

SURVEYOR

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Issue #178

The Basics About Deeds in California

Article by Michael P. Durkee, Esq.
and Jennifer Chavez, Esq. page 10

Do I Need an Injury and Illness Prevention Program (IIPP)?

Article by Jack R. Iriat, CSP page 12

One Thousand Flags

Article by Ron Nelms, PLS page 18



NSPS Awards

By John P. Wilusz, PLS, PE page 6

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“Recognizing that the true merit of a profession is determined by the value of its services to society, the California Land Surveyors Association does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social and economic influence vital to the welfare of society, community, and state.”

“The purpose of this organization is to promote the common good and welfare of its members in their activities in the profession of land surveying, to promote and maintain the highest possible standards of professional ethics and practices, to promote professional uniformity, to promote public faith and dependence in Land Surveyors and their work.”

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Inside This Issue:

Features:

The Basics About Deeds in California

By: Michael P. Durkee, Esq. and Jennifer Chavez, Esq. 10

Do I Need an Injury and Illness Prevention Program (IIPP)?

By: Jack R. Iriat, CSP 12

Surveyor's Right of Entry

By: Ralph Simoni, CLSA Legislative Advocate 16

One Thousand Flags

By: Ron Nelms, PLS 18

Columns:

My Other Hat: Violin Building

By: Kevin Akin, PLS 22

Tech Tips:

Geopotential Vertical Datum - E.T.A. 2022

By: Greg Helmer, PLS 26

SMA Expert Q&A

By: Michael P. Durkee, Esq. 30

Risk Management Revisited

By: Richard Hertzberg, CPCU, ARM 34

Bad Backsights - North San Juan

By: Carl C. de Baca, PLS 38

Departments:

From the Editor 6

President's Message 8

Kids Korner 9

What were they Thinking? 9

Geography Quiz 11/31

Professional Outreach Events 29

Index to Advertisers 32

Funny Bones 32

Welcome New CLSA Members 36

Photo of the Year Entries 35

CLSA Remembers..... 36

Crossword Puzzle 40/41

Sustaining Members 42

Cartoon Captions 43

Cover:

Original art for the California Surveyor by Donna Hanby. USGS rodman holding a stadia rod circa 1921. This painting is an artistic interpretation of a historic photograph that appears on the cover of USGS Circular 1341, History of the Topographic Branch (Division), 2009. To order Circular 1341 and other USGS information products, visit <http://store.usgs.gov>



From the Editor

By: John P. Wilusz, PLS, PE - Editor

John works for the California Department of Water Resources in Sacramento, CA.

NSPS Awards

In June the National Society of Professional Surveyors (NSPS) awarded the California Surveyor first place in two categories of the 2014 NSPS Excellence in Journalism Competition. The categories were slightly different this year than in years past. We won first place in the new category “Best Editorial” for Issue #175, Interview with Raymond L. “Larry” Hyder, PPF.” Few among us have Larry’s experience and expertise when it comes to retracing public lands surveys. We are grateful for the education and we are happy to see his contribution to land surveying recognized at the national level.

First place in the category “Best Magazine” was a three-way tie:

California Surveyor, Issue #173

California Surveyor, Issue #175

The Pennsylvania Surveyor, Summer 2013

As always, we thank our contributing writers for award-winning content and our dedicated staff, Crissy Willson in particular, for crafting the premier magazine of its kind.

Orienteering

Wikipedia defines orienteering as “a family of sports that requires navigational skills using a map and compass to navigate from point to point in diverse and usually unfamiliar terrain, and normally moving at speed.” This spring I attended an orienteering hiking event in the Sacramento area. This was my first experience with orienteering and I’m sharing it now for two reasons. First, it was a lot of fun. If you like hiking and you like maps (and what surveyor doesn’t?) you’ll like this sport. And second, I think orienteering has potential as a professional recruitment activity. Read on and see if you agree.

The event was sponsored by the Gold Country Orienteers (GCO) and it took place in a Sacramento County park next to the American River. It was a lovely Sunday morning and the temperature was just right for walking. Wildflowers were in bloom and the grass was green as could be. Butterflies and dragonflies greeted me in the parking lot. “This is my kind of sport,” I thought as I queued up at the trail head. GCO volunteers staffed a small folding table where participants registered, signed liability waivers, rented compasses, and got course maps. I didn’t do a head count but there was clearly a healthy turnout; orienteering is more popular than I would have guessed. One fellow I met in line told me this was his first time. “Me too,” I said. I asked him what attracted him. He said he liked the low-tech approach of learning how to use a map and compass to find his way. No batteries required. I could relate.

For the \$7 admission fee participants got a small topographic map showing courses of varying difficulty: white for beginners

(that was me), orange for intermediate, and red for advanced. We also got a punch card with a list of control points along each route. The control points were plotted on the map and marked in the field by colorful nylon baskets. Along with a basket, each control point was equipped with a uniquely-patterned paper punch. My experience went like this: A GCO volunteer made note of my name, route and starting time. I used the map and compass to navigate the course, and along the way I found the control points and used the paper punch at each point to punch my card. At the end of the course a volunteer collected my card and noted my finishing time. My course was about one mile long. Times were posted the following day on the GCO website. You wouldn’t know it by my performance, but orienteering is a competitive sport. The winner completes the course and visits all the control points in the shortest amount of time. Winners go on to regional, national, and international competitions. GCO staff told me to be sure and check-out before leaving. “If you don’t check-out,” they said, “we’ll assume you are lost or injured and we will come looking for you.” I made a point of checking-out. At least one person on duty that morning had search and rescue experience.

Some of participants were much more serious than I was. As I dawdled along, enjoying the scenery and making notes for this article, others ran full tilt over hill and dale to complete the course in minimal time. I was so absorbed in the natural beauty along the river that I forgot to look for two of the control points and so finished with the designation “DNF”; Did Not Finish. I’ll do better next time. Everyone seemed to be enjoying the event in their own way. Many orienteers navigated the courses with their doggies trotting alongside. What a way to walk the dog! A single mom

Continued on next page

Continued from previous page

and her teenage son were having a wonderful time getting lost and found together. There were couples who, like me, were out for a leisurely stroll, and other couples who were in it for the competition; they moved quickly and had their game faces on. Families were out in numbers too. Orienteering is a good family activity if the kids who are old enough to hike but still young enough to want to hike with their parents. I also saw several groups of young people. As I was leaving, a busload of teenagers from a high school ROTC program was preparing to hit the trail.

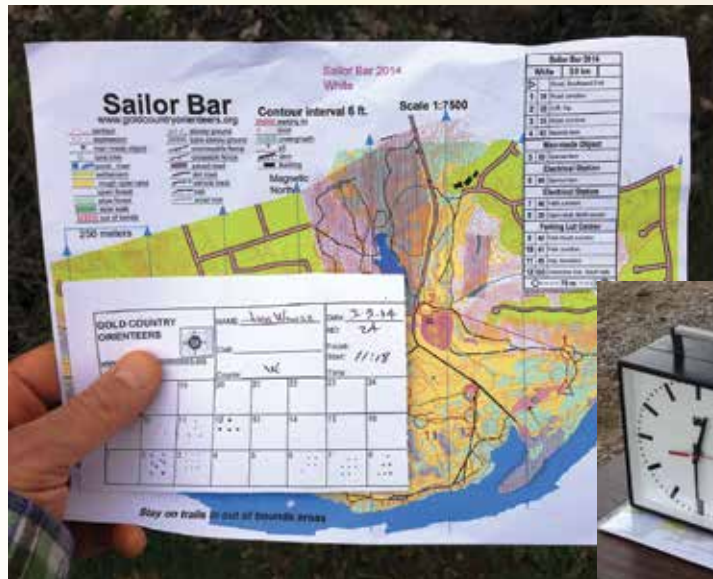
If this sounds like fun, it is. Give orienteering a try. If you like it, you might consider encouraging your CLSA chapter to sponsor an event. Orienteering could be a great way for your members to interact with local youth groups and spread the word about land surveying as a career choice. You can learn more by Googling on the web or visiting Orienteering USA at: <http://www.us.orienteering.org/> ❖



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Topo map and punch card



GCO volunteers timed the competitors

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By: Rolland Vandevalk, PLS

Rolland Van De Valk has 28 years of experience and is currently serving as senior land surveyor/project manager at Diversified Project Services International, Inc. in Bakersfield, CA. Rolland has been a member of CLSA since 2002.

President's Message

CLSA: It's Worth the Investment!

A Look at the Value of Membership in California Land Surveyors Association

Let's face it, these days we are all trying to stretch a dollar and are reevaluating where we spend our money. With busy schedules and greater demands on financial resources you may be asking, "Why should I join CLSA or renew my CLSA membership? What's in it for me?" The answer to these questions will be different for everyone. Some will look at the representation that CLSA offers and that will be the reason they join. Others may be looking for a specific member benefit such as discounts on education or publications and that will be their reason for joining. I would like to take this opportunity to review a few of the benefits of membership and highlight some of the good work being done by our members.

Legislative Advocacy

CLSA has an active legislative program with a committee of over 20 members reviewing legislation and a legislative advocate (lobbyist) that keeps a watchful eye on the best interests of the profession. Over the years, CLSA has been instrumental in enacting legislation to advance the profession. One such success is expanding the surveyor's right-of-entry to the California Penal Code as well as the Business and Professions Code. The surveyor's right-of-entry is a privilege that CLSA is committed to protecting. To help educate law enforcement agencies, homeowners and the public about right-of-entry, CLSA has developed an informational brochure that is available for members. For more about right-of-entry, check out the article on page 16 written by CLSA's Legislative Advocate, Ralph Simoni.

Education

Although California is one of the few states that does not have a mandatory continuing education requirement, CLSA remains dedicated to providing quality education to the profession.

Each year CLSA hosts an annual conference providing over 30 hours of education including technical and business sessions. In addition to the annual conference, CLSA offers a variety of workshops throughout the year and to provide members with an even more convenient way to obtain education, CLSA offers webinars.

For information on upcoming events, visit the CLSA website at CaliforniaSurveyors.org

Monument Preservation

Monument preservation has continued to be an issue in California. The CLSA Monument Conservation Committee has developed resources including a brochure which provides information regarding the laws and regulations for preserving both horizontal and vertical control monuments. The committee is now developing a speaker's kit with script and PowerPoint presentation that members can use to provide information to agencies regarding monument conservation.

Public Outreach

Whether it be representing Land Surveyors to other professions, such as the GIS community, or creating awareness in local communities, CLSA members continue to do a great job in public outreach.

Great examples of recent public outreach by members include the 1,000 Flags (see article on page 18) and the representation by members at the Physics, Science, and Math Days (see article on page 29).

Discount Programs

Besides providing resources and intangible benefits such as those above, CLSA also provides members with tangible benefits so that they can realize an actual savings with their membership. If members take advantage of offers such as 50% off publications, \$100 off workshop registration, and discount programs such as Office Depot, it is clear the **membership doesn't cost – it pays!**

Call to Action

The success of an association is dependent on the membership. Financial support through annual dues is important, but even more critical is participation by members. If you are not already a member of CLSA, both at the state and Chapter level, I encourage you to join today! ♦

Kids Korner

Do you have a picture of a "junior surveyor" in your family that you would like to share? Send it in and we will put it in the Kids Korner.



My best Crew Chief:
Alex Schillinger, age 8, Son of Max Schillinger, LS7969 and Grandson of Ed Schillinger, LS3797

What Were They Thinking?

Submitted by Robert Reese, PLS

Day of survey: Point set in parking space, point surveyed, target painted, head for office.

1 Week later: stopped by to recon, found new sealed parking lot. Helpful striping crew replace the cross† "juuuust a little outside". I wonder when the flight was made....



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By: Mike Durkee and Jennifer Chavez

Mike Durkee is a Land Use partner at McKenna, Long & Aldridge LLP in San Francisco representing developers, public agencies and other stake holders in Land Use entitlement and litigation matters at both administrative and judicial levels.

Jennifer Chavez is a real estate lawyer at McKenna, Long & Aldridge LLP representing buyers, sellers and developers of land in all manner of real estate matters including purchase and sale transactions and entitlement deals.

The Basics About Deeds in California

Surveyors review and inspect deeds in the course of performing their professional duties and are often instrumental in preparing the technical components of a deed, in particular the legal description. This article provides a general overview of the types of legal instruments that can be used to convey real property in California.

Generally, California law requires that the conveyance of real property occur in a written instrument that names a grantor, a grantee and identifies the property being transferred. (Cal. Civ. Code, § 1091.) The deed must be signed by the grantor and it must be delivered to and accepted by the grantee. (Cal. Civ. Code, § 1054; *Reina v. Erassarrent* (1949) 90 Cal. App.2d 418, 426.) In California, most such conveyances occur by grant deed or quitclaim deed. California Civil Code section 1092 sets forth a form of grant deed that may be used to transfer title to real property, but it is not the form typically used in practice. There is no requirement that a deed be recorded (*Williston v. Yuba City* (1934) 1 Cal.App.2d 166, 170-171), but recording is obviously a best practice. To be recordable, the grantor's signature on the deed must be acknowledged. (Cal. Civ. Code, § 1195(b); Cal. Gov. Code, § 27287.)

1. Grant Deeds. A "grant deed" is the most common instrument used to convey real property and should always be used when a conveyance is for consideration (i.e., money) because it includes certain implied warranties that are absent in a quitclaim deed. The operative term in a grant deed is the word "grant" (Cal. Civ. Code, § 1092) and is typically used as follows: "Grantor hereby grants to Grantee that certain real property located. . . ." A grant deed conveys the grantor's entire interest in the property, including any interest that the grantor might acquire after the date of the grant deed, unless it is clear that the grant is for a lesser estate, such as an easement. (Cal. Civ. Code, §§ 1105, 1106.)

Conveyance by grant deed includes two implied covenants. The first implied covenant is that prior to execution of the deed, the grantor did not convey the property, or any right, title or interest therein, to any other person. (Cal. Civ. Code, § 1113.) This is not a covenant that the grantor actually owns the property he or she is purporting to convey to the grantee (though that covenant will be implied in any purchase agreement), but only a covenant that the grantor has not previously conveyed the interest covered by the grant deed to a third party. As noted above, the grant deed conveys any interest acquired by the grantor after the date of the grant deed. (Cal. Civ. Code, §§ 1105, 1106.) Therefore, if the grantor does not actually hold title to the property at the time of the grant deed, but acquires title later, that title is deemed to have been conveyed to the grantee by the grant deed. (Id.)

The second covenant implied in a grant deed is that the property is free from encumbrances made by the grantor or any person claiming under him or her. (Cal. Civ. Code, § 1113.) This is not a covenant that the property is free and clear of all liens and encumbrances, but only free of encumbrances made by the grantor.

These two implied covenants are very limited in scope and owners of real property in California typically obtain title insurance to cover the gaps. Title insurance, among other things, insures that fee title is vested in the grantee and that the title is encumbered only by specified matters excepted in the title policy. With title insurance, a grantee could pursue claims against the title company, rather than the grantor, for any defects in title.

2. Warranty Deed. The rarely used "warranty deed" is the second type of deed that can be used to convey property in California. In addition to the implied warranties in a grant deed, a warranty deed expressly warrants the title to property and the quiet possession of the property to the grantee. (Cal. Civ. Code, § 3304.) If a third party claims a right to the title or to possess the property (such as pursuant to a lease), a grantor that conveys by warranty deed would be required to defend that claim. (Id.) These express warranties run with the land and are not personal to the grantor and grantee. (Cal. Civ. Code, §§ 1462, 1463.) Consequently, the warranty deed grantor remains liable to subsequent owners of the property that assert claims relating to title or quiet possession that arose from the grantor's ownership of the property. (Id.) Most grantors are unwilling to make these broad and long lasting express warranties, and grantees do not need them because of the availability of title insurance, though it is common in California for a seller of real property to purchase a basic policy of title insurance for a buyer as part of a purchase and sale transaction.

3. Quitclaim Deed. Another common way to convey property in California is by quitclaim deed. A quitclaim deed, unlike a warranty deed, does not include any implied covenants at all. (*Platner v. Vincent* (1924) 194 Cal. 436, 444.) It is a conveyance only of whatever right, title and interest the grantor had at the time the quitclaim deed was executed and delivered. (*Leggio v. Haggerty* (1965) 231 Cal.App.2d 698, 712-713.) This form of deed is frequently used where no money is passing hands, such as in a deed between family members or where deeds are provided to clear a cloud on title. The operative term in a quitclaim deed is "quitclaim" and is typically used as follows: "Grantor hereby remises, releases and forever quitclaims to Grantee certain real property. . . ." As with a grant deed, grantees who acquire title by quitclaim deed frequently obtain title insurance to insure the validity of their conveyance.

In conclusion, there are three types of deeds that can be used to convey property in California: (1) the grant deed, which is used in most arms-length transactions, (3) the quitclaim deed, which is used in transactions where it does not make sense to make implied warranties of any kind, such as between family members, and (2) the warranty deed which is almost never used because of the express warranties that are incorporated into it and unnecessary in light of the availability of title insurance. ❖

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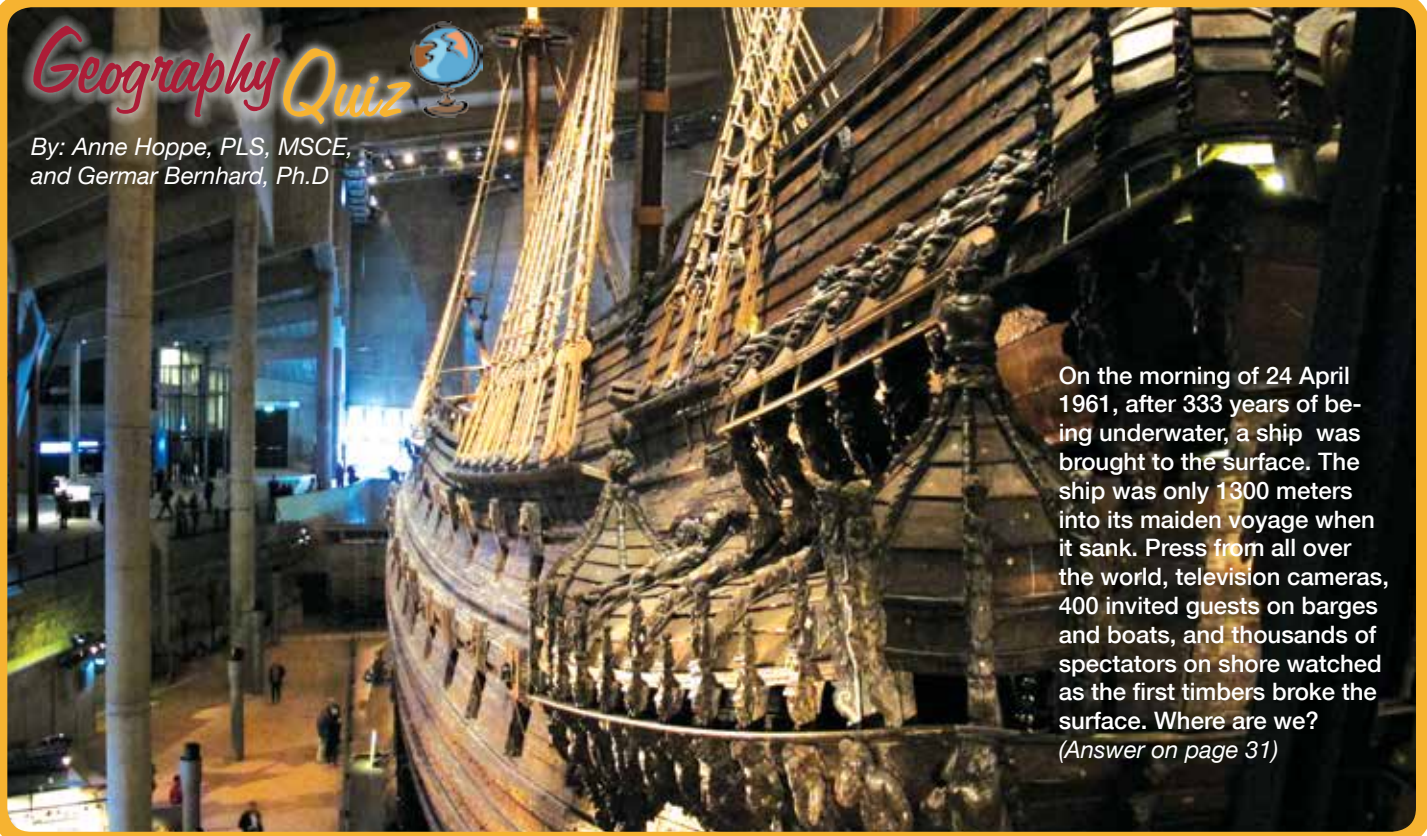
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Geography Quiz

By: Anne Hoppe, PLS, MSCE,
and Germar Bernhard, Ph.D



On the morning of 24 April 1961, after 333 years of being underwater, a ship was brought to the surface. The ship was only 1300 meters into its maiden voyage when it sank. Press from all over the world, television cameras, 400 invited guests on barges and boats, and thousands of spectators on shore watched as the first timbers broke the surface. Where are we?
(Answer on page 31)



By: Jack R. Iriart, CSP

Jack is the Safety Director for Diversified Project Services International. He is a Certified Safety Professional with over 26 years of experience in the construction, electrical, insurance and law enforcement professions. Jack has held a seat on the American Society of Safety Engineers (ASSE) Board of Directors as the Regional Vice President of Region 1. Jack was chosen as the Safety Professional of the Year by the Bakersfield ASSE Chapter in 2000. He was also chosen as the Safety Professional of the Year by ASSE Region I in 2009. Jack has been a co-instructor for the "Safety and Risk Management" certification program at California State University, Bakersfield since 1995.

Do I need an Injury and Illness Prevention Program (IIPP)?

This question is one that gets asked over and over, and rightly so. Since there are many different situations that come up, most people want to make sure they are doing the right thing when it comes to complying with the State of California regulations, or in other words Cal/OSHA. Cal/OSHA is the enforcement arm for these regulations. The regulations state that every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (IIPP). You can't get much clearer than that if you are an employer. Which brings up the next question, "Am I an employer"? This is where the confusion comes in for a lot of people. So, in an effort to clarify whether you are an employer or not, here is the definition of "employer" used by Cal/OSHA.

The term "employer" as used in the Cal/OSHA Act includes any person or corporation, the State and every State agency, every county or city or district and public agency therein, which has any person engaged in or permitted to work for hire, except for household services.

This applied to all businesses, regardless if they had only one employee or many employees. Here are some frequently asked questions that should help you decide whether you need an Injury and Illness Prevention Program.

Q I am a One-Man shop and only need help occasionally. Do I need an Injury and Illness Prevention Program?

A Businesses with only seasonal or intermittent employees are required to develop an Injury and Illness Prevention Program.

Q If I use help from a temporary agency, aren't they categorized as an independent contractor?

A According to the IRS 20 Rule, they are classified as an employee. If you Google "IRS 20 Rule" you will find a worksheet that establishes the working relationship of an employee compared to an independent contractor. Cal/OSHA follows the same criteria.

Q Doesn't it cost a lot to have someone write an Injury and Illness Prevention Program for you?

A Cal/OSHA has many model Injury and Illness Prevention Programs that are fairly easy to use. They can be found at www.dir.ca.gov/title8/3203.html. Just click on 3203 and you will find a list of the model Injury and Illness Prevention Programs. If you elect to use an outside consultant, it is best to use a Certified Safety Professional or CSP.

Q What is the fine if Cal/OSHA cites me for not having an IIPP.

A If an employer did not have an Injury and Illness Prevention Program, Cal/OSHA could assess a \$7,000 fine.

If there is ever any question as to whether you need an Injury and Illness Prevention Program, it is always best to develop one. Once you develop your Injury and Illness Prevention Program, you need to make sure that it contains the eight elements required to satisfy the regulation. If your Injury and Illness Prevention Program is missing one of the elements, Cal/OSHA will cite you for not having an adequate program. Not having an Injury and Illness Prevention Program, or not having an adequate Injury and Illness Prevention Program has been the most cited regulation since 1991. 25% of all inspection by Cal/OSHA ends with the employer being cited for not having an adequate program.

So, here are the eight elements and a brief description of what it is looking for.

1. Responsibility. Identify the person or persons with authority and responsibility for implementing the Program. The individual needs to be listed by name. Just listing the individual's title, like Safety Manager, is not adequate.

2. Compliance. Include a system for ensuring that employees comply with safe and healthy work practices. The regulation states that substantial compliance with this provision includes recognition of employees who follow safe and healthful work practices. Many employers feel that having an incentive program is the best way to satisfy this provision. In actuality, listing the employee's names in a newsletter or posting their names on the bulletin board has worked. Having a company disciplinary program is another provision suggested. Ensuring that employees comply with your company's safe and healthful work practices are the key words in this provision.

3. Communication. Include a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. Having a reward system for turning in worksite hazards works well. Baseball caps, hard hat decals or gift cards have always been an employee favorite. This provision needs to be documented and maintained. The exception to this provision is for employers

Continued page 14



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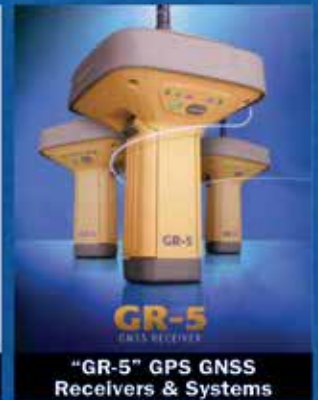
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Postcards



We recently spent a few days at our timeshare in Zephyr Cove near the east shore of Lake Bigler. My son, Dominic, was hiking and found a copper bar set in rock. It is a perfect terrestrial point that can see from State-line Highway 50 (to the south) and Cave Rock (to the north). Views from the hill top were breathtaking!

Pictured: My sons Dominic and Joe with grandchildren Dominic, Jr., Anthony and Mathew atop the rock with the control point. Submitted by Phil Danskin, PLS





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If you have any questions, comments or if you would like to be added to our mailing list, please feel free to email us:

Marco Castaneda – Conference Chair: neda209@mail.fresnostate.edu

Luz Garcia- Conference Co-Chair: luz931@mail.fresnostate.edu

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Continued from page 12

Do I need an Injury and Illness Prevention Program (IIPP)?

with less than 10 employees. It states that employers shall be permitted to communicate to and instruct employees orally.

4. Hazard Assessment. Include procedures for identifying and evaluating workplace hazards including scheduled periodic inspections to identify unsafe conditions and work practices. The inspections should have a frequency attached to them. A job safety analysis (JSA) is a good tool for this provision.

5. Accident/Exposure Investigations. Include a procedure to investigate occupational injury and illnesses. Your company must have a written process to satisfy this provision.

6. Hazard Correction. Include methods and/or procedures for correcting unsafe and unhealthy conditions, work practices and work procedures in a timely manner based on severity of the hazard. The expectation is that all hazards will be corrected as soon as possible.

7. Training and Instruction. All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety and health practices.

8. Recordkeeping. All your employees must be trained on the content of the Injury and Illness Prevention Program and given a copy. It is also best to have your employees date and sign a receipt form that they did in fact receive a copy. All training, inspections, hazard corrections and accident investigations must be documented. When it comes to satisfying any regulatory agency, always remember this statement. "If it is not documented, it never happened." Injury and Illness Prevention Programs are good business. They help protect your employees and help protect your valuable assets. ❖

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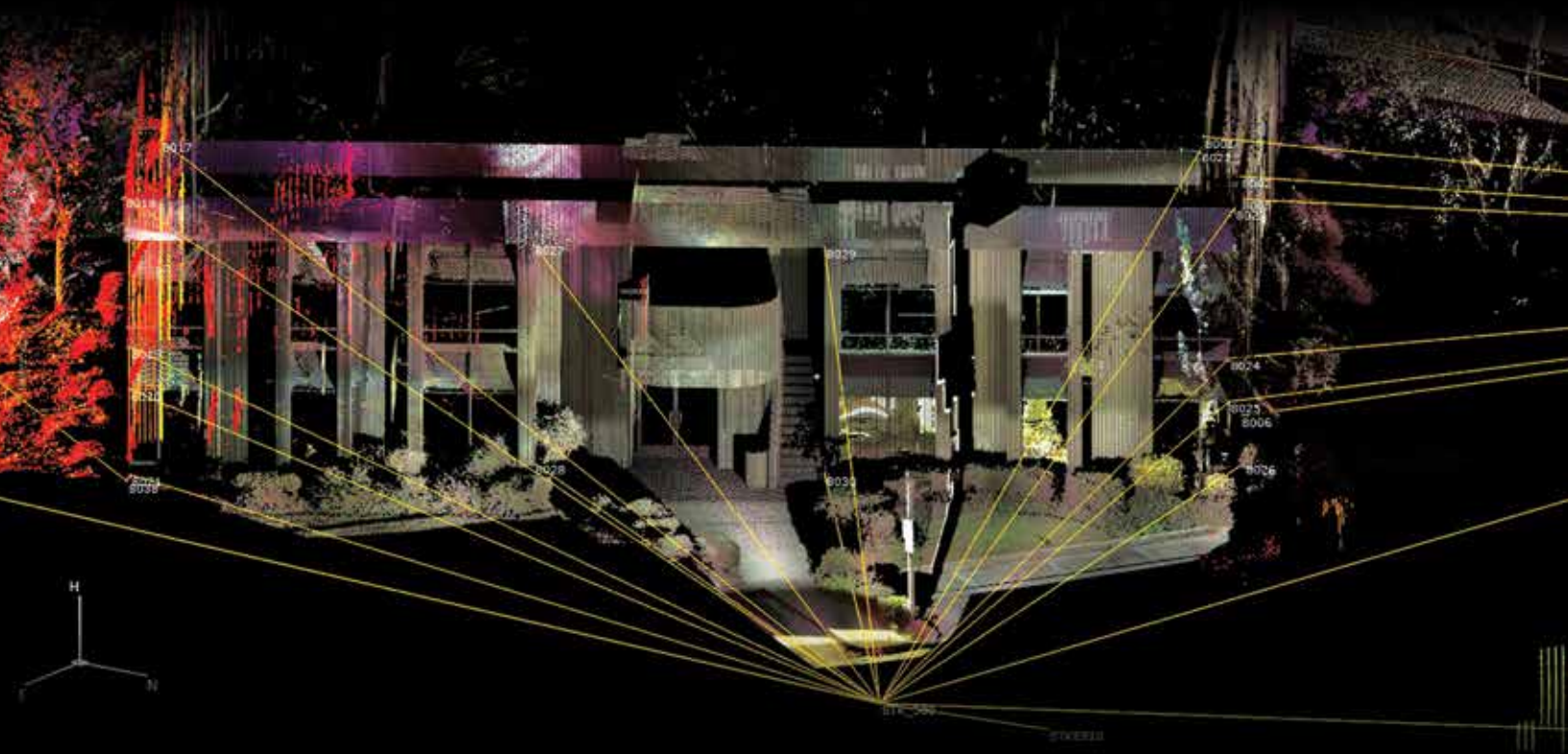
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Surveyor Right of Entry

The Intersection of Legislation and the Real World



Frequently, the activity of the California legislature appears to deal in the theoretical and abstract realm, rather than everyday matters of concern to the public or, more specifically, matters of concern to the land surveying profession. However, CLSA was recently involved in an issue relating to the long-standing issue of a surveyor's right of entry and matters surrounding the much-publicized High-Speed Rail Project in the Central Valley.

As most readers are aware, there is considerable controversy surrounding the creation of a high-speed rail line linking various cities in Northern California with the major population centers in Southern California. Although there are numerous questions regarding financing, ridership, etc., there is particularly strong negative sentiment in the Central Valley farm community that will serve as the first phase of the high-speed rail route. Many of these farmers have owned the land for multiple generations and claim that the high-speed rail is inconsistent with the agricultural nature of the land and in many cases causes the land to be less productive.

This local groundswell of negative sentiment was ignited by allegations that employees and contractors of the High-Speed Rail Project are entering private property without notification, including land surveyors. Adding insult to these allegations were anecdotal comments that land surveyors and others entering upon farmland were instructed by the High-Speed Rail Authority to neither inform the land owners of the purpose of their entry nor for whom they worked for. In response to these allegations, legislation was introduced that threatened the long-standing and important right of land surveyors to enter private property to exercise their professional land surveying activities.

Senate Bill 904 (Vidak) proposed to add a new section to the Public Utilities Code governing the High-Speed Rail Authority to require any employee of or any contract employee to the Authority to comply with *two conditions* "before entering on to any privately owned property to perform a survey or inspection or for any other purpose." (Emphasis added). These two conditions are as follows:

1. *Identify himself or herself to the property owner as an employee of the authority or a contractor of the authority working on the high-speed rail project; and*
2. *Obtain the consent of the property owner to enter upon the property.*

Because these requirements were "notwithstanding any other law," SB 904 would trump the existing provisions of the California Civil Code and Penal Code that permit a land surveyor right of entry.

CLSA wrote an opposition letter to SB 904 and testified in opposition when the bill was heard before the Senate Transportation and Housing Committee. The CLSA letter stated in pertinent part that:

"Unfortunately, Senate Bill 904 undermines this long established statutory recognition of a land surveyor's right to enter property to render their professional services in the single instance of the High-Speed Rail Authority. CLSA believes there is no justification for

singling out a specific project or work of improvement to be subject to a different standard than is currently provided for in the Civil Code and Penal Code as outlined above. In fact, a selective project by project exclusion from the long-established right of entry would eventually erode the ability of a land surveyor to perform their lawful duties.

In order to avoid the erosion of a land surveyors right of entry, CLSA respectfully requests that Senate Bill 904 be amended to exclude land surveyors from its provisions and thereby perpetuate the right of land surveyors to perform their lawful services as currently provided in both the Civil Code and the Penal Code. This would preserve the historic statutory recognition of the rights of land surveyors and extend this right that benefits both public and private landowners."

Although SB 904 was defeated in the Senate Transportation and Housing Committee by a vote of 1 Aye to 7 Noes, this legislation provides an opportunity to review the important right of entry conferred on the land surveying profession.

Both the Civil Code and the Penal Code contain authority for a licensed land surveyor to enter the property of another in order to conduct valid land surveying activity. Specifically, **Civil Code Section 846.5 establishes the legal principle** that surveyors are permitted to enter upon land for their lawful purpose as follows:

(c) *The right of entry upon or to real property to investigate and utilize boundary evidence and to perform surveys, is a right of persons legally authorized to practice land surveying and it shall be the responsibility of the owner or tenant who owns or controls property to provide reasonable access without undue delay. The right of entry is not contingent upon the provision of prior notice to the owner or tenant. However, the owner or tenant shall be notified of the proposed time of entry where practicable.* (Emphasis added)

As evidenced by the highlighted statutory language, the right of entry is not conditioned upon prior notice or permission, but the land surveyor is required to provide notice of the proposed time of entry if it is practical. Furthermore, the landowner is legally bound to provide access to the land surveyor for performing lawful survey activity. Certainly, a land surveyor would not be entitled to refuse to inform the land owner or tenant of the purpose for entry or on whose behalf they sought entry to their land as alleged in the high-speed rail example above.

In addition to the legal principle established in the Civil Code, CLSA successfully obtained an amendment to the Penal Code several years ago that reinforces the legal principle and, most importantly, can be used by land surveyors when their entry is challenged by law enforcement. The Penal Code amendment was predicated upon the experience of land surveyors that law enforcement responding to a complaint by a land owner or tenant only has access to the Penal Code and therefore a cross reference to the Civil Code right of entry principle was necessary.

Continued on next page

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Penal Code Section 602.8 establishes the legal principles for trespass, except for specified activities in subdivision (c). Subdivision (c) (4) specifically exempts the lawful practice of land surveying as follows:

(4) Any person licensed pursuant to Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code who is engaged in the lawful practice of land surveying as authorized by Section 846.5 of the Civil Code.

The combination of the Civil Code legal principle and the Penal Code exemption from trespass provide a unique and very important right of entry for land surveyors to practice their profession so long as they exercise prudent conduct.

To complement the Civil Code and Penal Code, the Land Surveyors Act contained in the Business and Professions Code references the right of entry in Section 8774. In pertinent part, subdivision (a) reads identical to the Civil Code as follows:

(a) The right of entry upon or to real property to investigate and utilize boundary evidence, and to perform surveys, is a right of persons legally authorized to practice land surveying, and it is the responsibility of the owner or tenant who owns or controls property to provide reasonable access without undue delay. The right of entry is not contingent upon the provision of prior notice to the owner or

tenant. However, the owner or tenant shall be notified of the proposed time of entry where practicable.

To assist the land surveying profession to understand and properly exercise the right of entry, CLSA provides a toolkit of information. First, CLSA has prepared an informational brochure entitled “The Land Surveyors Guide to Right of Entry” that defines the right of entry and provides a list of suggested conduct. This valuable “how to” guide is available for CLSA members on the website. Secondly, CLSA has prepared a sample “Right of Entry Notice” door hanger or property tag that can be used to advise a landowner of possible land surveying activity on their property. The notice not only informs the landowner of possible survey activity, but informs the landowner that the right of entry authority for a licensed land surveyor is specifically permitted by California law. This valuable notice is available for order from CLSA – see CLSA Publication Order Form on page 39 for ordering information.

As stated in the CLSA publication “A Land Surveyors Guide to Right of Entry,” the right of entry is “a privilege and with it comes responsibility. Acting professionally, using good judgment, respect for privacy, courtesy and ethical considerations are essential for maintaining this privilege.” In order to preserve this important privilege, land surveyors must comply with the statutory framework and continue to exercise prudent and reasonable judgment in everyday situations. ❖



ONE THOUSAND FLAGS

By: Ron Nelms, PLS

With great respect and gratitude, the California Land Surveyors Association and the land surveying profession honor those courageous members of the armed forces who have died for our freedom. The members of the Bakersfield Chapter of the California Land Surveyors Association are proud to have been part of this spectacular display celebrating our remembrance and appreciation for those patriots that have served us all bravely and honorably.

Surveyors are often asked to ‘flag’ the property line in order to memorialize its location. Often times its purpose is to give a visual to the observer to know their limits. But it also grants the possessor the confidence of knowing that they can enjoy the land within the marked boundary. The American flag is a symbol of our great nation and the assurance of the freedoms we possess. Further it reminds us of those patriots who have contributed to ensuring that liberty. It is to those people who stood in harm’s way that we owe our gratitude.

In late 2013, Bakersfield Breakfast Rotary Club (BBRC) decided to launch a lofty goal of placing one thousand flags at River Walk Park in Bakersfield over Memorial Day weekend (Saturday May 24th to Monday May 26th.) The 32 acre park was built in 2006 and utilizes the nearby Kern River to route water through the park where two lakes serve as recharging ponds. The west lake is approximately 2 acres in size and supports recreational activities such as picnicking and fishing. It is around this lake that the Event Coordinator, Becky Brooks, wanted the flags to be placed. Knowing that I am land surveyor, Becky approached me and asked me to do the layout portion of the project. Being a BBRC member myself, I enthusiastically told her I would take care of it.

Her plan was to place the flags in a four-hour window on Saturday morning May 24th. Realizing that we could not do the layout and place the flags in so short of a time period; we agreed that on Friday a white paint dot would be placed

in the grass identifying the location. On Saturday others would follow behind placing the flags on the dots.

Realizing the enormity of the project and wishing to share the pro-bono spoils with my colleagues, I called on fellow members of the Bakersfield Chapter of CLSA.

At our next meeting in February, the subject was brought up and with enthusiasm to match my own, they agreed to assist. The plan was for my firm to develop an “as-built” drawing of the area and design the layout; while Rolland Van De Valk would organize other firms to provide field crews. If all went well, we felt four crews could do the layout within three to four hours. The next task was getting together with another BBRC member, Bill Black, a civil engineer, to discuss the material to be used to place the flags. The plan was to place a 36” long rebar twelve inches into the ground and then place a pole over the rebar. This immediately raised the proverbial red flag of an inquiry of how deep the irrigation lines were and when sprinklers would be turned off so as to not obliterate the dots. Becky, Rolland and I met with employees of the Bakersfield Recreation and Parks District on February 12th to discuss the logistics. We found out that the lines were 6 to 12 inches deep and they would accommodate our request to turn the lines off by 6am Friday morning.

As we walked through the park it became apparent that most of the 500 sprinkler heads were not visible. So we requested the Parks Department to place a pin flag at each sprinkler head. This would not only assist us in a proper “as-built” of their location; but also their location would give us a better idea of the irrigation lines proximity. Not wanting the pin flags to stay for an extended period of time, a date was set where Parks would place them and once located we would pull them. Since they weren’t sure of their location they had to turn each line on and then place the marker

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next to the head. Our control was set by placing a rebar at the north end of the site, a cotton spindle at the east end and a scribed 'x' at the west end. Coordinates were assumed and elevations were carried. Using GPS methods, the crew located the sprinklers, walkways, trees along with drip diameters, picnic areas, benches, light poles, irrigation valves and anything that didn't move. We also located the high water mark of the lake along with the top of bank. The reason for this, of course, was so that a proper design could be determined from the existing features.

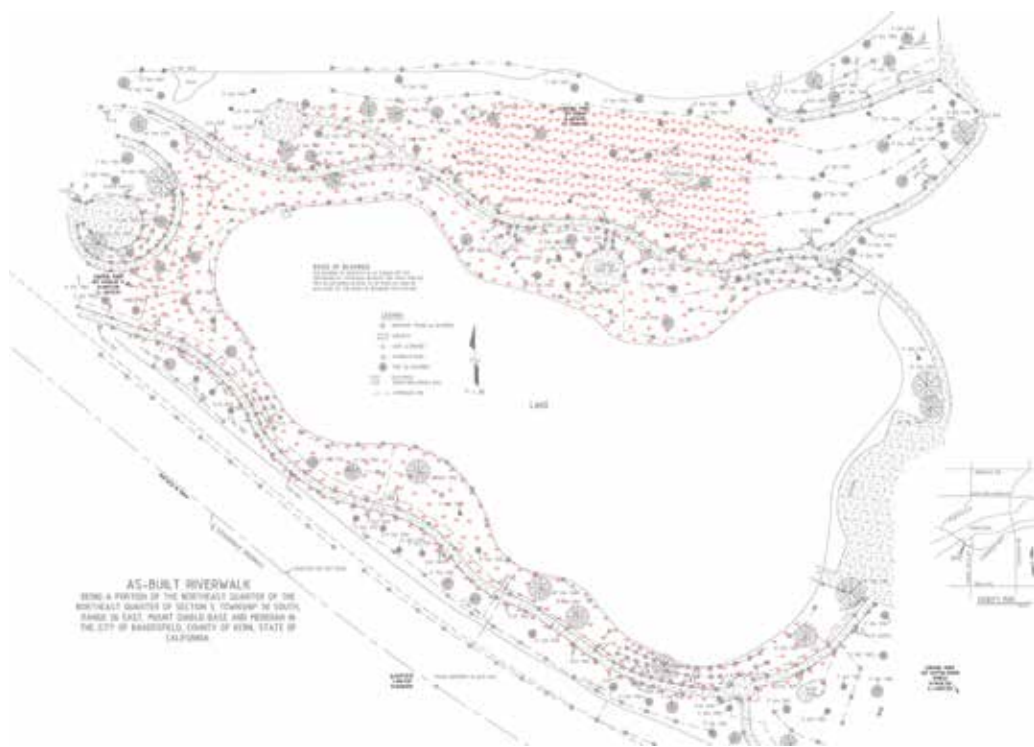
In fact not only were the lines not where the plans indicated but the walkways, benches and picnic tables were in different locations as well. My experience is that we trust but verify the plans. In this case, I am glad we did.

After the "As-built" drawing was completed, I met with Becky to go over where she wanted the flags placed. At that meeting I found out that a stage was going to be set up to accommodate a ceremony on Memorial Day where several dignitaries were going to speak which included political leaders, the Sheriff, Police Chief, and several organizations that honor our veterans. Further, there was going to be a performance by the Golden Empire Drum and Bugle Corps.

We decided that the stage would be set at the northeast side of the lake and four hundred flags were placed in 7'x10' array to the west with the east end being concave. The idea was to draw the prospective observer from the stage area into the midst of the flags where they would experience a feeling of comfort.

East of the lake lies a pavilion and porch that allows the spectators to view the entire lake. The idea was to station 100 flags around the lake at 15' intervals. Also, we were to position 250 along the walk ways, picnic areas and benches. These flags would also be at 15' intervals but

be staggered on each side of the walkway. The idea was to encourage the eyes to shift back and forth thus granting a sensation of walking along a path of remembrance of those who have fallen. The remaining 250 would be located in between the walkways and the lake urging participants to pause and reflect. Point numbers were assigned to each flag being careful to keep them in sequential order for rapid



Flag Points

At the same time, I visited the Public Works Department at the City and found a set of plans indicating the irrigation design. Like most improvements, the plans were painstakingly designed with the greatest of detail only to be disregarded and installed in a fashion the field personal desired.

Continued on next page

stake out. The drawing and text files were forwarded to Rolland. He then distributed assignments to DPSI, Dewalt Corporation, and QuadKnopf for the staking of the dots.

Friday morning arrived and five crews were given 200 dots apiece. GPS units and field crews scattered throughout the park to place their respective points. On Saturday, I arrived at 6am to make sure the sprinklers had not been turned on thus eliminating the dots. Fortunately, they had not. Also, I wanted to make sure the dots were dispersed appropriately and did not end up under trees or too close to features such as benches or light poles. At 7am, fifty or more volunteers arrived ready to drive rebar into the dots. An impromptu lesson was given to hold the hammer at the end of the handle and to pick up the rebar from the center. Instructions were disseminated that if they felt a 'bounce' it probably meant they were on top of an irrigation line and they should simply move the rebar a few inches. By 10am all the flags were placed and I must admit it was a sight to behold. Other observers began commenting on the spectacular view and asked questions of how it was designed. This gave me the opportunity to explain the process and to brag about my colleagues at the Bakersfield Chapter of CLSA.

I returned Monday for the ceremonies with my wife who is a veteran. She may be partial but she gave it high accolades (which is extremely important to me). While walking along the pathway, I saw several veterans and active-duty military who were misty eyed. Families were taking pictures, some laid blankets in the midst of the flags to take it all in. Bands played and dignitaries spoke in remembrance. Later videos and photos were placed on the internet. Local television stations covered the event and encouraged participation. Breakfast Rotary continues to receive positive feedback on the event and plans to do it again next year. It was clearly a successful endeavor and I wish to thank Rolland Van Der Valk, Aaron Byrd, Kristie Achee and their respective firms for their involvement. Even though I am not a vet, it was a great honor to participate by giving of my services to such an event that paid tribute to those who gave the ultimate sacrifice. ❖



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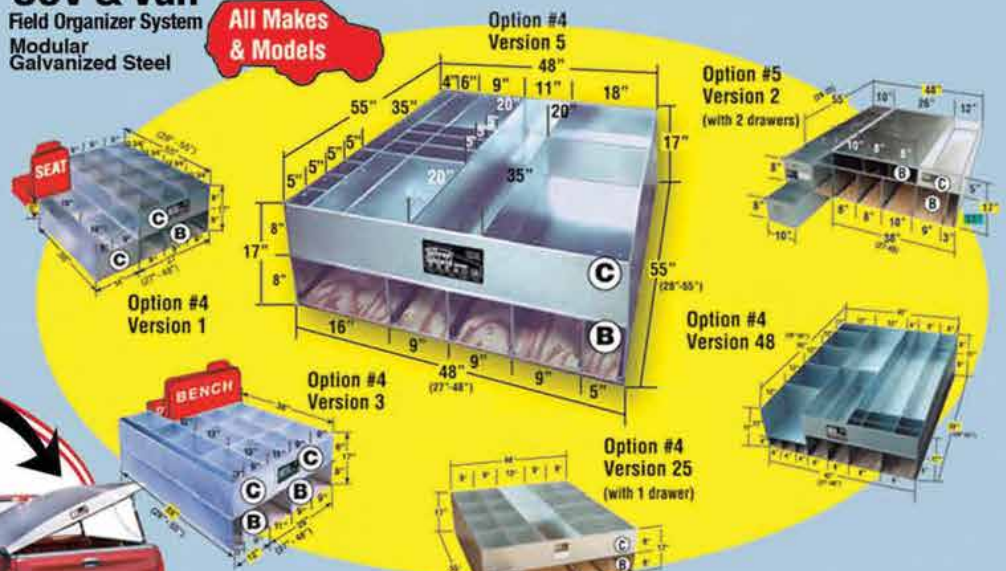
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Violin Building

Following in Different Footsteps

From a young age I have had a fascination with music and stringed instruments of all types. This interest gradually developed into the psychological disease of MIAS (Musical Instrument Acquisition Syndrome). Note: MIAS can never be cured but the symptoms can be temporarily relieved by buying another instrument. I started with the guitar, then fiddle, and finally mandolin. Celtic music and other types of folk music are my main interest.

The internet is to blame for my pursuit of becoming a Luthier. (Luthier is a word originally applied to lute builders but has come to be mean makers of stringed instruments.) It was easy to find information on how violins are made. In fact, the amount of information can be overwhelming and contradictory- just like surveying. Knowledge previously found in obscure books and with secretive makers is available to all with a few mouse clicks.



Kevin Akin, PLS

I located a violin building workshop through the internet that would accept absolute beginners. My previous woodworking experience was limited to house repair and cutting down trees. Not exactly the best preparation. I bought some traditional violin wood (spruce and maple), tools, and attended a workshop for two weeks. My first violin was based on a Guarneri model from 1742. The next year, I completed most of the violin in three more weeks at the same workshop. I was hooked on violin making when we put strings on the violin and played it for the first time. There is something magical about carving wood, gluing it together, and making music with an instrument that you built.

The internet also provided information about violin building schools in the US and around the world. The nearest school to California, and my family, was in Salt Lake City, Utah. The Violin Building School of America (VMSA-<http://www.vmsa.net/index.html>) was started in 1972 by a German immigrant Peter Paul Prier. The current owner and teachers are graduates of the school. Between 25 and 30 students attend and build instruments at their own pace. Besides time spent making violins, students also attend history, making, and drafting classes. Lessons are also provided by an excellent teacher. It takes 3 to 4 years to graduate after completing 7 violins and a cello. Most of the work is done with hand tools such as planes, chisels, gouges, scrapers, and knives. The school teaches Italian violin making, based on German tradition, as taught by two Americans and a Korean. But before starting school I had to make some major life changes.



Retiring from a great job at Caltrans Office of Land Surveys and moving to Utah to attend VMSA was something like jumping out of an airplane without a parachute. You could hear the screaming: "What was I thinking?" Despite the fear of change, I started school in January 2013.

The old adage "Be careful of what you wish for, because you might just get it" applies to my decision. The workshop was like doing a topo survey and the school a first order survey. Violin building has a very steep learning curve. Understanding how violins are constructed, heat bending wood for the sides without breaking it, hand planing a perfect joint between two pieces of wood, developing an "eye" for the correct shape, sharpening and learning how to use hand tools are some of the challenges. I started out building two violins based on Strad models from 1709 and 1715. The tolerances for construction range from 0 to 0.5 mm.

After working on a portion of the violin the student confers with the teacher (Laser Eyes) for feedback:

Me: "How is this corner?"

Laser Eyes: "Right. Well I think you need to change this area right here."

Me: "You mean that tiny area the size of a speck on a flea's butt?"

Laser Eyes: "Yes."

Me: "Uh oh!"

I completed the assembly of the first two violins and have started on a third Strad model from 1721. It took all my patience and over a year to build the first two. It is getting easier but the challenge is to do precise work at all times. I am amazed at the satisfaction I get from working with

Continued on next page

my hands and building a quality violin. The wood visually is a multilayered feast for the eye that continually changes with each cut. It is also an irregular substance that can do unexpected things. Learning how to fix a mistake is an important part of violin making.

Building violins is harder than I naively thought it would be. The process of change at 57 is also harder than when I was younger. Despite what can seem to be overwhelming challenges I am glad I am following these different footsteps. What doesn't kill you makes you stronger. Right?



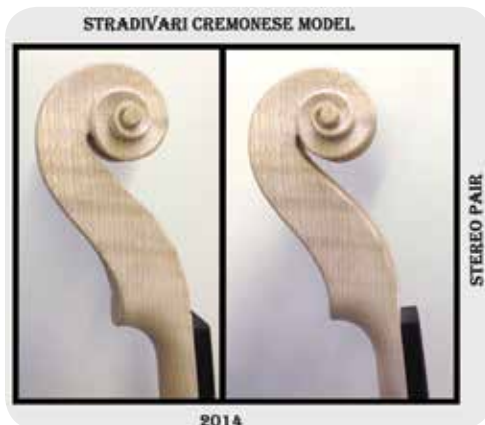
Inlaying purfling into the maple top. A channel 1.3 mm wide by 2 mm deep is hand cut around the parameter of the violin. Purfling is heat bent and fitted to the channel. This photo is through a magnifying glass to check the corner miter. The purfling is made from three sheets of veneer and cut into strips.



Chalk fitting a bass bar to the inside of the top. Tolerance-0 mm



Ribs are 1 mm thick and heat bent to fit an inside mold. They are glued on to blocks. The mold is removed and the top and backs are glued to the ribs.



Stereo



Cutting out F-holes

A Short History of the Violin

By Kevin Akin L.S.

The invention of the modern violin is credited to Andrea Amati (1505-1577) who lived in Cremona, Italy. These violins first appear around the mid-1500s. Niccolo Amati (1596-1684 grandson of Andrea) may have employed Antonio Stradavari (1644-1737) as an apprentice. An early Stradavari violin dated 1666 reads "Alumnus Nicolias Amati". Other makers of the period are documented as having apprenticed with Niccolo such as Andrea Guarneri. The Guarneri family went on to made violins for 3 generations in Cremona. The devastation of war and plague disrupted Cremona and few detailed records exist about violin makers.

Stradivari survived the turmoil and became, arguably, the greatest violin maker who has ever lived. He also made cellos, violas, guitars, and harps. Around 650 instruments survive from an estimated 1,000. He established a workshop that employed sons and possibly other makers. His instruments are still the gold standard for workmanship, varnish, and sound. The highest selling Stradivari violin to date was sold for \$15.9 million in 2011. A viola was offered at \$45 million recently but failed to realize that price at auction.

His construction methods did not long survive him. Two bachelor sons working in the workshop died within 6 years of their father. No written records of the Stradivari construction methods survived. His varnish recipe and application methods were never passed down. Instruments, correspondence, tools, molds, and drawings survive. Rediscovered in the 1800s his instruments have been the ultimate for players and collectors ever since.

Right from the beginning fraud and imitation has obscured violin history. Imitators started putting other maker's labels in their violins. Hucksters knowingly defrauded customers by switching labels or selling inferior violins with fake labels. A Lamborghini hood ornament can be added to an inferior car to boost the price but this does not change how it drives

How did Stradivari make his instruments? What secret knowledge did he possess? What was his varnish recipe? Luthiers, scientists, players, and the general public have been speculating for two centuries now. New technology is providing clues but not definitive answers. I believe the real secrets of Stradivari's enduring legacy are good training, a long life pursuing a trade (at least 70 years), high standards, and hard work. As with surveying there are no shortcuts to being an outstanding professional.

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By: Greg Helmer, PLS

Mr. Helmer is a Professional Land Surveyor in four states with over twenty-five years of experience in geodetic control, surveying geomatics and GIS. As a Senior Vice President with the firm of Michael Baker, he has been an innovator for advanced technologies. He is nationally recognized for his contributions to GPS surveying and high-precision geodesy. Mr. Helmer is a contributing author to the National Height Modernization Program for NOAA, and a founding member and past Chairperson of the California Spatial Reference Center at Scripps Institution of Oceanography.

Geopotential Vertical Datum: E.T.A. 2022

“In 2022, the National Geodetic Survey will replace NAVD 88 with a new geoid-based vertical datum for the United States.” (Roman, 2014)

With the June 30, 2014 release of xGEOID14B, the replacement for NAVD88 has become a reality, if only a beta version of that new paradigm. The release is in the form of a web script that queries the experimental gravimetric model and reports on up to 20 points at a time, so it's not a geoid model that you would expect to apply to your next GNSS survey. It does however, paint a very clear picture of the geodetic control system of the not-too-distant future. That picture is one of a spatial reference system founded upon geodetic models and fundamentally detached from monuments and observations. Once implemented, the National Spatial Reference System and the California Spatial Reference System will be realized directly by CORS, CGPS, and precise point positioning services, through positions within the International Terrestrial Reference Frame (ITRF), and transformed to standard expressions of horizontal and vertical control. A surveyor could still recover a previously positioned monument and make terrestrial or GNSS ties to a new position, but that position would be inferior to the ability to directly position within the official reference system. For practical purposes, passive monuments are rendered superfluous with one notice in the Federal Register.

Transformation models will be provided to estimate conversion to and from legacy datum, and as with previous changes, a long transition period starting now can be anticipated. For elevations after 2022, the NGS 10-Year Plan (NGS, 2013) proposes a new geopotential datum to “reduce all definitional and access-related errors in orthometric heights in the geopotential reference frame to 2 centimeters when using 15 minutes of GNSS data”. This is expected to be achieved, and seems confirmed by the release of xGEOID14B, by defining elevations as geopotential heights (Roman & Weston, 2012). While the space-time reference frame, ITRF, and

the zero origin for geopotential heights, $W_0 = 62,636,856.00\text{m}^2\text{s}^{-2}$, are now agreed, the metric to be used to express geopotential heights is ambiguous by some strange geophysics.

Orthometric heights, such as NAVD88 are a good definition for a height system because of their purely geometric and intuitive nature (see figure 2). Unfortunately it's a geometry that can never be physically measured, and what's worse, two points with the same orthometric height are not necessarily on the same equipotential surface (see figure 4), meaning it's possible mathematically for water to flow uphill on orthometric heights.

Geopotential numbers ($C_p = W_0 - W_p$) are the scientific expression for height in the measure of work needed to move from one equipotential surface to another. They are measures of potential energy and not distance, so their adoption for a geopotential datum while defining a true equipotential surface, is abnormal for a measurement system. It is possible to scale geopotential numbers without loss of their representation of relative potential and this is what is done to compute dynamic heights. Dividing geopotential numbers by a constant for gravity, most common being standard gravity at 45° latitude, produces dynamic heights. Dynamic heights, since scaled to units of distance can be used in terrestrial or GNSS control surveying with no practical loss of fidelity. Geopotential numbers and dynamic heights express true equipotential surfaces with unambiguous mathematical definition, and by introduction of scale, sufficiently approximate measureable distances for most applications. For this reason the modernized geopotential reference system anticipated by NGS could adopt this or a similar definition. Departure from orthometric heights would solve some troubling nuances and provide needed consistency with the global reference frame and modern geospatial technology; the changes, however, would take some getting used to.

Continued on next page

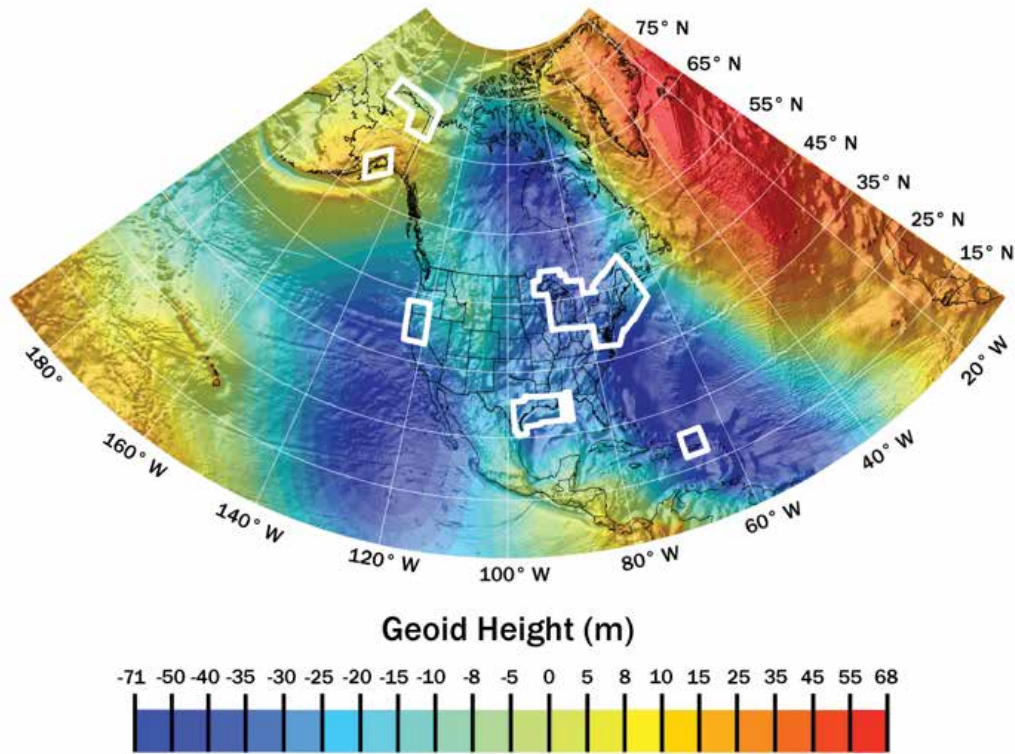
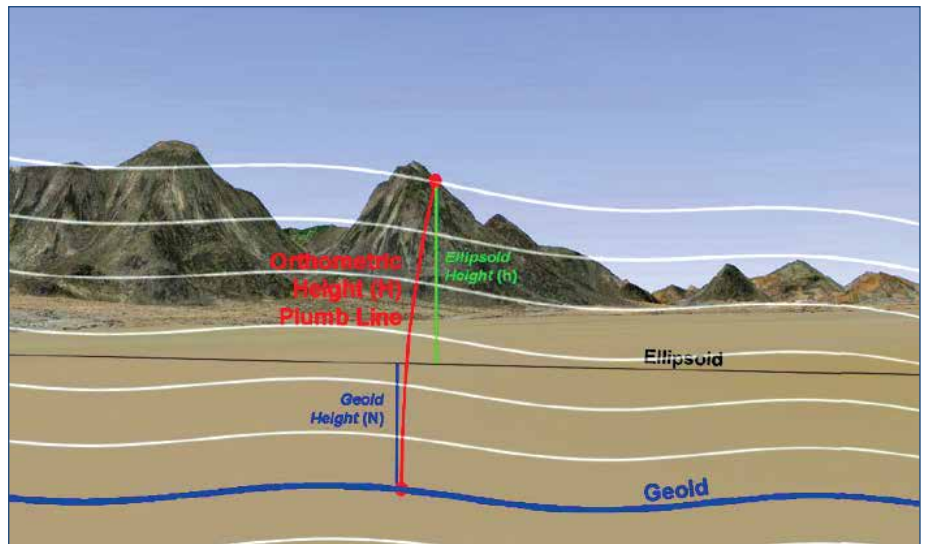


Figure 1 (Roman, 2014):

The experimental geoid model xGEOID14B was derived from high-precision gravity data, including the aerometric gravity data compiled so far from the GRAV-D program shown outlined in white. The single model spans Alaska, Hawaii, North America, Puerto Rico and the US Virgin Islands and is identical to the definition adopted by Canada, the International Astronomical Union (IAU), and the International Earth Rotation and Reference System Service (IERS). The equipotential datum was selected at a gravity potential of 62,636,856.00m²s⁻². This constant establishes the zero elevation for the new geopotential datum.

Figure 2:

Orthometric height is the distance from the geoid to a point along a line normal to the equipotential of the gravity field. Therefore the value is correctly computed along a curved plumb line. To do so requires knowledge of the potential gravity at every point along the plumb line. NAVD88, was expressed in Helmert Orthometric Heights to simplify the missing gravity data. The NAVD88 project used the best available gravity data and computation resources at the time, but was compromised compared to modern capabilities.



Orthometric Height = $H = C_p / g'$
 C_p = the geopotential number at P
 g' = the mean gravity along the plumb line.

Helmert Orthometric Height = $H = C_p / (g + 0.0424H_0)$
 g = surface gravity in mGals
 H_0 = approximate orthometric height at P



Geopotential Vertical Datum: E.T.A. 2022



Figure 3:
The contour map shows the difference in meters from derived heights using GEOID12A to xGEOID14B. This new geopotential datum, scheduled for implementation in 2022, is necessary to provide a height system commensurate with modern positioning capabilities, globally unified to address issues such as climate change and sea level rise.

References

Roman, D., 2014, xGEOID14 Evaluation Computation, Retrieved 11-Jul-2014 from: <http://beta.ngs.noaa.gov/GEOID/xGEOID14/>
 NGS, 2013, Ten-Year Strategic Plan 2013-2023, Retrieved 11-Jul-2014 from: http://www.ngs.noaa.gov/web/news/Ten_Year_Plan_2013-2023.pdf
 Roman, D. & Weston, N., 2012, Beyond GEOID12: Implementing a New Vertical Datum for North America, FIG Working Week 2012, Rome, Italy, 6-10 May 2012, Retrieved 12-Jul-2014 from: https://www.fig.net/pub/fig2012/papers/ts04b/TS04B_weston_5691.pdf ❖

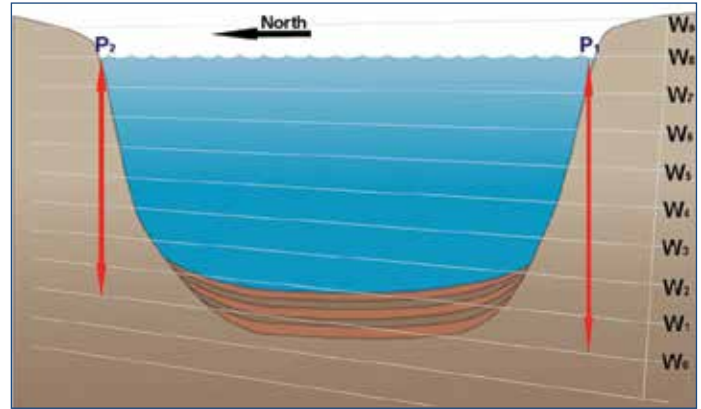


Figure 4:
In the above illustration of a hypothetical still lake, the lines W_i are equipotential surfaces with W_0 being the geoid or datum surface. The orthometric height at Points P_1 and P_2 are the distances along the plumb line between W_0 the datum and W_8 the equipotential surface of the lake, and are properly computed by the formula:

$$H_1 = (W_8 - W_0) / g'_1$$

$$H_2 = (W_8 - W_0) / g'_2$$

Where g'_i = the mean gravity along the respective plumb line

Since equipotential surfaces converge to the north in the northern hemisphere, due to the decrease in centrifugal force, $H_1 > H_2$. This seems counter intuitive and presents a conundrum for the definition of a geopotential height system. Geopotential numbers eliminate this conundrum since they represent the change in gravity potential between the geoid and a point. Geopotential numbers are a measure of potential energy represented in geopotential units equaling one kilogal meter. And since standard gravity at sea level is approximately 0.98 kilogal, geopotential numbers are close in value to orthometric heights in meters. Dynamic heights, another possible geopotential height system, are derived by replacing g'_i with a standard gravity value over the span of the datum.

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Professional Outreach Events

By: Teodoro "Theo" Martinez, PLS
 Photos by Gwen Gee.



Theo Martinez,
 John Koroyan,
 and Jay Wright.

On the first three Fridays in May 2014, the Santa Clara/San Mateo Chapter of CLSA participated in Physics, Science, and Math Days at California's Great America Theme Park in Santa Clara. This event is held annually in order to expose students to the scientific and mathematical principles associated with theme park design and operation. There were numerous exhibits and challenges throughout the park designed to engage the students. Our team presented an interactive demonstration along with a table of literature. Our interactive demonstration included general topo surveying in our immediate vicinity and reflectorless observations of the two tallest towers in the park. Volunteers included John Koroyan from BKF, Jay Wright from Footsteps Surveying, Peter Friedmann from the Mount Diablo Surveyors Historical Society, Gwen Gee from the Santa Clara County Surveyor's Office, and Frank Rosenblum, David Tabuchi, and Theo Martinez from Underwood and Rosenblum.



Jay Wright, Theo Martinez,
 Peter Friedmann, and two young fans.

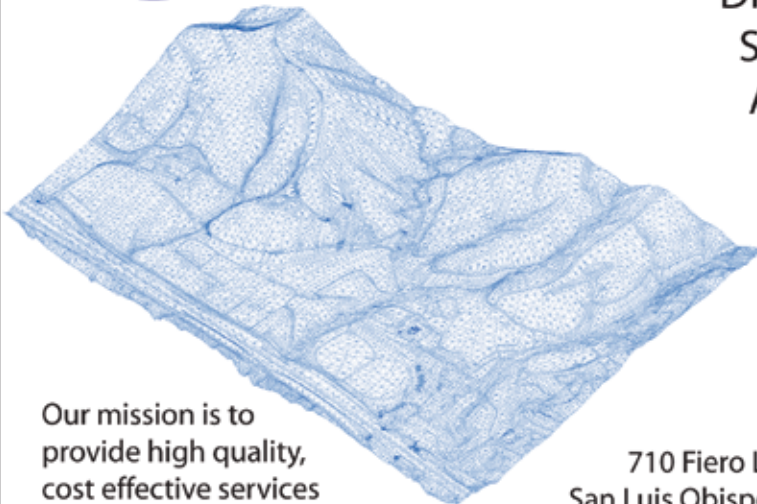
We found this to be an excellent opportunity to introduce our profession to both students and teachers from throughout northern California. We plan to participate in this event in future years as well. Surveyors are welcome to contact the Santa Clara/San Mateo Chapter if they are interested in participating next spring. Additionally, other theme parks throughout California host similar events. With a few phone calls, it should be possible for your chapter to participate in an event like this that is closer to your area. ❖



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Q&A SMA Expert



Michael P. Durkee, is a partner at McKenna Long & Aldridge where he represents developers, public agencies and interest groups in all aspects of land use law. Mike is the principal author of *Map Navigator* (1997-2013), and co-author of *Ballot Box Navigator* (Solano Press 2003), and *Land-Use Initiatives and Referenda in California* (Solano Press 1990, 1991.) mdurkee@mckennalong.com

Question:

I was told that a subdivider can receive an automatic approval of a tentative map if the city or county fails to act on the tentative map within the time periods set forth in the Map Act - Is that correct? If so, how does it work?

Answer:

Excellent question! Yes, an automatic approval can be secured, but only if all of the constitutional and statutory requirements are first satisfied, and then once satisfied, the city or county fails to act on the tentative map within the time periods set forth in the Map Act. As discussed below, the three prerequisites to automatic approval are: (1) satisfaction of Constitutional Due Process requirements; (2) a determination of General Plan consistency; and (3) CEQA compliance. Once those requirements have been satisfied, and the applicable time period for action expires, the tentative map is automatically approved. Likewise, if an appeal of a tentative map action is not heard within the applicable time periods set forth in the Map Act, the tentative map shall be deemed to be approved or conditionally approved as last approved or conditionally approved.

■ **Due Process - Notice and Hearing.** Due Process involves a noticed opportunity to be heard by a neutral tribunal, where the decision reached is based on evidence in the record, and where written findings are made that bridge the “analytical gap” between evidence in the record and the ultimate decision reached. The Map Act imposes particular public hearing “notice” requirements (some of which are found in Government Code section 65090). Additional notice may be given in any manner the agency deems necessary or desirable. Notice must include the date, time, place, identity of hearing body, an explanation of the matter being considered, a description of the location of the property, and must be given in the manner required by statute. Notice and an “opportunity to be heard” (hearing) regarding the map is key to Due Process satisfaction. See *Horn v. County of Ventura*, 24 Cal. 3d 605 (1979) (subdivision approvals and those planning decisions less extensive than general zoning are entitled to the notice and hearing requirements of due process); *Cohan v. City of Thousand Oaks*, 30 Cal. App. 4th 547 (1994) (reasonable notice and opportunity to be heard are required whenever a tentative map will substantially or significantly deprive a landowner of his or her property rights). “How” a city or county provides that required noticed

hearing and the neutral arbiter (e.g., hearing officer, hearing board, planning commission, city council/board of supervisors, appeal board, etc.) is within the discretion of the city/county to decide. However, whichever way the city/county determines to structure that hearing process, determines the applicable time periods within the Subdivision Map Act (discussed further below).

- **General Plan Consistency.** All tentative map approvals must be consistent with the local General Plan and any applicable Specific Plan.
- **CEQA Compliance.** Tentative map approvals are discretionary acts subject to the California Environmental Quality Act (“CEQA”). Therefore, CEQA compliance (certify Environmental Impact Report (“EIR”), adopt Mitigated Negative Declaration, etc.) must be secured before the tentative map can be approved. In fact, it is from the date of CEQA compliance that the automatic approval time periods within the Map Act begin to run. For that reason, city attorneys and county counsel regularly advise their clients and client-staff to not certify/adopt the CEQA compliance document (e.g., EIR, Negative Declaration, etc.) until the agency is ready to act on the tentative map. In this way, the agency does not “start” the automatic approval time period until it is actually ready to act on the tentative map.
- **Time Periods for Action.** As stated above, “how” a city or county provides its noticed hearing and the neutral arbiter is within the discretion of the city/county to decide. However, whichever way the city/county determines to structure that hearing process, determines the applicable time periods within the Subdivision Map Act. For example, if the city/county has the Advisory Body (e.g., planning commission) as the tentative map decision maker, the Body has 50 days from CEQA compliance to take that action. If instead, the city/county has the Advisory Body (e.g., planning commission) make a recommendation to the Legislative Body (e.g., city council or board of supervisors), then the Advisory Body has 50 days from CEQA compliance to make its recommendation, and the Legislative Body has 30 days thereafter to make its decision (for a total of 80 days). If instead, the city/county uses appeals boards, then additional/different time periods apply. Bottom line, there are different ways a city/county can set up the process, with a corresponding applicable Map Act time period. See, Gov’t Code §§ 66452 - 66452.5.

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■ **Failure to Act in Timely Manner – Deemed Approved.**

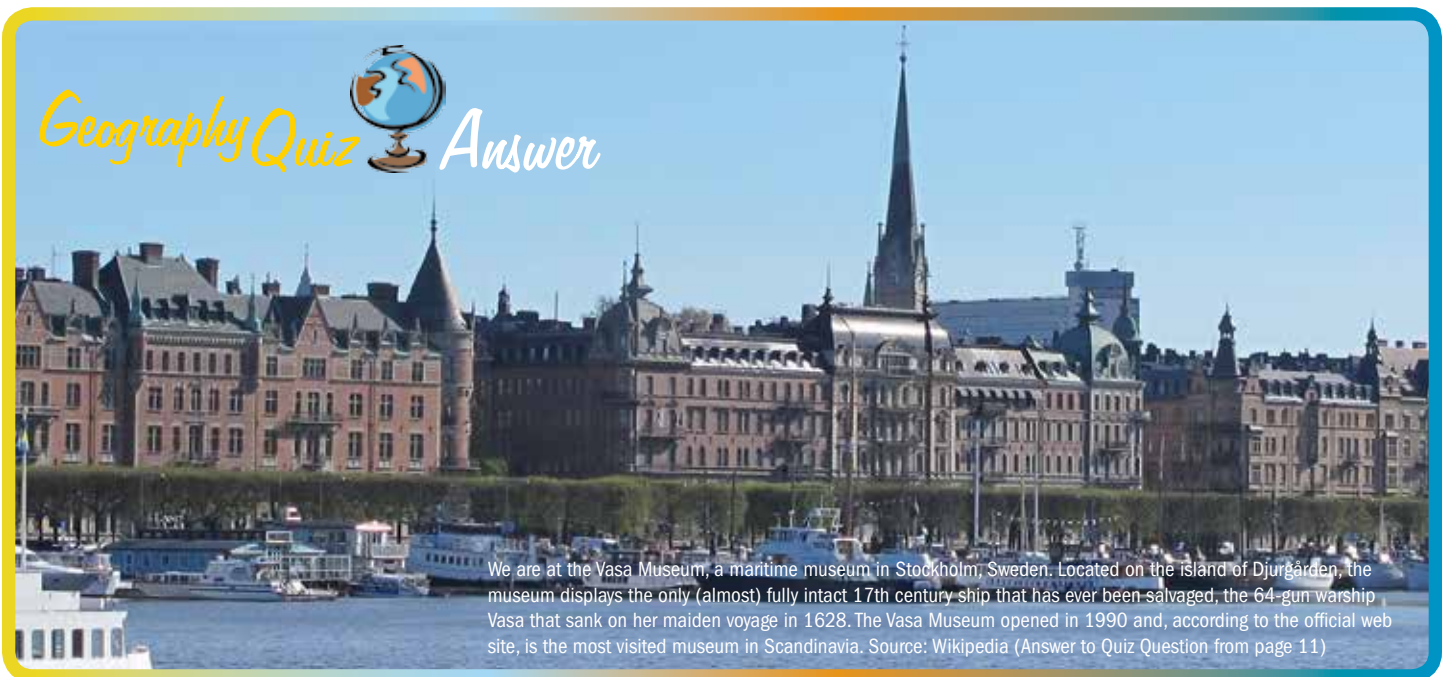
If no action is taken by the agency having the authority to approve, conditionally approve, or disapprove the tentative map within the statutory time periods, then the map is deemed approved so long as it complies with the requirements of the Map Act (e.g., CEQA, General Plan consistency, due process compliance). Gov't Code § 66452.4. A reasonable interpretation of these statutory procedures would be that failure of the advisory agency to act within 50 days triggers the 30-day period within which the legislative body must act; the failure of that body to act within 30 days would be deemed an approval of the map. *Benny v. City of Alameda*, 105 Cal. App. 3d 1006 (1980); *Pacifica Corp. v. City of Camarillo*, 149 Cal. App. 3d 168 (1983). Once a tentative map is deemed approved in this manner, a subdivider is entitled, upon request to the local agency or the legislative body, to receive a written certification of approval. Gov't Code § 66452.4(b). When a tentative map has been validly "deemed approved" under the Map Act by the failure of the legislative body of a city/county to take timely action to approve, conditionally approve, or disapprove it, such a map is entitled to be treated in the same manner as a tentative map that has been approved by a vote of the legislative body, provided that the map complies with all applicable provisions of the Map Act and local ordinances enacted thereunder. 81 Ops. Cal. Atty. Gen. 166 (1998).

However, a subdivider may not be entitled to automatic approval of a tentative map if the subdivider agreed to postpone the hearing to a later date and then was present to participate in the hearing. *J.R. Lenney v. Board of Supervisors of Riverside County*, 41 Cal. App. 3d 902 (1974); see also *Carmel Valley View, Ltd. v. Maggini*, 91 Cal. App. 3d 318 (1979); *Selinger v. City of Redlands*, 216 Cal. App. 3d 259 (1989) (moratorium on a tentative map application does not toll the statutory time periods for automatic approval); *Orsi v. Council of the City of Salinas*, 219 Cal. App. 3d 1576 (1990); *Pongputmong v. City of Santa Monica*, 15 Cal. App. 4th 99 (1993) (failure to take action upon a tentative map within the statutory time periods was not approved by operation of law where developers

engaged in coercion and misrepresentation during the application process). And yet, a local agency may not require a routine waiver of time limits as a condition of accepting an application for a tentative map. A time extension may be agreed to by both parties or a waiver may be obtained for the purpose of permitting concurrent processing of related approvals or an environmental review on the same development project. Gov't Code § 66451.1(a). The local agency will not violate the statutory time period for acting on a tentative map where there is mutual consent to an extension. *Carmel Valley View v. Maggini*, 91 Cal. App. 3d 318 (1979).

The Map Act also provides that a tentative map is deemed approved if the legislative body fails to act upon an appeal from an advisory body decision within 60 days of the appeal. Gov't Code § 66452.5(c)(2), (d)(1). Section 66452.5 first requires that a hearing be held within 30 days of the appeal, but that if there is no regularly scheduled meeting of the legislative body within the next 30 days for which proper notice can be given, the appeal may be heard at the next regular meeting, or within 60 days of the appeal, whichever period is shorter. Gov't Code § 66452.5(d)(1).

How Could An Automatic Approval Happen? Imagine a residential specific plan is adopted by the out-going city council. In this city, the Legislative Body alone hears and decides all tentative maps. The incoming city council dislikes the residential specific plan and has made pronouncements that it would like to see it repealed. The residential specific plan is consistent with the local General Plan, and had a program EIR prepared and certified before its adoption. A tentative map consistent with the residential specific plan is submitted. A "workshop/hearing" is held by the new city council to hear the applicant's tentative map and the community's concerns, and to share with all present their dislike of the residential specific plan. The hearing is continued to a date uncertain. All the requirements for automatic approval are in place: due process, general plan consistency and CEQA compliance. After the required time frame runs (in this example, 50 days), the tentative map would be automatically approved! ❖



We are at the Vasa Museum, a maritime museum in Stockholm, Sweden. Located on the island of Djurgården, the museum displays the only (almost) fully intact 17th century ship that has ever been salvaged, the 64-gun warship Vasa that sank on her maiden voyage in 1628. The Vasa Museum opened in 1990 and, according to the official web site, is the most visited museum in Scandinavia. Source: Wikipedia (Answer to Quiz Question from page 11)

Index To Advertisers

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Funny Bones

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An engineer makes dinner. His wife left him these instructions:

"Shepherds Pie needs to be taken out of the fridge and placed in the oven at 140 degrees."



Submitted by: Robert Reese, PLS

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Risk Management for Land Surveyors

Risk Management Revisited



What's it really mean?

It never hurts to go over your risk management techniques and principles. So here we go, again.

Risk management is an analysis of all your business exposures for loss potential so you can decide how best to handle the danger they present.

You can avoid the risks you discover by removing the exposure, reduce the risks with loss control measures, transfer the risks with insurance or retain the risks with insurance deductibles or self-insurance strategies.

Even though you are careful, prudent and risk averse you still need to worry about loss that can seriously damage you, your business and your reputation. Your application and conscious adaptation of sound risk management practices will help you control your potential loss exposures and associated costs. Hopefully, you will be able to add more profit to your bottom line.

Basically, you need to manage your risks and not let your risks manage you.

Identify and Reduce Risk

You start by identifying your specific risks such as equipment loss, surveying errors, automobile and worker accidents, and controlling them or at least not being surprised by them. Set your standards, develop policies and document procedures that will reduce your exposure to loss. A written loss control program should include workplace and field safety, office security, workstation ergonomics and fair employment practices.

When you recognize what can happen that would seriously hurt your land surveying business financially and physically, you can anticipate what could put you out of business or make it difficult or impossible for you to do your work efficiently and cost effectively. Then you can make needed corrections.

Risk Management Techniques

Risk management is asking yourself a bunch of "what if" questions and trying to answer them.

Risk management is about care, quality and professional excellence.

First, start by identifying and assessing the specific risks that you as a Land Surveyor face every day such as equipment theft or damage, field injuries, slip and fall accidents and some that you might never see such as earthquake, flood or fire.

Next, determine your ability to deal with the risks you've identified. How much can you afford to lose? How much can you spend to repair or replace the anticipated damage? How much insurance do you need and can you afford it? Is there insurance to cover your risk?

Look carefully at your overall operations. Consider your property, inland marine, crime and premises liability exposures along with your professional liability (E&O), automobile liability, workers compensation, health, life and retirement exposures. Don't forget watercraft and aircraft exposures. Succession planning is a good idea, too.

Handling Your Exposures

After you identify your risks you have to decide how to handle your exposures. Here's how:

Avoid the risk-don't take the job or use a well-insured subcontractor to do the work.

Control the risk-be super careful how you work, check and re-check, implement safety training, know who you work for and who works for you, don't sign or accept onerous contracts, review your losses and claims to prevent them from happening again.

Retain the risk-with self-insurance or large deductibles.

Transfer the risk-using insurance or indemnity agreements.

Monitor the results-with cost/benefit analysis to see if your risk management plan is successful.

But remember risk management can fail because some unforeseen economic, political or emotional occurrence has happened. So be ready for that, too.

Good Advice

- Use checklists and exposure surveys to make sure your risk management and insurance programs are being properly implemented.
- Always keep your insurance applications, summaries and policies handy for review.
- Make sure your subs carry adequate liability insurance.
- Always use written contract agreements. Make sure you have favorable limitation of liability clauses in those agreements. CLSA has good contract forms available.
- Implement your own quality control and safety procedures.
- Do drug testing. Get motor vehicle reports (MVRs) on your drivers.
- Have in-house continuing education programs. Go to CLSA conferences, workshops, etc.

Finally and Often

Regularly review all your implemented risk management procedures and make sure they are working for you.

You or the person you designate as risk manager has to handle that function along with many other work duties, financial planning and budgeting.

When you add in OSHA compliance, claims management, employee safety and security evaluation, contract management and disaster recovery planning, you or your designee will be very busy.

But remember, it's your business. You love it and want to do it well with your eye on superb safety and risk control. You are the expert surveyor. Being conscious of sound risk management principles will make what you do and how you do it more successful and profitable. ❖



CLSA Past President Pat Tami Begins Term as NCEES Western Zone Vice President

Patrick Tami, P.L.S., recently received his commission as NCEES Western Zone vice president at the 93rd NCEES annual meeting, held August 20–23 in Seattle, Washington. He was elected to the position by delegates from the Western Zone during their interim meeting in May 2014. As vice president, Tami will serve on the NCEES board of directors and as the zone’s administrative officer through 2016. A resident of Roseville, California, Tami has been a member of the California Board for Professional Engineers, Land Surveyors, and Geologists since 2006. He previously served as NCEES Western Zone vice president for the 2008–10 term. He has also served on a number of NCEES committees, including chairing the Advisory Committee on Council Activities and the Committee on Uniform Procedures and Legislative Guidelines. A professional land surveyor for more than 30 years, Tami is currently principal surveyor of R.E.Y. Engineers, Inc., a firm providing civil engineering and surveying services. He is a past president of the California Land Surveyors Association, a past chair of the East Bay Municipal Engineers Association and the Bay Counties Association of Civil Engineers and Land Surveyors, and a former member of the board of directors for the Western Federation of Professional Surveyors. ❖

About NCEES

The National Council of Examiners for Engineering and Surveying is a non-profit organization made up of engineering and surveying licensing boards from all U.S. states and territories. Since its founding in 1920, NCEES has been committed to advancing licensure for engineers and surveyors in order to protect the health, safety, and welfare of the U.S. public. NCEES helps its member licensing boards carry out their duties to regulate the professions of engineering and surveying. It develops best-practice models for state licensure laws and regulations and promotes uniformity among the states. It develops and administers the exams used for engineering and surveying licensure throughout the country. It also provides services to help licensed engineers and surveyors practice their professions in other U.S. states and territories. For more information, please visit ncees.org.

Photo of the Year Entries

Submit Photos to CLSA@californiasurveyors.org



Submitted by Brian Christensen, PLS

Death Valley National Park. Picture taken from RTK rover while occupying the beginning station of the project on the CA/NV boundary. This photo is looking East into Nevada, taken with a GoPro Hero2



Death Valley National Park. Topcon GR5 GNSS receiver set up on project control just prior to bagging it for the day, taken with a Sony CyberShot.



Welcome *New CLSA Members*

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Joel Garcia, Soldotna, AK
Arlo Kneeland-MacDonald, Klamath Falls, OR

CLSA *Remembers*



Hal at the CLSA Conference awarding the infamous rusty chain award

Longtime CLSA member Harold “Hal” Davis passed away peacefully at home, on Wednesday, July 2nd.

Hal joined the California Land Surveyors Association (CLSA) in 1971 and served on the Board of Directors for more than 30 years. Hal also served as Secretary, Treasurer and as a member of numerous Committees.

Hal was a founding member of the CLSA Education Foundation where he actively raised funds and helped to award over thousands of dollars a year in scholarships to land surveying students.

His extensive work with CLSA and tireless efforts to improve the land surveying profession earned him the CLSA Distinguished Service Award – CLSA’s highest honor.

Hal will be fondly remembered and sorely missed by the land surveying community. ❖

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By: Carl C. de Baca, PLS

Carl is Principal of Alidade Surveying in Elko, Nevada, and a past editor of the California Surveyor. He can be reached at: alidade.nv@sbcglobal.net.

Bad Backsights

replaced. Meanwhile Crew Two began the topographic survey of Site Option C, which went well until the chainman, who you may recall was bit by a dog the previous day, stumbled into a den of rattlesnakes and ran, screaming from the site before the party chief could stop him.

Day Three, June 7: The two party chiefs called me on June 6 and recommended that they take the day off to gather their wits, review the overall plan for the work and brainstorm about possible changes in strategy. I concurred. On the seventh, the two crews arrived in NSJ around 7 a.m. and stopped at the market to get food for the day. The clerk told them that they should get out of town without delay. He said there were “bad people” around who didn’t want anyone poking about in the forest. The crews, spooked pretty badly by this time, drove out to Site Option B. The Doberman dogs were not spotted so Crew Two began the topographic survey while Crew One ran bench levels through the area. Both members of Crew One began to exhibit profound symptoms of poison oak exposure later that day. The second crew discovered a large garden of what appeared to be marijuana plants in a low area at the most remote corner of the site where they also found a dilapidated but apparently occupied motor home parked nearby. Crew Two picked up their equipment and headed back to the hotel in Grass Valley. Crew One followed them after the chainman nearly fell into what he described as a bottomless mine shaft hidden in the undergrowth on the side of the hill south of Site Option B.

After discussing these problems with the party chiefs, I have recalled the crews while we re-evaluate how to proceed. Two individuals have since filed Workman’s Comp claims for poison oak and one individual has resigned rather than face the prospect of returning to North San Juan. I did call the county sheriff’s department to discuss having an escort for our next trip but I was advised that the deputies don’t like to spend much time there. At this point I am somewhat reluctant to send my staff back into what we are now calling “the war zone”, without either arming them or securing police escort.

As you can see, delay in completion of the survey was inevitable. I suggest we schedule a meeting, perhaps on-site and including law enforcement, to discuss alternatives, before any further attempts to complete the survey are undertaken.

Sincerely,

Carl C.de Baca
Survey Project Manager ❖



Nevada County Utility District
Grass Valley, CA

RE: Status of Design Survey – North San Juan

Dear Sirs,

This letter is in response to your recent request for an update on the status of the topographic and boundary survey for design of the new sewer leach field to serve the town of North San Juan. As you know, the survey is to include three separate county parcels called Site Options A, B and C. I am aware that a critical milestone date has been missed and that your department has expressed concern that the design will fall behind if the survey data is not produced right away.

I feel I must inform you of some mitigating circumstances that have seemingly conspired to produce unanticipated delays in delivering our survey product to you. Following is a brief summary of the events that have slowed the delivery of the survey information. I am confident that you will extend your understanding, if not your sympathy, once you have digested the facts.

Day One – June 4: Two field crews arrived in North San Juan, the first crew intended to perform the cadastral search and establish survey control while the second crew would begin the topographic surveys of the three site option areas. The second crew was immediately run off of Site Option A at gunpoint, by individuals claiming to own the land. The crew attempted to gain access to the site called Site Option B and were attacked by 2 Doberman-like dogs running freely in the area. The chainman was badly bitten and the crew had to drive back to Grass Valley to seek medical attention for him. Meanwhile the first crew began setting survey control at Site Options B and C.

Day Two, June 5: The first crew began a field traverse from existing CalTrans control and located the southwest corner of Section XY. They were on the way to the west One-Quarter corner along a clearing in the heavily wooded area when they came across what can only be described as a voodoo shrine. The party chief made a sketch of the thing, which consisted of a stump with strips of colored cloth and dead animals nailed to the stump, including a recently deceased raccoon. At the top of the stump sat a mask of some sort and there were dozens of candles spread about. It seemed prudent to the party chief to curtail the search for the quarter corner and the crew proceeded rapidly back to the safety of the highway, whereupon they discovered that all four tires on the truck had been flattened. Crew One spent the rest of the day getting the truck towed to Grass Valley and the tires

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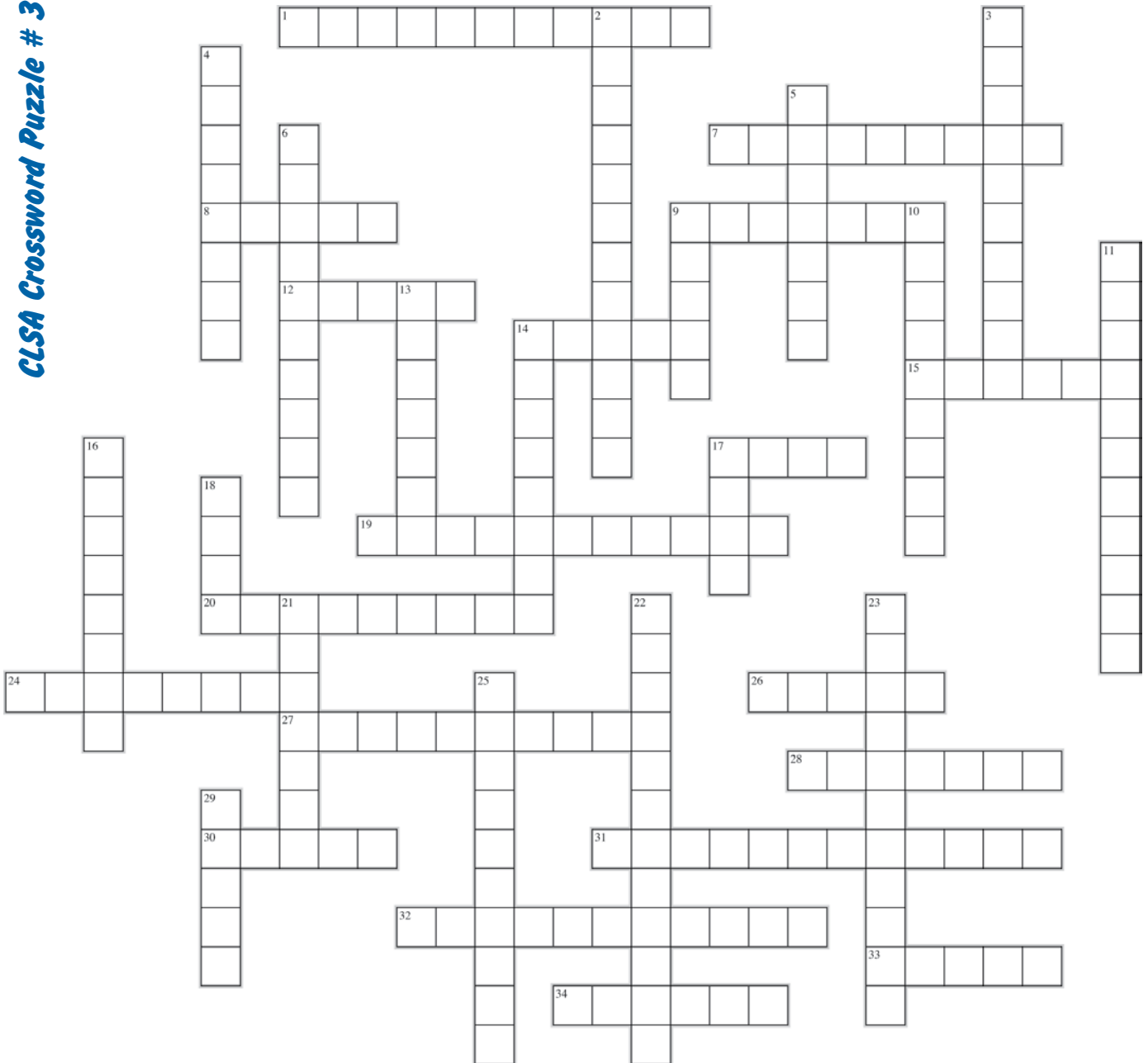
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Scott Martin has been working in surveying since 1977 and obtained his California license in 1987. He worked in the private sector until 1993 and has been employed by the State of California since then. He lives in the Gold Country of California and enjoys collecting, restoring, and using Coleman lanterns in his leisure time. The one in the picture is from 1920.

Crossword Puzzle *by Scott Martin*

CLSA Crossword Puzzle # 31



Across

1. One of three starting places for the GLO around here
7. If I've got it, you can have it instrument
8. All the rage it the air now.
9. A Fancy fiddle maker
12. Early Topcon total station
14. It will leave a scar
15. Corte de Madera is one of many
17. Not a cut
19. Distance reading part of a level
20. Right-of-Entry for surveyors
24. Cousin of a Vodka nail
26. One man crew member, often
27. The long side
28. The preferred hair color in surveying
30. Modern violin inventor
31. Vertical datum of the future
32. What the vertical scale often is
33. Number of elements required in an IIPP
34. He led a famous syndicate

Down

2. Unwelcomed den inhabitants
3. The N in GNSS
4. A Professional Surveyor exclusive
5. A type of reference station
6. Best time to observe Polaris
9. A bygone mapping media
10. Park of 1,000 flags
11. The M.O. of a criminal curve?
13. It lets you "see" the point
14. It's not BS.
16. What a Red 1 was
17. A FEMA product or surveying company
18. Every employer has to have one
21. An Advisor out to pasture?
22. A natural for surveyors
23. At the of important elements
25. A measurement must
29. Father of the bell curve

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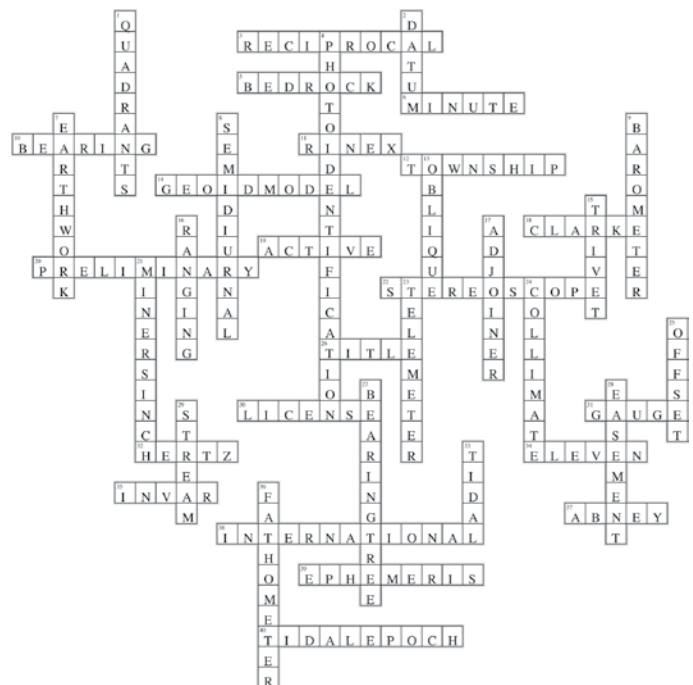
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Key to CLSA Crossword Puzzle # 30

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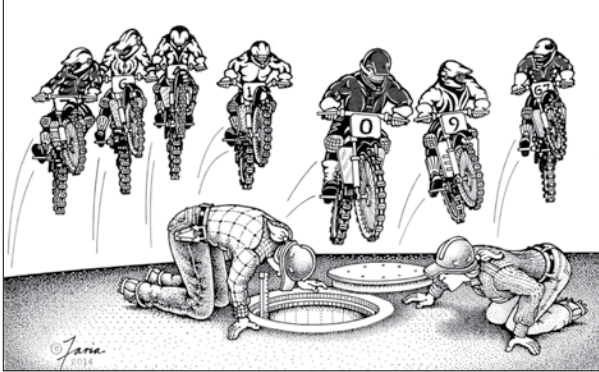
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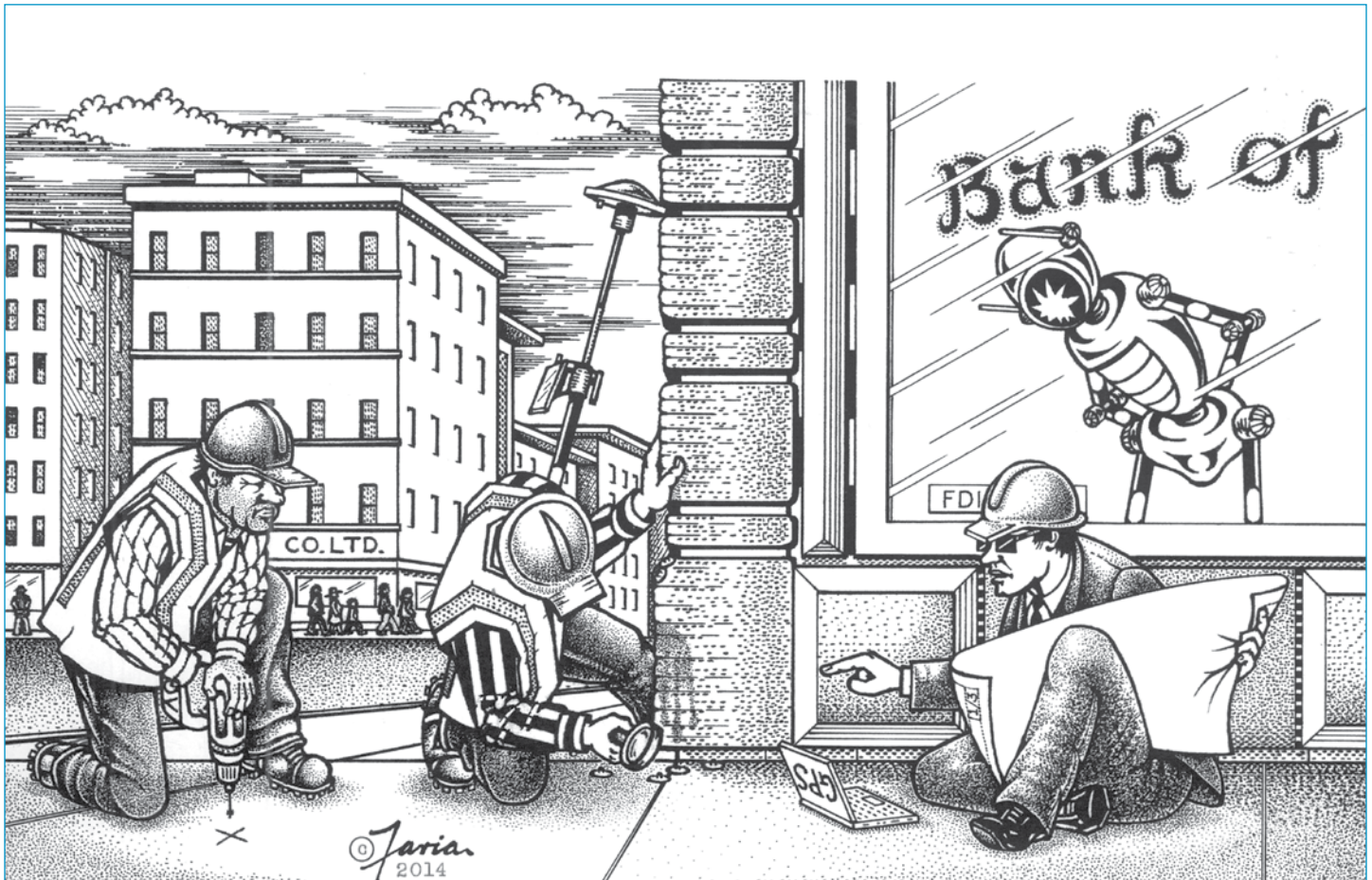
Submitted by BJ Tucker

"Geeze, Ponytail Mike - I told you before we departed the office to confirm the race schedule!"

Submitted by Phil Danskin



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