it in Google Earth.
2. Go to the appropriate BLM website and download the plat, MTP or whatever data is pertinent to your project.
3. Open the PDF and save it as a .jpg
4. Ctrl + Shift + O or in the top drop-down menus click Add then select image overlay.
5. Scale your "image/plat/data" to the topo, PLSS or whatever data you are comparing it with.

Or you can use ESRI ArcMap to export a cadd file. Once you have taken the data to Autocad, you are sitting on a correctly georeferenced drawing containing township lines, polygons for each section, section and township text, and whatever else you have extracted. You can use Autocad's Geolocation tool to bring in a background of color orthophotography or you can export a KML and take that into Google Earth and make oblique snapshots that reveal the terrain and vegetation challenges at a glance.

As with anything we surveyors do, there ends up being many ways to skin the proverbial cat.

To wrap things up, Lucas Beauchamp Land Surveyor, CadNSDI of the Cadastral Survey Office Section of the BLM, who is stationed in the Nevada State Office, advises us end-users that:

"The GCDB project ended in roughly 2013 (varied by state) and was replaced by the Cadastral National Spatial Data infrastructure (CadNSDI) a Federal Geographic Data Committee (FGDC) structured GIS dataset representing the PLSS. The CadNSDI was created by using the collected GCDB data so it is still based on the survey measurements and adjusted. "

"In our new maintenance environment, we store and interact with the survey data for the whole state so exporting township extracts is fairly complicated. We realized that for our private surveyors we wanted to find a way to provide a file similar to the old .lx file for each township and we spent a fair amount of time developing a series of scripts that automates that process for us

so we can publish an entirely new set of files every quarter when we publish our updated GIS datasets. Once we refine the process and scripts a bit and get our records site update to post them, I would like to offer the scripts over to the other states to modify them for their state's needs."

Let's give a round of applause to Lucas and his fellow BLM data-stewards in the PLSS states who all manage a huge amount of data and still somehow find time to help us surveyors make sense of it.

For Nevada, the data is available in GIS form (shapefiles or file geodatabase) from this site:

<https://www.blm.gov/services/geospatial/GISData/nevada>

For California go here:

<https://www.blm.gov/services/geospatial/GISData/california>
or
https://navigator.blm.gov/data?keyword=plss&fs_publicRegion=California

BLM NEVADA - GIS AND DATA MANAGEMENT

The Bureau of Land Management Nevada data library allows users to access geospatial datasets as either a downloadable ESRI file geodatabase or shapefile. These data sets are updated as needed. Users of the data should refer to the metadata should they have any specific questions. No warranty is made by the BLM for use of the data for purposes not intended by the BLM.

Please note that this list does not represent the entirety of BLM Nevada's geospatial data. More datasets will be made available for external distribution as they pass internal BLM QA/QC benchmarks.

Download individual datasets, listed by category below.

ADMINISTRATIVE BOUNDARIES

BLM District Office

Published: 6/30/2017 | Shapefile | Navigator link

This polygon feature class represents the spatial extent of active BLM Administrative Unit Boundaries for Administrative state of Nevada at the District Office level.

BLM Field Office

Published: 6/30/2017 | Shapefile | Navigator link

This polygon feature class represents the spatial extent of active BLM Administrative Unit Boundaries for Administrative state of Nevada at the Field Office level.

Resource Advisory Council

Published: 6/30/2017 | Shapefile | Navigator link

This is intended to represent Resource Advisory Council (RAC) boundaries within the state of Nevada. Polygons are assigned labels associated with the RAC name.

CADASTRAL SURVEY (PUBLIC LANDS SURVEY SYSTEM)

ENERGY

UNR GIS DATA CLEARINGHOUSE

CONTACT US

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CALIFORNIA GIS AND DATA MANAGEMENT

The Bureau of Land Management California data library allows users to access geospatial data sets as either a downloadable ESRI file geodatabase, or through Web Services. These data sets are updated as needed. Users of the data should refer to the metadata should they have any specific questions. No warranty is made by the BLM for use of the data for purposes not intended by the BLM.

Please note that this list does not represent the entirety of BLM California's geospatial data. More datasets will be made available for external distribution as they pass internal BLM QA/QC benchmarks.

ADMINISTRATIVE BOUNDARIES

This category includes themes having to do with units of administration such as field office boundaries and office locations.

Administrative Units

Data Links: (Geodatabase) (Web Service)

This dataset includes:

- BLM California Administrative Unit Office (Polygons) (Search Result/Metadata)

CADASTRAL

ENERGY

FIRE AND AVIATION

LANDS

NATIONAL CONSERVATION LANDS

PLANNING

RANGE

RECREATION

QUICK LINKS

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Public Land Survey System (PLSS) Closing Corners

Prepared by Michael Kidd, PLS

The Closing Corner may be one of the most incorrectly platted and restored corners, by professional land surveyors, of all the Public Land Survey System corners. Now, the surveyor reading this may jump ahead and think "I know, I know, the Closing Corner may not be on the Township or Range Line." I would ask them to take a quick look in whatever County Recorder's office they are comfortable researching and it will not take long to find a Closing Corner mapped or restored incorrectly.

Typically, PLSS Closing Corners are established at the (intended) intersection of a section line with a senior PLSS survey line. From this intersection a tie is made, (supposedly) along the senior line, to the nearest senior line corner left or right from the Closing Corner. It was not required to run the line in both directions to confirm the Closing Corner was truly on the senior line. It is seldom that an existing Closing Corner is found on a senior line. Thus, the principle that the true intersection of the junior section line, with the senior line, is the legal terminus of the junior section line with the senior line.

As counter intuitive as it may be for a land surveyor to not restore something where it was found, a Closing Corner (CC) should not be restored where it was originally located. Instead, the Closing Corner should be restored on the line that it was intended to be closed upon. That being the senior line, such as a Range Line or a Township Line. The most current guidance on this is the 2009 BLM Manual of Surveying Instructions, Section 7-41 thru Section 7-49, Pages 172-173.

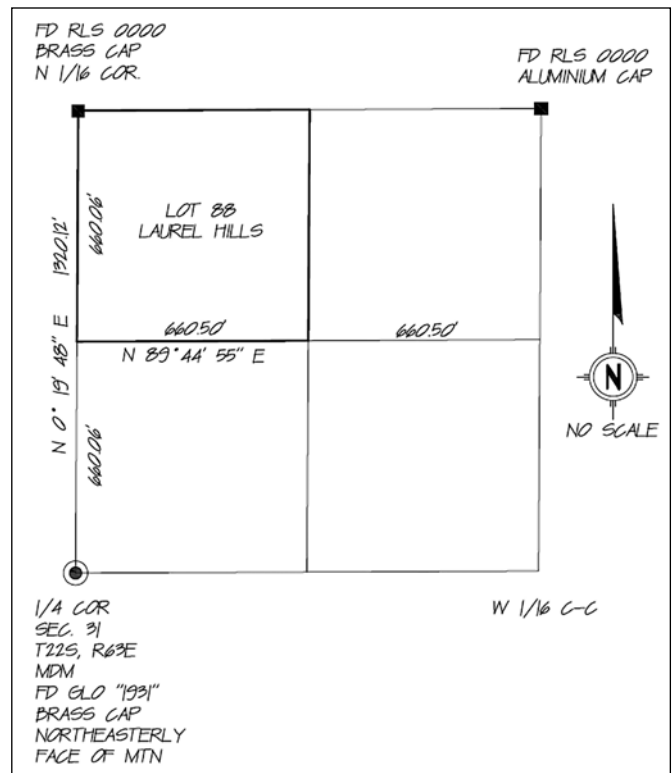
Range Lines and Township Lines, similar to highways, riparian boundaries, or railroad corridors, should generate extra attention. These examples provide opportunities for easy mistakes or assumptions and should be researched back to a source

document to make sure another surveyor, along the way, did not miss something on a previous map.

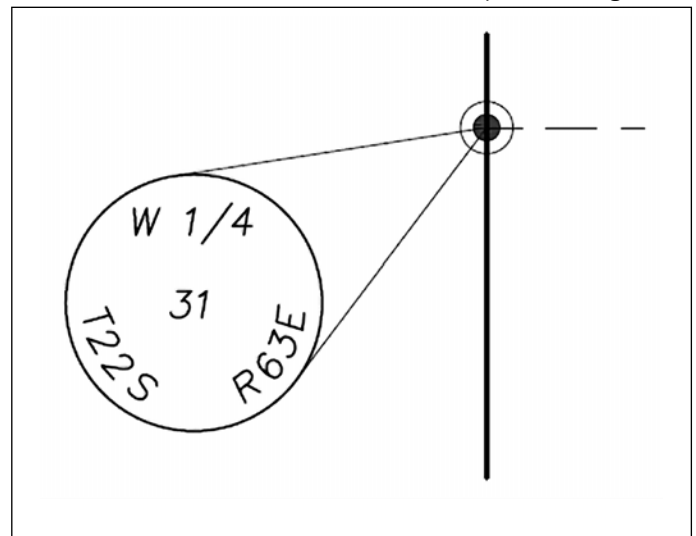
Section 31 will be used as the example. For the purpose of this discussion, the 1931 GLO brass cap, monumented for the W 1/4 of Section 31, is 1.3' east of the Range Line. This brass cap is still in the ground and looking good for being 89 years old.

The two examples below are recreated from recorded maps in Clark County Nevada.

This first example is not correct as the survey analysis from the map shows holding the Closing Corner for the west boundary of the parcel being mapped. This would leave a gap between the Range Line and the platted parcel.

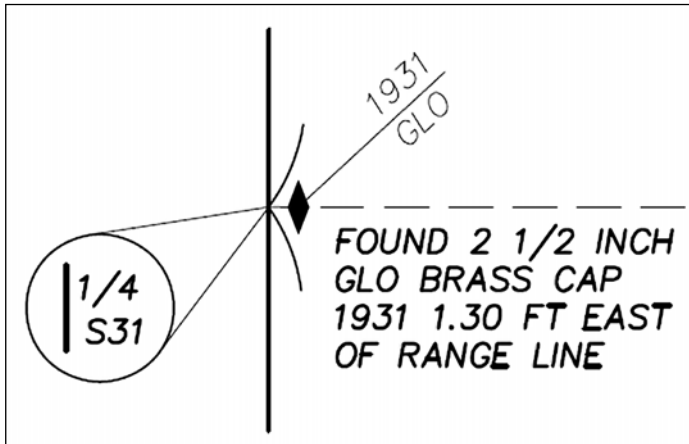


The second example could be stated more clearly to avoid confusion. As stated above, the 1931 GLO cap is a Closing Corner



1.3' east of the Range Line. The location of the West 1/4 is 1.3' west of the GLO cap. This example could be labeled a bit different to help avoid any ambiguity.

The labeling should differentiate with respect to the distance to the found cap and the distance to the 1/4 location on the Range Line and maybe add a detail to be clear.



The process of defining the true Range Line for Section 31, requires retracing the east line of Section 36 to determine the location for the senior line.

If the Closing Corner is still in place, there is no reason to remove and relocate it to the Range Line. Any mapping in the area should properly show the relationship with the monumentation and the Range Line. However, if the CC is lost, the new monument should be set on the Range Line. If the found monument is not stamped with a "CC", it still may be a Closing Corner. The determination for this status would fall to the junior line senior line relationship.

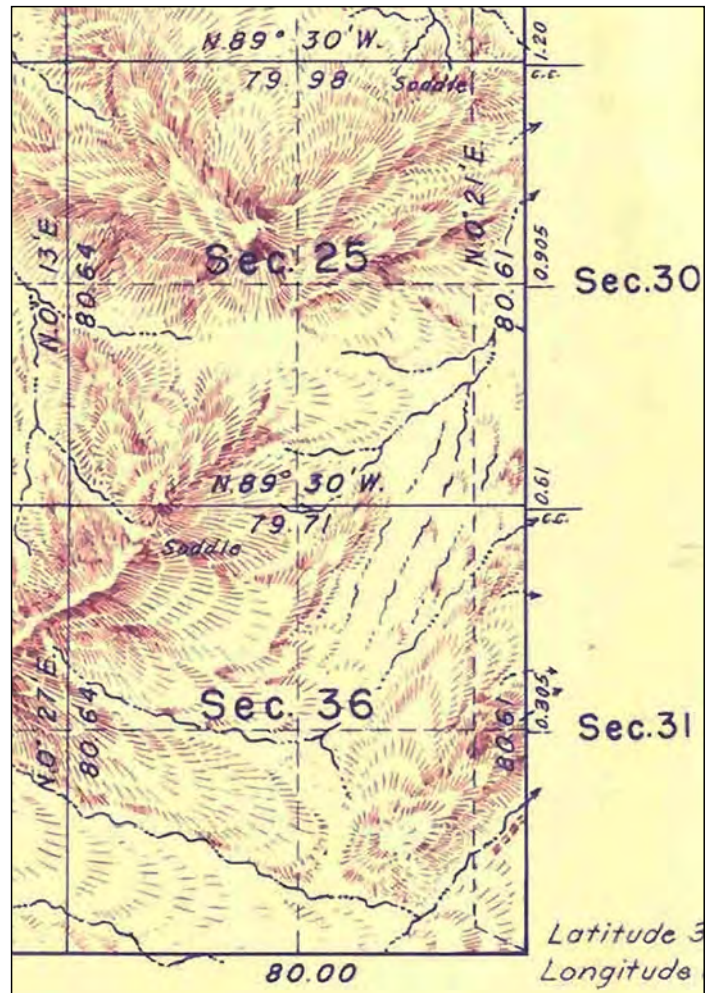
The following discussion, and example, is going to deal with the 1/4 Section Corners on the junior side of a senior line. Most of the time these junior 1/4 Section Corners were not set during the original PLSS survey process. We are going to discuss the W1/4 Section Corner of Section 31, T. 22 S., R. 63 E., M.D.M., Nevada. Please refer to the following timeline and brief description of surveys along the line between T. 22 S., Rs. 62-63 E., M.D.M., Nevada.

1883 - T.S. Magee, Deputy Surveyor, surveyed the entire line with common corners throughout.

1931 - Carl S. Swanholm (Cadastral Engineer), Andrew Nelson (Cadastral Engineer), and Robert C. Yundt (U.S. Surveyor) dependently surveyed the exterior lines of T. 22 S., R. 63 E. and independently resurveyed the interior section lines. This was accomplished between March 25 to June 20, 1931 with a field crew of 13 assistants - chainmen, flagmen, and cornermen. The subject Range line was dependently resurveyed, referring only to the East line of T. 22 S., R. 62 E. and being the senior line. The section Closing Corners, from the east, were surveyed during the independent resurvey of the subdivision of T. 22 S., R. 63 E. and tied to the nearest section corner along the senior line.

After completion of the independent resurvey of said township, the last 2 pages of the field notes describe how the 1/4 Closing Corners, along the west line of said township, were set on the

senior line. The GLO crew set the subject Closing Corners along the bearing of the senior line and at a calculated midpoint for the junior section involved. As customary, no tie was made to the other senior line corner. Portions of the 1933 approved GLO plats are shown for adjoining sections 25-30-31-36 between R. 62-63 E. one difference to note is that "CC" is not added to the markings on the five (5) 1/4 Closing Corners that were set.



Portion of T22S, R62E, M.D.M

2009 - BLM Dependent Resurvey of a portion of the east line of Section 25 and all of Section 36, T. 22 S., R. 62 E., M.D.M., Nevada. Resurveying along the east line of Section 36, and at a point for the W 1/4 Closing Corner for Section 31, the BLM finds the 1931 GLO iron post with brass cap, bears "EAST, 0.019 chs. dist." Only 1.25 feet offline - but, it is offline, and the BLM is treating it as an offline Closing Corner even though it is not marked "CC."

Today, with our more sophisticated equipment (when used properly) and a knowledge of the PLSS procedures, we can measure with more accuracy and are able to place "Closing Corners" on senior lines with a higher degree of confidence. Considering that the bulk of our PLSS surveys were completed before the GPS era, it is likely that very few existing PLSS Closing Corners will be found on the senior lines. The principle behind terminating a closing line "on the senior line," is 1) to protect the bona fide rights of the owner of lands

CONTINUED ON PAGE 24 ►

NALS Education Foundation 2020 Scholarship Winners

The NALS Education Foundation awarded the following scholarship in 2020:

Great Basin Scholarship (\$2500) – Hadley Fowler

Rita Lumos Scholarship (\$2500) – Heather Keenan



I am honored to be one of the recipients of the Rita Lumos Scholarship. Thanks to your generous support. I was thrilled and appreciative to learn that I was selected as the recipient of your scholarship.

Being the daughter of Trent Keenan, I have always been around Land surveying, but I had never really learned about what Land Surveying was until the day I went out to the field to help my dad out on a job, and I was instantly hooked. I started looking into colleges during my freshman year of high school and got attached to the Oregon Institute of Technology. I started my freshman year of college in Klamath Falls, Oregon, at OIT. I quickly decided to switch my college from the Oregon Institute of Technology to Great Basin College. I continue to work full time while attending college. I am a part of the Nevada Association of Land Surveyors Southern Nevada Chapter as well as the California Land Surveying Association as a student member.

Sincerely, Heather Keenan

Bill Cuddy Scholarship (\$2500) – Sarah Walker

NALS EF Stipend (\$1500) - Alaina Russky



Hello, this is Alaina Russky and I just won a scholarship from the NALS Education Foundation! I am very excited for this opportunity. It is a great relief knowing that the financial juggle has been eased. I'm excited to finish this semester knowing that the next is within reach. Thank you again for this honor.

Sincerely, Alaina Russky

NALS EF Stipend (\$1500) - Jasen Solt

NALS EF Stipend (\$1500) - Brett Clarke



Dear Nevada Association of Land Surveyors,
Thank you so much for the scholarship. I am ecstatic that you would select me among all the applicants to receive this award. This inspires me to continue with full focus in the Surveying program at

Great Basin College. The rewards from this program have improved so many aspects of my life. The best part about receiving this scholarship and being in this program is how proud my family is of me. It gives me a huge amount of confidence when I get rewarded for all the hard work I have done in my life with these scholarships. I am currently working for NV Energy in Reno as a full-time surveyor. I plan to complete the Great Basin College program in 2021 and hopefully get my license the same year.

Sincerely, Brett Clarke

Unfortunately, the shift to a virtual platform prohibited us from holding the scholarship auction, our main source of funding. Special thank you to those that made cash donations to help offset this lost fundraising opportunities. If you are interested in donating, please send checks to:

NALS Education Foundation
526 South E Street
Santa Rosa, CA 95404

The 2021 scholarship application will be released in October and the 2021 recipients will receive their awards at the annual Conference in March.



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2020 APLS-CLSA-NALS Tri-State Conference Wrap-Up

*Prepared by Trent J. Keenan, PLS and
Greg Phillips, PLS*



2020 is a year of firsts and our annual conference certainly followed suit.

The Tri-State Conference was sponsored by APLS, CLSA, and NALS and drew over 400 attendees from all over the country. Originally planned to be held in Las Vegas in March, the pandemic forced the conference to be (optimistically) rescheduled to August. By the end of July, it was clear that an in-person event would not be allowed. Understanding the need for continuing education and to provide an opportunity for the profession to engage with one another, the Conference Committee made the decision to push forward with a virtual event. In four short weeks, the conference was shifted to virtual experience providing over 30 hours of live education, over 90 hours of recorded education, and a virtual exhibit hall to show case our vendors. If you missed it, you should be disappointed in yourself for not taking a chance on something new. The event ran so smooth and was well-received by the attendees. It was awesome to have three state associations work together so tirelessly to make this event happen. Hats off to the Conference Committee!

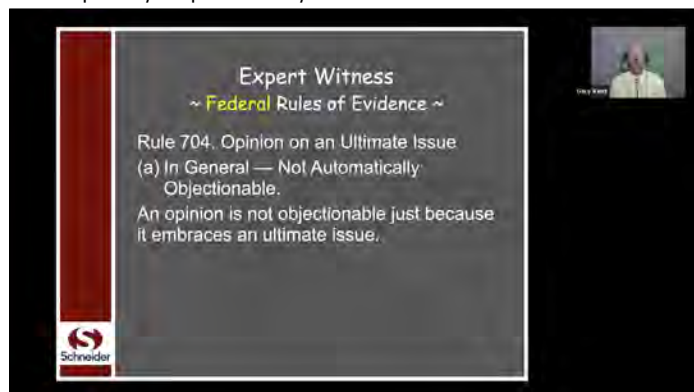
Day One (Saturday, August 22nd):

Members accustomed to traveling to the city of choice to meet face-to-face with peers, colleagues, and mentors, instead, woke up in their own beds, threw on a clean shirt (maybe), left the sweatpants on, and logged in for Opening Ceremonies and Keynote Address at 8:00 AM. Chair Mike Fondren (Arizona),

President Keith Spencer (California), and NALS own President Greg Phillips (Nevada), welcomed the 400+ attendees and provided opening remarks. In line with this year's conference theme, "Focus on the Future," Gavin Schrock provided the Keynote Address and addressed the future of land surveying. Gavin touched on some great topics that are so relevant today, such as diversity, getting the next generation involved, data collection, and data management. It was the perfect kick-off to the rest of our program.

Saturday included a BLM/CFedS Workshop, a Civil 3D Workshop, and various LS Review sessions.

In addition to our program sessions, virtual breaks that included speakers or roundtable topics were held throughout the conference. Elaine & Elly Ball, creators of Get Kids into Survey joined us all the way from England provided an energetic start to our virtual break schedule. They presented background on how and why they created the business. At Get Kids into Survey they recognize that, in order to secure the future of our industry, we need to unite the geospatial community to inspire a new generation of surveyors. It was a lively discussion of outreach and hopefully inspired everyone to become ambassadors for our



profession.

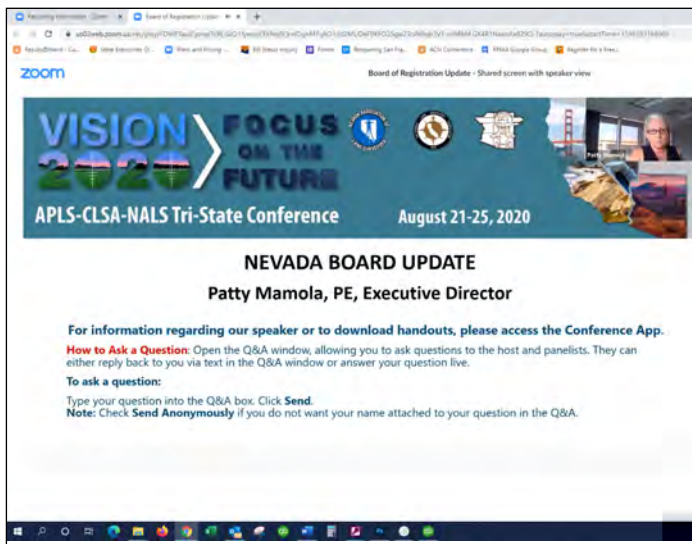
The virtual luncheon was sponsored by Diamondback Land Surveying and featured guest speaker Cameron Hughes. Cameron is a crowd igniter and public speaker that started his career dancing like nobody was watching at sporting events in stadiums packed with people. It was truly impressive to see a speaker that was able to maintain the energy and keep on his message while talking to a webcam. Cameron even sported the Las Vegas Knights jersey and T-Shirt making us feel like we were seated in our virtual host city. He had a great message of "showing up" in life to create your own opportunities.

Our afternoon break featured a presentation by our sponsor Cooper Aerial. Zachary Radel shared information about some of Cooper Aerial's exciting projects including how they are utilizing drone technology every day and how LiDAR is changing the way we collect data.

Each night the conference closed with a virtual happy hour session. Each exhibitor was given the opportunity to provide a presentation on a topic of their choice and again with the ability to screen share, you were able to view any video our power point presentation they prepared. As an attendee, it was great to have learning opportunities even during our breaks and happy hours.

Day Two (Sunday, August 23rd):

Day two did not disappoint! Featured speaker John Stahl provided a great discussion on the "Role of the First Surveyor," and we were asked a few good questions including: *When there*



is no "original" surveyor, where does the "first" surveyor fit into the picture?; *Who's Monuments Control and Why?*; and *Uncalled-for Monuments – Do We Accept or Reject?* As you can imagine, you could spend a full 8-hour day on just one of these questions, but John did a great job giving the best short answers available.

Other presentations focused on our agencies. The California County Surveyor panel presented topics such as the map review process (County Surveyor's Responsibility), staffing and cost recovery and monument preservation. This was followed by a Nevada agency update featuring County and City Surveyors from both the northern and southern parts of our state. They addressed changes needed to state statute, moving to electronic stamping and submittals, and what agencies can do to better assist the land surveying community. All talked about their successes and their challenges especially those that have been created by the pandemic.

Dynamic presentations from Logan Campbell detailed best practices with using drones including Why Flight Operations Matter and Data Processing for Surveyors. Both these sessions were helpful and informative.

Our virtual breaks were sponsored by RLF Consulting and Keith Nofield Professional Land Surveying. Break topics included professional practice committees and advanced education. We also talked about Alliance for Responsible Professional Licensing (ResponsibleLicensing.org), an organization that helping to educate policymakers and the public on the importance of professional licensing. If you haven't heard about this organization yet, I hope you will do yourself a favor and do some research after reading this column.

Day Three (Monday, August 24th):

How do you match the quality of day one and two? Cue Gary Kent! Day three featured a full day of Gary Kent discussing topics such as Ethics and Standards and Railroad Right of Ways. Gary's presentation on Leadership was particularly inspiring.

Other sessions included an update from the Arizona, California, and Nevada Boards of Registration; how to protect yourself from cyber-crime (scary stuff! If you missed this session, I recommend you watch the recording), gathering evidence and reporting results for boundary surveys, as well as various LS Review sessions.

Virtual breaks included a roundtable on hot topics, workforce development, and a presentation on photogrammetry by sponsor Lumos & Associates.

Day Four (Tuesday, August 25th):

Our conference concluded with Surveyor in Court presented by Gary Kent as well as high-tech presentations on augmented reality and mobile LiDAR.

While in-person interaction was missed, the virtual platform provided some great opportunities. One of the benefits was the ability to jump from room to room. The online screen share meant there wasn't a bad seat in the house! No pillars in a conference room blocking your view or the need to squint to see the screen from the back of the room. Moderators helped to keep the sessions running smoothly and assisted the speakers by monitoring the Q&A panels. The ability to ask questions throughout the sessions and interact with speakers and other attendees through the chat panel really made it feel like a classroom environment. The success of the conference was possible due to the work of many people. Special thanks to our speakers that were able to convert quickly from a live presentation to a virtual webinar platform. We would also like to thank our exhibitors and sponsors. Their ongoing support of APLS, CLSA, and NALS through this unprecedented time is much appreciated. Finally, the 2020 Conference Committee that pulled it all together including:

Mike Fondren, APLS Chair
Doug Schneider, APLS Conference Chair
Nancy Almanzan, NALS Conference Chair
Greg Phillips, NALS President
Rob McMillan, CLSA Program Committee
Keith Spencer, CLSA President
Bill Hofferber, CLSA Conference Chair
Kim Oreno, CLSA Executive Director
Crissy Willson, Conference Manager, APLS & NALS Executive Director

Overall, I think it was a great experience for our attendees but we hope to see you live, in-person, next year, March 27-30, 2021 at the Silver Legacy in Reno, Nevada! Mark Your Calendar!



Tribute to Steve Parrish



Steve Parrish receiving the Von Schmidt Award. Presented by Aaron Smith, CLSA President 2010 and Matt Gingrich, NALS President 2010. The Von Schmidt Award is presented on behalf of CLSA and NALS to someone who has gone above and beyond to serve both associations and the profession.

When you think of the word professional, everyone should think of Mr. John "Steve" Parrish. Someone who has given his entire professional career to promote our great profession. Steve began surveying with the U.S. Forest Service (USFS) in 1963, acquired his Utah PLS in 1973 and worked with the USFS through 1984. He transferred to the Bureau of Land Management (BLM) in 1985 and was selected as BLM Nevada Cadastral Chief in 1989. Steve left the government in 1995 to survey in the private sector. Steve is licensed in 10 states, a Nevada water rights surveyor, acquired his CFedS certificate in 2007 and is a Great Basin College graduate (2009) with a BAS in Technology degree. Steve has presented workshops in 27 States and Canada, and used to teach SUR360 (2009 BLM Manual) for Great Basin College (Elko, NV). Steve now shares his 53+ years of land surveying experience through workshops, consulting, and expert witness testimony. Steve is currently the Certified Federal Surveyor (CFedS) Panel Chairperson/Training Coordinator and County Surveyor for Alpine and Mono Counties, CA. If and when Steve decides to retire, we are going to have a HUGE hole to fill in our profession! THANK YOU Steve from all of us!

From Aaron Smith ...

Steve, my friend and colleague.... Thank You for the relentless effort you have endured to make our profession a better place. Your burning desire to help where help is needed, to provide input and feedback when asked and your willingness to always listen and provide great survey suggestions to anyone who asked, is, by any definition, above and beyond. I personally thank you for the many times you chatted about projects with me. You are not only a gentle soul but you are a GIANT to us! God Bless.....

From Carl CdeBaca ...

Everybody knows Steve Parrish. He is eminently knowable. When you shake his hand you get an accurate measure of the man, of that I am completely confident. Will Rogers said "I never met a man I didn't like." With Steve it's the other side of that statement – no one ever met Steve Parrish and came away not liking him. We throw around terms like "Last of a dying breed" or "Last of his generation" all too often these days, cheapening the terms till they mean almost nothing, but in Steve's case they are both true; totally, thoroughly, irrevocably, undeniably true.

This man's moral compass is exact, precise, and calibrated to the thousandth of a second. Throughout his professional career, when he has taken on a task, his approach is to see it through to completion, do it right and cost be damned. Just as important though, is his approach to discussing any boundary conflict he may have exposed, with the surveyor on the other side. He never offends, he never crows, even when sitting on top of irrefutable evidence supporting his position. He never makes it about winning, only about getting the facts straight and reaching the correct conclusion.

While that approach seems only right and logical, you have to ask yourself, do any of us consistently approach things that way? Who doesn't like to be right and who doesn't engage in a little *schadenfreude*, that is to say taking pleasure in the misfortune of others, now and then? Lord knows I have been guilty of that now and again. Not Steve, though.

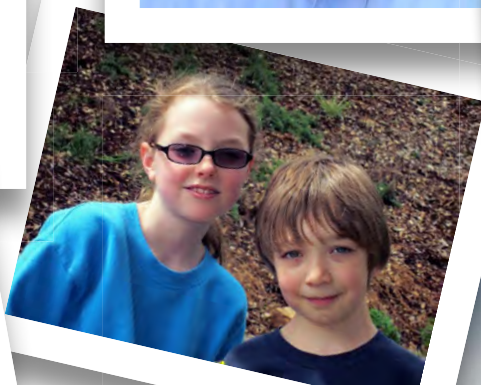
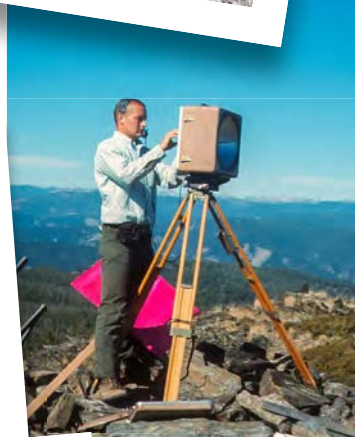
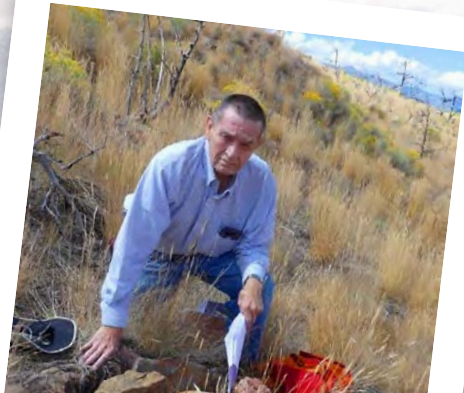
Another outstanding characteristic of Mr. Parrish is his boundless enthusiasm for mentoring the young surveyor. I think it's probably more than just simple enthusiasm though. It must be a duty he feels. A desire to give back to a profession that has given him so much. Steve is as natural a teacher as there ever was, with young students, fledgling surveyors, his peers, anyone within earshot, really. Unfailing he preaches finding the desire to seek the right answer over the expedient one.

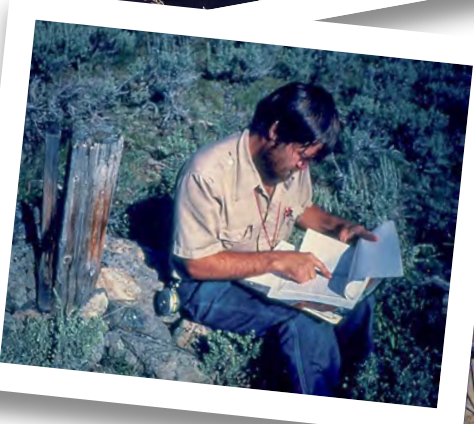
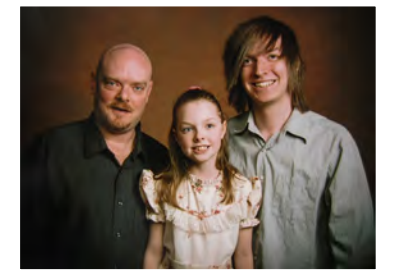
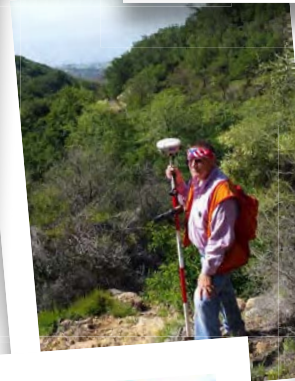
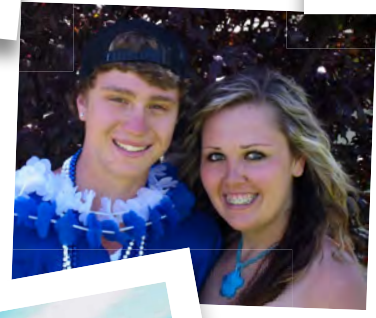
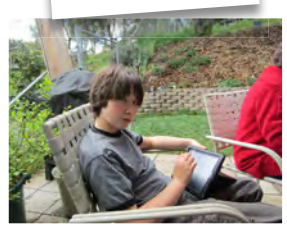
I have been truly blessed in knowing Steve, in having the opportunity to learn from him and even to debate him on a couple of occasions and I have to say that in my own career of 33 years as a professional, I've only known four or five others with his unwavering commitment to clarity and truth. I'm pretty sure we all have such a list of influential and honored elders that we think about from time to time. My list is pretty short. You might recognize one or two. Walt Robillard, Tom Foote, Malcolm Shaw, Phil Mott, Bud Uzes, and Steve Parrish. That's five surveyors and one surveyor-attorney. In my five years as editor of the Nevada Traverse, I had the sad privilege of publishing the obituaries of a lot of similar individuals - mentors and inspirations to our generation. Every one of those obits made me sad at who and what we have lost. Out of my list of sages, only Walt and Steve are still around, so those two terms I mentioned earlier are most definitely accurate.

Steve is far too humble and down to Earth to be anything but embarrassed by this little piece of purple prose, and you might think I am pouring it on a little thick. So what exactly is my point? Only that Steve is for us Nevada Land Surveyors, a torch-bearer for the truest spirit of our profession and what harm would it do if we joined him, picked up that torch and carried it forward to the next generation of Land Surveyors? Be honest, be thorough, keep cost secondary to correctness and never miss an opportunity to mentor the up-and-coming.



Steve Parrish providing a presentation at NALS Conference





From Don Wilson ...

My friend Steve Parrish

I first met Steve Parrish at the Fall ACSM Convention in Phoenix in 1975 where we were both presenting papers. Shortly after that, I had the honor of being invited to other programs at WestFed, State and Tri-State Conferences in several western states, frequently in California and Nevada as well as ACSM Fall Conventions in that part of the country. At most of these gatherings I would hook up with Steve for dinner, at times with our wives and mutual friends. Thanks to Steve and company, I participated in the federal training program at Marana, Arizona, all of which gave us an opportunity to socialize and work on professional-related problems and conduct training sessions. Over the years we developed a close friendship, affording us both opportunities to participate in professional presentations in his part of the country and, on a couple of occasions, bringing he and Gloria "back East" to share his unique retracement experience with my colleagues. Both of us being fanatical about fishing, we often found a way to spend a long weekend on the water, both in his backyard and mine. Together we pursued a variety of fishes in a variety of locations – Pyramid Lake, the Walker River, high Yosemite country, Wild Horse Reservoir, the Truckee River, and Moosehead Lake in Maine. Numerous times my wife Christine and I visited and stayed with Steve and Gloria, and they were hosted at our home in New Hampshire. Once, in the middle of the winter, we were confronted with an old fashioned New England blizzard, shutting down air travel and highways. While annoying since it interrupted their travel plans, we made the best of it and had another day together in spite of trying conditions.

Steve and I have consulted on numerous occasions, email and talk on the telephone regularly, and have maintained close contact over the years. He has been particularly supportive of my writing endeavors producing professional texts, where his knowledge, experience and insight has been more than welcome.

One of life's more enjoyable events has always been whenever either of us is speaking, whether a seminar or otherwise, the other always makes an effort to attend. That in itself gives us a special bond. Given Steve's credentials and vast experience, I always know I will not be disappointed in his programs. A special delight is when we are afforded the opportunity to appear on a panel together. It is refreshing to witness such a close friendship over a span of nearly 50 years, when we live on opposite side of the country.

Steve is a special person and has always been a special friend. I have taken great comfort in the fact that I have a friend, someone I can count on, on the other side of the continent and always look forward to the next time we can get together, professionally or otherwise. Steve: thanks for being there, and thanks for your willingness to share precious time with a colleague or friend, and thanks for sprinkling conversations with knowledge and hard-earned wisdom.

From Dorothy Calegari & Crissy Willson...

We have had the privilege of working closely with Steve Parrish through multiple land surveying associations and events. When you need someone you can count on, Steve is one of the first who come to mind. If we need a speaker, someone who will draw a crowd, Steve is always willing to help. If we need someone to bounce an idea off and get honest feedback or constructive advice, we can always count on Steve. If we need a friend to lean on, or someone who will make us smile, Steve is always there. When the phone rings and it's Steve at the other end, it's always a better day!

Throughout the years Steve has selflessly volunteered his time and talent to the betterment of the land surveying profession. His mentorship extends beyond the boundaries of Nevada, as he has supported and educated surveyors across the country.

Besides what he has done for the land surveying profession, Steve has made an impact on the world by being a kind, caring, family man, with the upmost integrity. We are lucky to call Steve Parrish our friend.

The greatness of a man is not in how much wealth he acquires, but in his integrity and his ability to affect those around him positively.

—Bob Marley



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Applications

Surveying

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- Elevation and terrain models
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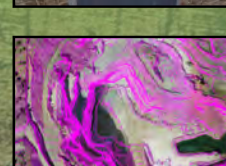
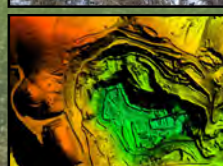
- Pit and leach pad volume measurements
- Disturbance and reclamation monitoring
- Mine claim base maps
- Site documentation for regulator permitting

Monitoring & Inspection

- Geological surface monitoring
- Infrastructure and facility inspection
- Change detection over time
- Removing personnel from dangerous situations

GIS

- Imagery and elevation layers for databases
- Imagery classification and analysis



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Email: kalmeter@woodrogers.com

Michael Detwiler, LSI – Photogrammetrist

Phone: (775) 828-5688

Email: mdetwiler@woodrogers.com



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Sustaining Members

Following is a listing of sustaining members of the Nevada Association of Land Surveyors. Please remember that these firms and businesses, through their NALS membership, are supporting the aims and objectives of our association.

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North Las Vegas, NV 89032
T. (702) 291-2875
info@aerialmappingconsultants.com

AeroTech Mapping

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Las Vegas, NV 89117
T. (702) 228-6277
F. (702) 228-6753
leotorres@atmlv.com

Atkins Global

617 Alexander Avenue
Las Vegas, NV 89106
T. (323) 425-5680
chevyhdz23@gmail.com

Berntsen International, Inc.

PO Box 8670
Madison, WI 53708
Reno, NV 89511
T. (608) 249-8549
awiegand@berntsen.com
www.berntsen.com

Carlson Software

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lrojas@carlsonsw.com

Monsen Eng. Supply

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Reno, NV 89502-2381
T. (775) 359-6671
F. (778) 359-6693
marty@monsengengineering.com

Nevada Transit & Laser

Joe Schneiderwind
5720 S. Arville, #110
Las Vegas, NV 89118
T. (702) 960-2833
joe@rmtlaser.com

Paul R. Wolf's Artisan Surveying Group Las Vegas' Pioche' McGill"

PO Box 33434
Las Vegas, NV 89133-3434
T. (702) 233-3451
twolf@ArtisanSurveying.com
www.ArtisanSurveying.com

US Survey Supply

PO Box 2127
Bandon, OR 97411
T. (541) 404-6825
rod@ussurveysupply.com

Vertical Mapping Resources, Inc. Andrew Babian

1610 Montclair Avenue, Suite D
Reno, NV 89509
T. (775) 737-4343
info@verticalmapping.com

NALS Board of Directors Meeting

Thursday, July 30, 2020 • Via virtual meeting

MINUTES

CALL TO ORDER

President Greg Phillips called the meeting to order at 9:00 AM.

ROLL CALL

Greg Phillips, President
Justin Moore, Vice President
Robert Carrington, Secretary/Treasurer
Nick Ariotti, Director
Todd Enke, Director
Bill Ray, Director
Frank Wittie, Director
Crissy Willson, Executive Director

Guests: Jake Johnson, Trent Keenan, and Bill Kruger

PRESIDENT'S REPORT

Report included in agenda.

SECRETARY/TREASURER'S REPORT

Financials included in the agenda.

Secretary/Treasurer Robert Carrington reviewed the financial statements as included in the agenda.

MOVED by Justin Moore and **SECONDED** to accept the financial statements as included in the agenda. **MOTION CARRIED.**

EXECUTIVE DIRECTOR

Executive Director Crissy Willson discussed the need for member engagement. As Chapters are unable to meet in person, Crissy will assist in setting up virtual meetings so that members can still network.

Crissy provided an updated membership list and encouraged Board members to reach out to those on the unpaid dues list.

2022 DATUM

NGS has reported that the 2022 datum has been placed on hold due to the pandemic. This provides NALS additional time in developing the draft legislation.

ADVANCED EDUCATION

Advanced Education Chair Trent Keenan has reached out to Byron Calkins but has not received an updated report. GBC is still soliciting for a second professor. Trent maintains contact with GBC and expresses NALS support of the program.

ADVANCED TECHNOLOGY COMMITTEE

Advanced Technology Committee Chair Todd Enke provided an article regarding Ligado (formerly LightSquared). Crissy reported that additional articles are available on the NALS social media pages and suggested Board members also visit <https://www.keepgpsworking.com/> which is a coalition formed to protect GPS.

BOARD OF PROFESSIONAL ENGINEERS & LAND SURVEYORS

Report included in agenda.

The Nevada Board of Professional Engineers & Land Surveyors (BPELS) has proposed several amendments.

Action Item: Board Members to review proposed amendments. Crissy to schedule follow-up Board meeting next week to take a position on each amendment.

NEVADA TRAVERSE

President Greg Phillips thanked Trent Keenan for volunteering to serve as Editor. NALS continues to receive positive feedback regarding the Nevada Traverse.

Trent reported the next deadline for the Traverse is August 15th.

CONFERENCE

Unfortunately, due to the COVID-19 outbreak the conference, originally

scheduled for March and postponed to August 21-25, has been shifted to a virtual platform. Attendees have been provided an opportunity to maintain their registration or cancel for a full refund.

Crissy provided an overview of how the shift to a virtual conference will impact the NALS budget. The NALS Board of Directors have appropriately reserved funds each year which will lessen the impact to the budget.

Registration is still open and members are encouraged to register (or re-register if they cancelled). The virtual conference will provide over 30 hours of continuing education.

Information for the conference can be found at PLSeducation.org

MEMBERSHIP

Report included in agenda.

Chapter Officers to contact members on the unpaid dues list and encourage them to renew their membership.

NDOT AD HOC COMMITTEE

Due to the pandemic, NDOT had originally postponed the software launch to allow access to records. NDOT is now ready and will be working with NALS to provide the information to the membership.

NOMINATING COMMITTEE

Report included in agenda. Immediate Past President and Nominating Committee Chair Jason Higgins presented the following slate of candidates.

2021 Proposed Slate of Candidates

Justin Moore, President
Robert Carrington, Vice President
Bill Kruger, Secretary
Nick Ariotti, Treasurer
Greg Phillips, Immediate Past President (by succession)

MOVED by Justin Moore and **SECONDED** to approve the 2021 slate of candidates. **MOTION CARRIED.**

Executive Director Crissy Willson will notify the membership of the approved slate of candidates. The membership will be provided an opportunity to propose additional nominees. If no other nominations are received, a unanimous ballot will be cast in lieu of an election.

NSPS DIRECTOR

Report included in agenda.

The NSPS fall meetings in Tulsa have been shifted to a virtual platform.

WFPS

Report included in agenda.

WFPS Director Trent Keenan recommended visiting the Alliance for Responsible Professional Licensing - <http://www.responsiblelicensing.org/> This group is providing outreach to the public regarding the importance of licensing for technical professions such as CPAs, Engineers, Architects, and Land Surveyors.

CHAPTERS

Chapter reports were included in the agenda.

Executive Director Crissy Willson and President Greg Phillips reported receiving a request from the Great Basin Chapter to suspend the Chapter as they have a lack of volunteers to manage the chapter business. The Great Basin Chapter has not been active, has not held meetings, has not elected officers, and has not elected a Representative for the NALS Board of Directors in several years. The Board of Directors discussed the request and specifically the need to make sure the membership in the area were supportive. It was noted that dissolving the chapter will remove the burden of managing the business of the chapter but does not preclude the membership from actively engaging. The local members could still meet, and should a

CONTINUED ON PAGE 24 ►

NALS Remembers...

Jerry A. Cook Jr., a long-time resident of the Las Vegas area, passed away on March 18, 2020 at St. Rose Dominican Hospital, Siena Campus. He was born on December 29, 1954 in Salt Lake



City, Utah to Gerald Cook Sr. and Janice Cook. He found his soul mate and partner for life, Leona Romero, at the age of 23, and were married on June 28, 1980. Jerry was a Professional Land Surveyor and worked in the industry for over 40 years. His career moved his family from Salt Lake City to Cape Cod, Massachusetts in 1987, then to Las Vegas in 1990. Jerry was a sports fanatic. His favorite teams were the LA Rams, Anaheim Angels, and his #1 obsession, the UTAH UTES. He was a

Ute Man, through and through. His love of sports was deeply rooted in his children and grandchildren, who Jerry coached throughout their childhood. Jerry is survived by his wife, Leona; sons Derrick (wife Jen) and Cory, daughters Jennifer and Candice (their children); grandchildren Brayden, Baylee, Isaiah, Jacob, Mariah, Nolan; siblings Deborah (husband Jonathon), Scott, Clary (wife Estrellita). A Celebration of Life will be held at a later date, when it is safe to do so (TBA). GO UTES!

Tom Ruschkewicz remembers Jerry Cook:

Jerry was the Survey Manager for Thomason Consulting Engineers/MSG Surveying over the past 8 years. Prior to that he managed the Carter & Burgess/Jacobs Survey department for 18 years. Jerry hired me in 1997 and I spent over 12 years working for him directly before I was transferred by the company to Texas. He was a great mentor and very passionate about Surveying. Although, he wasn't directly involved in professional organizations because of family commitments, he strongly encouraged and supported others that worked with him to engage in NALS, NSPS, etc. Truthfully, I would not be the person I am today, both professionally and personally, if it wasn't for his guidance, mentorship, and support. Not only has he affected my life in such a positive manner, but many others as well.

On Wednesday, July 1, 2020, **Frederick William Orban**, husband to Judy Orban and father of two children, passed away at the age of 76.



Frederick was born on March 21, 1944 in Hennepin, MN to William and Theodora (Herbes) Orban. He graduated as a rifleman from Company D, 2nd Infantry Division in 1961. He was a respected Professional Land Surveyor throughout his career. He was licensed as a Professional Land Surveyor

in Florida, Nevada, and Alaska. Frederick and Judy raised one son, Kurt, and one daughter, Sophia.

Frederick's journey through life culminated in experiences that built a man with an indomitable spirit. His career spanned 40 plus years and included work in Florida, Nevada, Zaire, Africa and in Alaska where he worked on the "Alyeska" pipeline. He went on to be President/Principal of Surveyors, Inc., and Pentacore and was also President of GCW's land surveying department. He had a great passion for Photography, Stamp Collecting and Land Surveying.

Frederick was preceded in death by his father William and his mother Theodora and his wife Judy. He is survived by his son Kurt, his daughter Sophia, their spouses, and their several grandchildren & great grandchildren. He will be missed by all who knew him.

'Final Point' Gathering for Barry Hickerson Sparks, NV September 2, 2020



greatly.

An informal get-together to remember former NALS President and longtime Northern Nevada survey icon, **Barry Hickerson** took place at Lillard Park in Sparks on September 1, 2020. The occasion marked the recent installation of Barry's final Point monument in the park. Barry passed away on May 11, 2016 and his friends, former employees, and the numerous surveyors whose careers he helped advance still miss him

Sadly, the organizer of the event, George Lindesmith, could not



attend due to an illness in the family. The two individuals who took the lead on getting the monument ordered and set, Justin

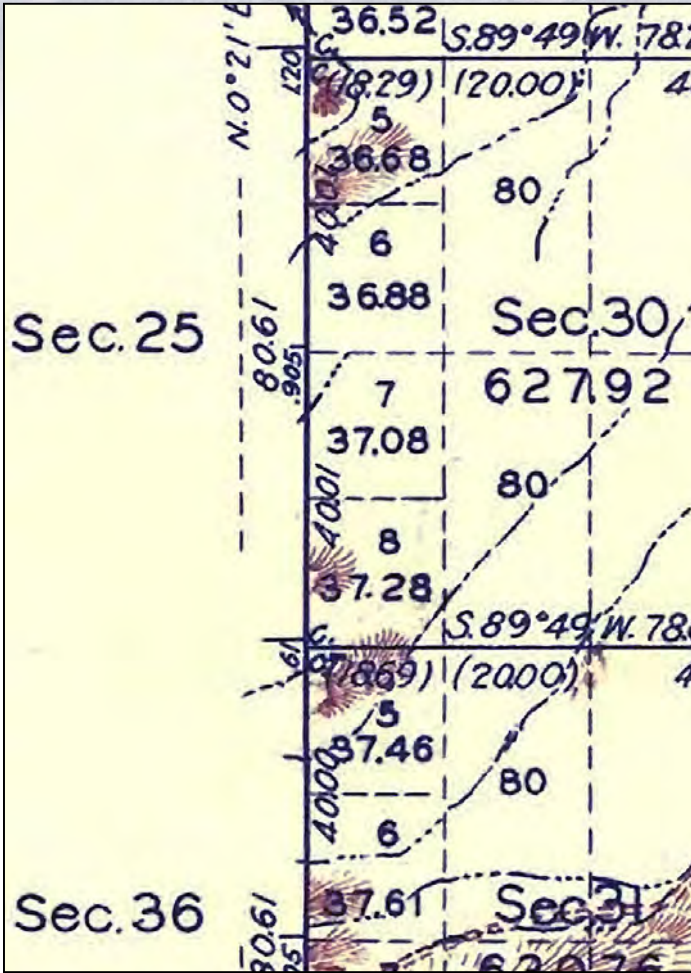


Moore and Greg Bigby, both former employees, friends and hunting partners of Barry's, led the gathering and spoke fond words of our fallen friend. A presentation was made to Barry's friend, protégé, hunting partner and most importantly, stepson, Rusty Combest, who represented Barry's family. Rusty's mom Val, could not attend the ceremony, but promises to be there for the official NALS ceremony when the current national health issues

have subsided and a date can be set.

In the meantime, join me in a private thought of Barry Hickerson and I'm sure you too will smile at his memory. He was a one-of-a-kind!





Portion of T22S, R63E, M.D.M.

on the side of the senior line (when the Closing Corner is found to cross into the senior section, and 2) eliminate the creation of a "gap or hiatus" between the senior line and the junior survey when the Closing Corner is found short of the senior line.

The guidance for restoring a Closing Corner on the line closed upon can be found in the following references:

2009 BLM Manual of Surveying Instructions Section 7-41 thru 7-49, Pages 172-173.

7-4.1. A lost closing corner will be reestablished on the true line that was closed upon, and at the proper proportional interval between the nearest regular corners to the right and left. Restorations of lost closing corners are controlled by the regular corners. These include the corners that were originally established by measurement along the line and other corners that have been established in an obvious careful resurvey or retracement along the line.

1974 BLM Restoration of Lost or Obliterated Corners & Subdivisions of Sections

1973 BLM Manual of Surveying Instructions
Section 5-41, Page 140

1947 BLM Manual of Surveying Instructions
Section 378, Page 299

1930 GLO Manual of Surveying Instructions
Section 378, Page 273

1919 GLO Manual of Surveying Instructions
Section 378, Page 269

1896 GLO Circular on Restoration of Lost or Obliterated Corners & Subdivisions of Sections

All comments, feedback and other opinions are welcome.

Michael Kidd, P.L.S.

(with heavy edits and additions courtesy of Steve Parrish,
Nevada P.L.S. #9475)

Michael.Kidd@cityofhenderson.com



About the Author

Michael Kidd, PLS is currently the City Surveyor for the City of Henderson, Nevada. Michael's entry into the land surveying profession began with the U. S. Air Force in 1985. He is currently the Vice Chair on the Nevada Board of Engineers and Land Surveyors, he also served as a member of the NCEES Professional Surveyor Exam Committee.



NALS BoD Meeting Minutes...continued from page 22

volunteer come forward, the chapter could be revitalized.

MOVED by Justin Moore and **SECONDED** to dissolve the Great Basin Chapter.
MOTION CARRIED.

As the chapter will be dissolved, the funds remaining in the chapter account will revert back to NALS as the parent organization. It was recommended that the fund either be earmarked for chapter revitalization at a future time or donated to the NALS Education Foundation and earmarked for the Great Basin College scholarship.

MOVED by Justin Moore and **SECONDED** to donate the chapter funds to the NALS Education Foundation to be used for Great Basin College scholarships.
MOTION CARRIED.

Action Item: Executive Director Crissy Willson to contact Great Basin Chapter members (less than 10 members) and work with the previous chapter officers to dissolve the chapter. If during the notification process a chapter member indicates a desire to maintain the chapter and can obtain volunteers to run the chapter, Crissy will bring that information back to the Board of Directors.

MEETING SCHEDULE

August 22-25th – Virtual APLS-CLSA-NALS Conference

September 9th or 17th – NALS Virtual Meeting

Action Item: Crissy to contact Matt Gingerich and Mike Kidd to determine their availability to provide a BPELS update.

October 16th – Las Vegas (or Zoom)

ADJOURNMENT

The meeting was adjourned at 11:00 AM



When the Smoke Clears and You Can See the Stars

To Find the True Meridian With the Theodolite

Take a board of about one foot square, paste white paper upon it, and perforate it through the center; the diameter of the hole being somewhat larger than the diameter of the telescope of the theodolite. Let this board be so fixed to a vertical staff as to slide up and down freely; and let a small piece of board, about three inches square, be nailed to the lower edge of it, for the purpose of holding a candle.

About twenty-five minutes before the time of greatest eastern or western elongation of the pole-star, as shown by the tables of elongation, let the theodolite be placed at a convenient point and levelled. Let the board be placed about one foot in front of the theodolite, a lamp or candle placed on the shelf at its lower edge; and the board be slipped up or down, until the pole-star can be seen through the hole. The light reflected from the paper will show the cross hairs in the telescope of the theodolite.

Then, let the vertical spider's line be brought exactly upon the pole-star, and, if it is an eastern elongation that is to be observed, and the star has not yet reached the most easterly point, it will move from the line towards the east, and the reverse when the elongation is west.

At the time the star attains its greatest elongation, it will appear to coincide with the vertical spider's line for some time, and then leave it, in the direction contrary to its former motion.

As the star moves towards the point of greatest elongation, the telescope must be continually directed to it, by means of the tangent screw of the vernier plate; and when the star has attained its greatest elongation, great care should be taken that the instrument be not afterwards moved.

Now, if it be convenient to leave the instrument in its place until daylight, let a staff, with a candle or small lamp upon its upper extremity, be arranged at thirty or forty yards from the theodolite, and in the same vertical plane with the axis of the telescope. This is easily effected by revolving the vertical limb about its horizontal axis without moving the vernier plate, and aligning the staff to coincide with the vertical hair. Then mark the point directly under the theodolite; the line passing through this point and the staff, makes an angle with the true meridian equal to the azimuth of the pole-star.

From the table of azimuths, take the azimuth corresponding to the year and nearest latitude. If the observed elongation was east, the true meridian lies on the west of the line which has been found, and makes with it an angle equal to the azimuth. If the elongation was west, the true meridian lies on the east of the line; and in either case, laying off the azimuth angle with the theodolite, gives the true meridian.

Taken from "Public Land Surveys: History, Instructions, Methods" by Lowell O. Stewart - chapter on Original Survey Instructions - Originally published in 1935. Stewart's exact source of this set of instructions is not cited, but they are good ones.



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March 27-30, 2021
Silver Legacy Resort
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CLSA
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2021

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SNALS Golf Tournament Wrap Up

Prepared by Trent J. Keenan, PLS



During this crazy pandemic year, it was nice to get out and have a little fun as a group. Golf is defined as a game played on a large open-air course, so this was a great opportunity to stay within the Governor's guidelines, practice social distancing, and still have a little fun! With that in mind, the SNALS Board decided to move forward with the 32nd Annual SNALS Golf Tournament, but in a smaller version!

Golf is important in the professional world for building relationships and

it is no different for a professional organization. I can remember playing my first round of golf (ever) at the 2006 SNALS Golf Tournament, and just the night before at the Annual Pool Party, I had spoken with some of the SNALS Board about how to get involved NALS. Little did I know it would turn into a lifelong career as a Board Member. And, to think it all started with this game of golf that we all love.

The golf course announced that a maximum of 50 players would be allowed and therefore the SNALS 32nd Annual Golf Tournament sold out quickly.

The weather was perfect for late September and a great time was had by all. Thanks again to those who were able to make it! Let's just hope we can get back to the old SNALS golf tournament days when we had 200+ golfers!



The 1st Place Team that shot a 58 in a scramble format was: Joe Brandise Sr., on the left, Patrick Beebe center, and John Brandise on the right. Joe Brandise Jr, (not pictured). Side note: This is also the same team that won the 16th Annual SNALS Golf Tournament! Great Job guys!



The 2nd Place Team (by scorecard playoff) shooting a 64 in a scramble format was: Left to right is Brandon Vaughan, Donny Crosby, Will Sizemore and Raymond Payan. As you can see Donny is always one of our fashion guru's here in the South!



Great Basin Chapter Update

The leadership of the Great Basin Chapter contacted the NALS Board of Directors regarding the status of the Chapter. The Chapter has not been meeting and Chapter Officers are struggling to find volunteers to take over leadership roles. Chapter Officers requested that the Great Basin Chapter be dissolved so that the volunteer responsibilities of maintaining a Chapter be removed.

After reviewing the request of the Chapter Officers, the NALS Board of Directors has taken action to dissolve the Great Basin Chapter. This alleviates the reporting, financial obligations, and Board meeting requirements of the Chapter. Members of the Great Basin Chapter will be automatically moved to the Lahontan Chapter. Many meetings are now being held virtually and we hope this provides an opportunity for those members to participate more actively in NALS.

The Great Basin Chapter was founded in part to provide support for the land surveying program at Great Basin College. With the creation of the NALS Education Foundation, the Great Basin College will continue to be supported. The remaining funds in the Chapter account will be donated to the Education Foundation and earmarked for scholarships for Great Basin College students.

The NALS Board of Directors is hopeful that in the future there will be enough members in the Great Basin area to revitalize the Chapter and serve in leadership roles.



NRS / NAC Rule of the Month:

Prepared by Trent J. Keenan, PLS

***Information taken from the October 2019
NVBPELS newsletter.**

During 2019 the board updated its laws and regulations, Nevada Administrative Code 625 and Nevada Revised Statutes 625, to better align with current practices. Changes to regulations became permanent on January 30, 2019, and changes to law became effective July 1, 2019.

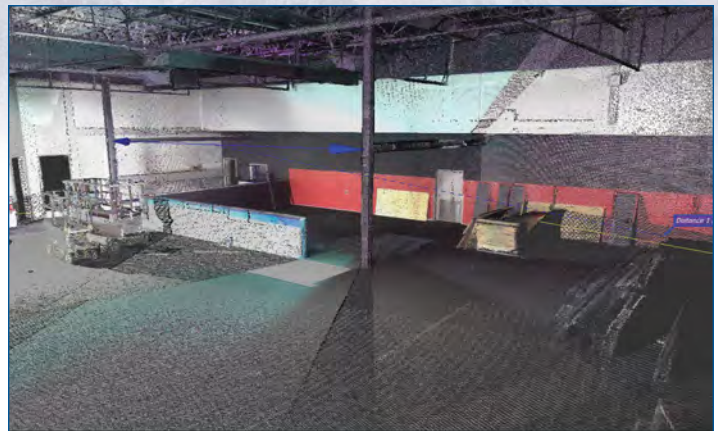
NAC 625.630 updates language to eliminate the “brick and mortar” requirement. Firms are no longer required to have a full-time engineer/land surveyor in each office that provides services. A firm still needs a professional in responsible charge, but can have multiple offices with a single professional in responsible charge.

Why the change? The intent of the change is to reduce barriers to trade and competition and also enhance the economic opportunities of Nevada small businesses. A firm still needs a professional in responsible charge, but can have multiple offices with a single professional in responsible charge.

NRS 625.407 removes the “brick and mortar” requirement. Why the change? Firms are no longer required to have a full-time engineer/land surveyor in each office that provides services. A firm still needs a professional in responsible charge, but can have multiple offices with a single professional in responsible charge. The change benefits communities by increasing opportunities for new businesses and increasing competition and also benefits Nevada engineering and land surveying businesses. For example, an engineering firm in Elko is now enabled to open offices in Reno or Las Vegas since they would no longer be required to employ a full-time engineer in each office.

Editorial Notes provided by Patty Mamola, PE – Executive Director, NVBPELS

The changes to Nevada law and regulations removed the requirement that a licensed Nevada professional be generally present, during normal business hours, in a Nevada local office of the employer. The intent was to remove the physical presence constraint while not compromising the accountability and oversight of being in responsible charge of the work performed, and to reduce barriers to trade and competition. This enables Nevada small businesses to open secondary offices in other Nevada locations without having to have a full-time professional in each office. The change enhances the economic opportunities of Nevada small businesses.



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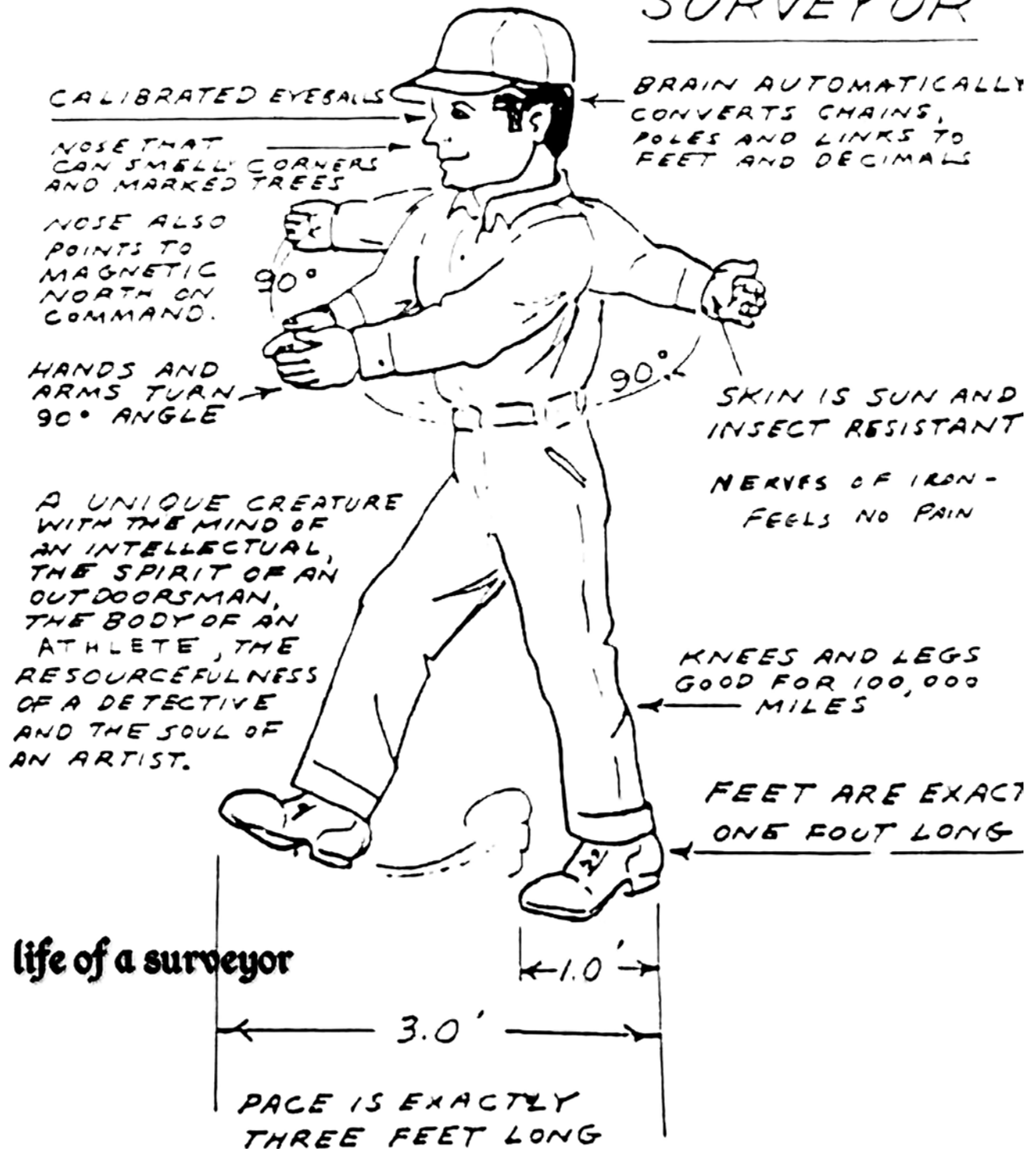
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Members have spoken and we are listening! To fill the void left by the ending this past July of the NSPS Radio Hour, the weekly radio show hosted by Executive Director Curt Sumner, we are proud to announce our new podcast, **"SURVEYOR SAYS!"** featuring all things surveying.

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