Announcements

The Prism wins State Award...
The newsletter for the Central Valley Chapter of CLSA has been awarded the Newsletter of the Year. The award will be given to the Editor of “The Prism” at the Annual CLSA/NALS Conference in Reno, Nevada later this month.

Online renewals now available for State Licensees
Licensees may now submit their renewal payments to the Board via our new online system. Click here for the online submittal form. NOTE: During this trial period we are only able to accept renewal payments for civil, electrical, mechanical, and land surveyor licenses. All others must be renewed in the traditional manner.

Chapter Waives 2012 Dues for Unemployed Members
At the October, 2011 meeting the Central Valley Chapter voted to waive 2012 chapter dues for any members (or new members) who have become victims of the current economic downturn and are unemployed. Please fill out the Membership Application, enter “Unemployed” on Line 7 for the Name of Firm, Agency or College, submit your application, and your 2012 Dues are waived. Click here for the 2012 Membership Application

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To Map or Not To Map...

The situation: You are asked to do a lot line adjustment, with the proposed property line never having been monumented. Is a record of survey required? The Professional Land Surveyors Act brings up a couple of requirements that must be looked at first before answering this.

- Are you establishing one or more points or lines not shown on any subdivision map, official map, or record of survey, the positions of which are not ascertainable from an inspection of the subdivision map, official map, or record of survey? (8762(b)(4))
- Did you set any points or lines during the performance of a field survey of any parcel described in any deed or other instrument of title recorded in the county recorder’s office are not shown on any subdivision map, official map, or record of survey? (8762(b)(5))

Now, it will be up to each individual Surveyor to decide how they want to interpret the PLS Act and whether or not their work performed for the lot line adjustment designates a “Field Survey”. If you in fact have done a field survey, then you are required to do a record of survey. It’s the right thing to do!!!

If you would like to comment on this topic or suggest another, please submit it to: editor@californiacentralvalleysurveyors.org
Technology and Info


By Knud Hermansen, LS, PhD, PE, Esq. and A. Richard Vannozzi

Readers are cautioned that they should investigate state cases dealing with the particular application of the law to determine how the law applies in their state. Many states have modified the common law that is presented here.

If a surveyor fails to identify implied easements and that failure results in damages to the client, the surveyor may be subject to liability.

The previous articles have introduced surveyors to two forms of implied easements that arrive by information found in the documents rather than express conveyance: 1) easements created by the description of a lot that references a subdivision plat and 2) easements created when the grantor's road is a boundary.

Another form of implied easement is known as a quasi easement. A quasi easement is almost always appurtenant to property. In other words, once the easement is created, it attaches to one property and burdens other property, and it exists regardless of whether it is mentioned in deeds to the property or not.

Quasi easements are true easements, but they derive their name from the fact that, prior to the division that gave rise to their creation, all the uses existed even though no easement technically existed (or needed to exist) because all of the underlying titles were in common ownership.

A quasi easement will exist when there is:

- an existing use at the time of a division and grant,
- The use was apparent at the division and grant, and
- The use continued for the benefit (reasonable comfort and enjoyment) of a property after the division and conveyance.

The respective lots arising after the division will be burdened or benefited as the situation existed prior to the division, so long as the use is either known to exist or the situation is such to reveal its existence to anyone exercising ordinary care. Thus, a buried or concealed use will not pass as a quasi easement. To be recognized as an easement, such a use requires an express grant.

Continued on page 7
Land Surveying Photo Gallery

Unique Historic Photos Now Available for Purchase! Order Today!

Proceeds from the sale of photos benefit California Land Surveyors Association Education Foundation (CLSA EF) and will be used to fund scholarships for land surveying students.

CLSA would like to thank Bryant Sturgess for generously donating his collection of historic images.

Order online at: clsaphotos.smugmug.com
State News
BPELSG Announces New Senior Registrar Land Surveyor

The Board for Professional Engineers, Land Surveyors, and Geologists (BPELSG) is pleased to announce that Raymond Mathe, PLS, has accepted the position of Senior Registrar Land Surveyor, effective February 28, 2012.

In 2004, Mr. Mathe was appointed by the County of Orange Board of Supervisors to serve as the County Surveyor. Prior to his position at the County, Mr. Mathe worked as a Project Manager at a private engineering and land surveying firm and served as the Deputy County Surveyor for the County of Riverside. Mr. Mathe obtained a Bachelor of Science degree in Workforce Education and Development from Southern Illinois University at Carbondale in 1995. Mr. Mathe's experience and knowledge of BPELSG's mission and operations, particularly with respect to licensing examination development and the Professional Land Surveyors Act, will prove to be very beneficial to the Board's licensees, applicants, and the public.

Ray, along with Ric Moore and Pat Tami will be guest speakers for the Central Valley’s May Chapter Meeting.

Frames for the Future
New Datum Definitions for Modernization of the U.S. National Spatial Reference System (Part 1):
By David H. Minkel and Michael L. Dennis

In 2008, the National Geodetic Survey (NGS) released its 10-Year Plan (NGS, 2008). In that plan, NGS describes the replacement of the two national datums currently in use. These are the horizontal datum (the North American Datum of 1983, or NAD 83) and the vertical datum (the North American Vertical Datum of 1988, or NAVD 88). Note that NAD 83 (1986) was originally a two-dimensional datum in that only latitude and longitude were provided (that is, it was a horizontal datum and is still commonly referred to as a horizontal datum). Subsequent realizations of NAD 83, such as NAD 83(HARN) or NAD 83(NSRS2007), also provide ellipsoidal heights; they are three-dimensional and properly called a geometric datum. For the remainder of this article there will be no further use of the term horizontal datum as it is no longer appropriate.

These new geometric and vertical datums will provide more consistent three-dimensional positioning throughout the US, including changes in position with time (velocities), thus adding a fourth dimension to the system. The objectives of this article are to: 1) describe the new datums, 2) compare them with the current horizontal and vertical datums, 3) provide suggestions for easing the transition of geospatial data based on NAD 83 and NAVD 88, and 4) solicit comments from surveyors and other geospatial professionals. Since these new datums are currently under development, a complete description of the new datums and their ramifications is not currently possible. Nonetheless, enough is known to initiate a discussion with the user community, and this is the appropriate stage of the process for seeking user input. Note that NAD 83 and NAVD 88 are both well known by the term "datum", and their replacements, to avoid confusion, will continue to be called "datums" throughout this article. Although NGS recognizes the importance of accurate and consistent terminology, the question as to whether the term "datum" or "reference frame" is more appropriate has not yet been settled and will not be pursued in this article.

Background
The NGS 10-Year Plan acknowledges the utility and efficiency of Global Navigation Satellite Systems (GNSS) technology in virtually all geospatial activities. It is with this acknowledgment, and a desire to improve the utility of GNSS techniques, that NGS is planning a migration of the National Spatial Reference System (NSRS) from its existing datums based on networks of passive survey marks, to a GNSS-based NSRS comprised primarily of active stations. In this article, a passive mark is defined as a conventional survey mark (for example, a brass disk set in a concrete monument) with a position and/or height precisely known at the time it was observed. An active station is defined as a GNSS base station; a network of these stations- referred to as Continuously Operating Reference Stations (CORS)-comprises the "back bone" of the NSRS. These CORS sites are constantly monitored by NGS for changes in position, and they were used to define the most recent realizations of NAD 83 within the U.S (NGS, 2011). In addition, GNSS data from the CORS are provided free of charge to the user.
National News

FCC Suspends LightSquared Waiver
By Gavin Schrock, PLS

It may sound like the saga is over, but there will be changes on the horizon for the positioning, navigation, and timing communities. GNSS is spared an impending blow but should prepare for some long-term (but not altogether unexpected nor completely unwelcome) changes.

An expected report came late Tuesday February 14th, 2012 from the National Telecommunications and Information Administration (NTIA), the federal agency directly advising the FCC on the LightSquared issue, echoing the PNT EXCOMM recommendations from January 13th of this year. The letter from NTIA chief Lawrence Strickling to FCC chairman Julius Genachowski concludes, “at this time there are no mitigation strategies that both solve the interference issues and provide LightSquared with an adequate commercial network deployment.” As expected, concerns for civil aviation and national security held the greatest weight in deliberations. The NTIA also recommended a long period of study of these issues and spectral policy-change proposals, with a longer transition period added for any negotiated changes.

The FCC released a statement shortly after, stating that they would not lift the prohibition on LightSquared from deploying its network because of the affects on GNSS. Official word is expected from the FCC within a few days of my writing this article, as well as an announcement of yet another public comment period on the FCC plan to suspend the waiver. The FCC is also expected to follow NTIA recommendations to begin the long process of working on both the “protection standards” sought by the GNSS community and possibly the receiver standards sought by the telecommunications industry—these combined initiatives may see an eventual reasoned and responsible co-existence of GNSS and broader uses of adjacent spectrum.

What this means to the end user is that there will not be a LightSquared system rapidly adopted as originally planned, if at all, but that there will most likely be eventual changes needed to how GNSS equipment works—in the very distant future. Many say this would not be before the 2020 date of the planned P (Y) code sunset (that would affect codeless and semi-codeless solutions); many more believe the inevitable bureaucratic tangles and public safety considerations would push this even further back. The recent petition by LightSquared, seeking an FCC ruling that GPS is not entitled to specific protections, is still open for public comment. While prospects for such a ruling are looking more like a long shot, those on all sides of the issue are encouraged to file a comment. The NSPS/ACSM has put together a summary and guide on how to file (click on www.multibriefs.com/briefs/nsps/LightSquaredUpdate.pdf to upload the PDF).

This news is expected to be received with a mixture of excitement and relief from GNSS users caught in a yearlong untenable situation, and dismay, disappointment, and perhaps anger from LightSquared and their supporters who feel they have been trapped in an untenable and unfair position of their own. This does not necessarily spell the end of LightSquared or plans for whoever may eventually hold the license for the spectrum in question, but it does spell that the end game may be long in coming. How this saga plays out in the halls of government, spectral soul-searching within the FCC, PNT, DoD, FAA, and GPS and telecommunications industries may include sojourns in courtrooms as well as continued airings in the court of public opinion. But for the immediate future, GNSS users and developers who have been in a holding pattern may find new wind at their backs to implement and innovate.

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In the figure below, the owner decided to convey an existing “mother-in-law house” and lot (let’s hope after the mother in law passed away). Here, the grantee who purchased the mother-in-law house and lot would have a quasi easement for the driveway and a quasi easement for the utility line. The grantor may have a quasi easement for the septic field and driveway.

Some states require that the use forming the basis for the quasi easement be a necessary use, with strict necessity required when benefiting the grantor’s remaining land. Under the criteria of strict necessity, the grantor’s septic field may not qualify as a quasi easement because the septic field can be located at a different location. Therefore, an easement for the existing septic field is not strictly necessary.

The courts require a higher standard for the grantor to have a quasi easement because the grantor, exercising due diligence in the preparation of the deed, could have expressly stated what was intended to be reserved. In other words, why should the innocent grantee be burdened by a use that the grantor failed to expressly reserve in his or her own favor? In these cases, the courts have reasoned that the grantee should be subject only to a use not expressly reserved when the use is apparent and of such necessity that a reasonable person would have to know the use was meant to be reserved in favor of the grantor.

As seen from the example, certain easements—for a use that existed at the time of division and were continued after the division—give rise to an implied easement. The surveyor must not presume that every use not reflected as an express citation within the deed is an encroachment.

This becomes a critical consideration when the wording for notes and labels is chosen for ALTA/ACSM Land Title Surveys or when preparing plans for recordation or use in litigation. The mischaracterization of a use by a surveyor may inadvertently prejudice the position of a dominant or servient estate holder and create liability for the surveyor.
By Knud Hermansen, LS, PhD, PE, Esq. and A. Richard Vannozzi

The first three parts of this series discuss easements that arise by implication and not by expressed grant. Implied easements are legally recognized but not expressly stated. Standards such as the ACSM/ALTA Land Title Standards obligate the surveyor to be aware of and consider easements that may not always exist by express creation.

One additional form of implied easement is one that arises by necessity. An easement by necessity requires:

1. a use (need) that is a reasonable necessity at the time of severance, and
2. that it will cross the remaining land of the grantor (or the grantor’s heirs and assigns).

In the example in Figure 1, let’s assume the lot and home that was conveyed uses a driveway that is a trespass on the neighboring property. As a consequence, an easement by necessity across the retained lot is required to provide legal access to the conveyed lot. This easement by necessity is created when the conveyed lot is severed from the retained lot. This easement would burden the entirety of the retained lot and, at least theoretically, burden any and all lots created from the retained lot.

An easement by necessity generally requires there be strict necessity and not just a use that would be beneficial, less burdensome, or more convenient. For example, you could not argue that a lot that is conveyed with a six-foot-wide access easement should have a wider easement by necessity simply because the easement as is would not allow for larger trucks or equipment (needed to build a house).

Some states would not allow an access easement where the lot borders navigable water on the presumption that access, though difficult, is possible by travel on the navigable water.

Finally, consider when an easement by necessity burdens the grantor’s remaining lands in a series of sequential conveyances of vacant land. In Figure 2, access to the public road from Lot B would be more convenient by using the existing road through Lot A. However, unless the grantor reserved an easement to use the road when he or she conveyed Lot A, the implied access from Lot B by necessity has to pass through what were the remaining of the grantor’s lands at the time Lot B was conveyed. This is true even though subsequent grantees of the remaining lands presumed the owner of Lot B would use the road over Lot A.

As the examples illustrate, to correctly identify when an implied easement arises and where it would exist the surveyor must understand easements created by necessity and be cognizant of the sequence of the conveyances and the disposition of the various lots.

Identifying and characterizing easements by necessity can be a complex research problem for the surveyor on an ALTA/ACSM Land Title Survey, for example. On a parcel where the various boundaries are created through different families of sequential conveyances, this complexity can give rise to additional liability for the surveyor if the proper status of such easements by necessity is not identified.

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A geometric datum, such as NAD 83, is defined by a total of seven parameters that specify the location, orientation, and scale of a Cartesian coordinate system with respect to an Earth-Centered, Earth-Fixed (ECEF) reference frame (which in turn is referenced to Earth's celestial surroundings). Furthermore, in order to compute the more human friendly coordinates of latitude, longitude and ellipsoid height, two additional parameters are required, specifying the size and shape of an ellipsoid centered at the origin of the geometric datum.

A "realization" of a datum is the coordinate set for control stations determined from various observations performed at a particular time, such as GNSS observations, or traditional terrestrial observations such as triangulation. As new information becomes available (such as better models, newer observations, etc.) new coordinate sets can be determined which may be used to define a new datum realization, if such a change is warranted (note that coordinate changes, by themselves, do not automatically invoke a new realization; other factors must be considered). The realization of a datum by NGS is typically identified by appending the datum name with the year of the adjustment as the datum tag, such as, NAD 83(1986), NAD 83(1992), or NAD 83(NSRS2007). That is, NAD 83(NSRS2007) is a single, specific realization of NAD 83. The datum remains the same, but the coordinate set improves, one realization to the next.

Frames for the Future

New Datum Definitions ...cont from page 5

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Click for complete article

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Classifieds

Office Tech/Surveyor:
As posted on CLSA Employment Hotline:
Good Afternoon,
I have an immediate need for an office tech/surveyor familiar with boundary resolution and preparing Record of Surveys and Corner Records. Ideally this person would be located in the East San Francisco Bay Area as I am located near Walnut Creek. You would be working out of your own office with your own software. If interested please email me 2 work sample and your hourly wage requirement Send email to dmgengineering...at.....sbcglobal.......dot.......net

Dylan Gonsalves, PE, PLS
(Posted on CLSA Forum Employment Hotline 03-02-12)

Designer/Drafter
DeLaMare-Fultz Engineering & Surveying is looking for a Designer/Drafter; Preferably with an Associates Degree or higher in Surveying/Engineering with three or more years of experience and the ability to operate AutoCAD software/Civil 3D with effective drafting presentation skills. Please forward resume to dfengineering@dfengineering.com.

WANTED: Expert Consultants to Review Enforcement Cases
The Board's Enforcement Unit is in need of Professional Engineers and Professional Land Surveyors to serve as Expert Consultants on complaint investigation cases. Click the link above for further information regarding assisting the Board's Enforcement Unit as an Expert. Click here for more information

As posted on BPEL&G website

Have equipment to sell? Looking for a great deal? Check out the CLSA Forums!

Picture of the Issue
Von Schmidt Monument - CA,NV,OR State boundary marker

Established: 1872
Location: N 42° W 120°
Description: This rock and wood monument is located in the extreme northeast corner of California, about 120 feet northeast of station MV0392. Access is from the north, from the Adel to Fort Bidwell Road, take BLM Road south to Twelve-mile Creek, ford the creek and climb the canyon wall to station. This monument was established in 1872 by A.W. Von Schmidt who was hired to establish the corner of California, Nevada, and Oregon.
Sudoku:
The objective is to fill a 9×9 grid with digits so that each column, each row, and each of the nine 3×3 sub-grids that compose the grid (also called "boxes", "blocks", "regions", or "sub-squares") contains all of the digits from 1 to 9.

The Solution to January’s Puzzle:

**Find the Difference:** There are 10 things different between the two pictures below, can you find them?
Get Linked In  
Join our Google Group  
or find us on Facebook

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