



Central Valley Chapter - California Land Surveyors Association
www.californiacentralvalleysurveyors.org

THE PRISM

Volume 3, Issue 3

May 2013

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Up
Coming
Meetings!

Date: May 22, 2013

Time: 6:30 p.m.

Location: Perko's @ 901 North Carpenter Road, Modesto

Speaker: Steven J. Martin, PLS EBMUD

Topic: GPS Specifications and the PRC

Date: June 26, 2013

Time: 6:30 p.m.

Location: Perko's @ 901 North Carpenter Road, Modesto

Speaker: Michael Durkee, Attorney at Law, Wactor & Wick LLP

Topic: To Be Determined

Announcements

2013 Membership Drive ends with success

Central Valley Chapter's membership drive for 2013 concluded in April with a record number of members for our chapter. But there is still plenty of room to grow. If you are not a chapter member and would like to support your local CLSA Chapter it's not too late. You can pay your 2013 chapter dues online through the [chapter website](#).

Central Valley Chapter wins Website of the Year

It's been announced that the Central Valley Chapter has been awarded Web Site of the Year. An award was issued at the 2013 CLSA/NALS Conference in Reno, NV

State Specific L.S. Exam to be offered in October

BPELSG announced March 18, 2013 that the California Land Surveying Exam will be offered October 28, 2013. This will begin the biannual offering of the California State specific portion of the licensing examination for candidates wishing to obtain licensure as a California Professional Land Surveyor. This additional testing date is being added to fulfill the board's desire for state examinations to coincide with the testing cycles for NCEES examinations and to offer more frequent opportunities to obtain licensure for candidates.

Chapter Waives 2013 Dues for Unemployed Members

At the October, 2012 meeting the Central Valley Chapter voted to waive chapter dues for any members (or new members) who have become victims of the current economic downturn and are unemployed. Please fill out the Membership Application, enter "Unemployed" on Line 7 for the Name of Firm, Agency or College, submit your application, and your 2013 chapter dues are waived.

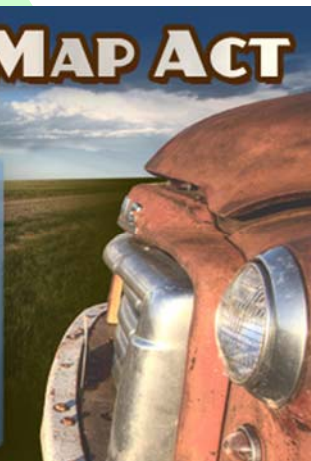
[Click here for the 2013 Membership Application](#)

THE SUBDIVISION MAP ACT

A One-Day Seminar

This seminar provides guidelines for effective use of the Subdivision Map Act.

- New Legislative and Judicial developments in 2012
- When the Map Act applies (and when not)
- What kind of Map (tentative/final or parcel map) to use
- Exemptions and Exceptions under the Map Act
- Life of Tentative Map
- Conditions of Approval/Exactions/Dedications/Fees
- Creative mapping approaches
- And more...



Mark Your Calendars

1010 10th Street, B300
Modesto, CA - June 26, 2013

More information available on
Central Valley Chapter Website

Classes, training, and continuing education

CAD Masters — AutoCAD Level I (3-Day Course)

June 10-12, 2013, Walnut Creek
June 17-19, 2013, Fremont
June 24-26, 2013, Sacramento
July 8-10, 2013 Walnut Creek
July 22-24, 2013, Sacramento

[Register here](#)

CAD Masters — AutoCAD Level II (2-Day Course)

June 3-4, 2013, Walnut Creek
June 27-28, 2013, Sacramento
July 1-2, 2013, Fremont
July 15-16, 2013, Walnut Creek

[Register here](#)

CAD Masters — AutoCAD Level III

July 22, 2013, Walnut Creek

[Register here](#)

CAD Masters — Civil 3D for Surveyors (2-Day Course)

June 10-11, 2013, Sacramento

[Register here](#)

Land Use Navigators — Subdivision Map Act Seminar

June 26, 2013, Modesto

[Register Here](#)

ACSM/ESRI Annual Survey Summit

July 6-9, 2013, Manchester Grand Hotel, San Diego

[Register Here](#)

If you have information about a training or class, please submit to: editor@californiacentralvalleysurveyors.org

Editor's Message



A MOMENT OF SILENCE

The following was printed in the January, 2012 edition of The Prism. This is being reprinted to honor Mr. Tom DeLaMare, L.S. 3407, who passed away on April 29th, 2013 at his home in Modesto. He will be greatly missed by both the Surveying and Engineering communities.

Tom was awarded the Central Valley Chapter's first Life Member Status in January, 2012 The following was the acknowledgement from that newsletter:

Our first Lifetime Membership was awarded to Tom DeLaMare.

Tom DeLaMare has been involved with surveying for over 50 years. He was attending Modesto Jr. College in 1959 when he applied for a chainman position with the City of Modesto. He was hired to work under the City Engineer, Roy E. Fredrickson. That started his long and distinguished career in Land Surveying. Tom received his license for Land Surveying in 1967, and then passed the exam for his RCE in 1983. Currently, Tom has several family members following in his Engineering/Surveying professional footsteps, including 1 Civil Engineers, 2 Land Surveyors, 1 Engineer-In-Training, 2 President/CEOs, & 5 Principals.

Tom leaves behind his wife Lee of 55 years, 4 children and 4 grandchildren. I would like to take this time to offer the DeLaMare Family my deepest sympathies for their loss. He was a very special person.

If you would like to comment on this topic or suggest another, please submit it to:

editor@californiacentralvalleysurveyors.org

CAD Tips & Tweaks



Working With Route Alignment Data: Part 1

By Landon Blake, PLS

Introduction:

Welcome to the fifth installment of *CAD Tips and Tweaks*. As a reminder, all of the source code we discuss in this column is released under open source licenses. All of the media content for the column is released under a Creative Commons license.

In the last article we learned how basic data types in AutoLISP can be structured as a list. In this article, we'll have a brief introduction to route alignments, and then we will see how we can store station data in a list using the knowledge we gained in the last installment of *CAD Tips and Tweaks*.

Working With Route Alignments

A route alignment allows surveyors to describe horizontal location in reference to a linear feature. (A profile allows surveyors to describe vertical location in reference to a linear feature.) Route alignments are used in this way in engineering and construction surveys for roads, canals, railroads, pipelines and other linear features. GIS professionals also use linear referencing.

The key to working with route alignments in CAD or GIS software is a linear referencing engine. This engine has one main purpose: to transform between northing and easting coordinates and positions based on a route alignment. Typically, positions based on a route alignment are stored as a station/offset pair. The station is the distance along the linear feature from a start point. The offset is the distance of a subject location left or right of the linear feature.

Over the next several installments of *CAD Tips and Tweaks* will plan in implementing a linear referencing engine and route alignment manager that will allow us to work with route alignments and associated station/offset data in CAD.

We'd like our route alignment manager to allow us to do the following:

1. Define a point based on a route alignment and station/offset pair.
2. Define the station/offset along an alignment for a point.
3. Create and edit route alignments.

We are going to start simply by seeing how we might structure and store station/offset data in CAD using AutoLISP.

Creating a Station/Offset Pair Data Structure

Try typing this code in the CAD command line:

```
(alert "AutoLISP programming is a great hobby.")
```

Make sure you include all of the parentheses and the quotations as shown above.

When executed, this code should display a dialog box with the message "AutoLISP programming is great hobby."

Here is the basic syntax used to pass basic data types to AutoLISP functions:

```
(function-name argument-1 argument-2)
```

You have the opening parentheses, then the name of the function, which is followed by a list of arguments passed to the function separated by spaces.

Organizing Basic Data Types In a List

What are some data elements that we'd like to store and manage for a station/offset pair? Here is a preliminary list of these elements:

1. Station/Offset Pair Identifier
2. Route Alignment Name
3. Distance from Start Point (Station)
4. Offset Distance
5. Offset Side (Right or Left of Route Alignment)
6. Description

Continued on page 8

National News

The Surveyor & the Tree - Part Two

Tree Law, a Comprehensive Review

Written by C. Barton Crattle, LS, CFM

In the first installment, we studied the distinctions of tree ownership and the specific ways they affect the surveyor's client. In this final installment, we will tell of the responsibilities and ramifications of tree ownership with damages and rewards being explored.

The previous installment ended with the tree and the adjoining owner. What were his remedies and his responsibilities for roots and branches from his neighbor's solely owned tree?

So, what are the tree owners' responsibilities for personal injury and property damage caused by his tree? Not too long ago, the "rural" tree owner had a set of standards distinctly different from those affecting the "urban" tree owner. The rural tree owner for the most part had no liability for any damage or injury caused by his tree. A number of fairly recent cases prove this distinction is becoming muddled and the clarity of the rural/urban dichotomy is disappearing. If a tree is obviously rotting or dead, the tree owner probably will be held responsible. Nearly universally, much like proving negligence in the case of a surveyor, the tree owner will be held to a duty of care or the duty of common prudence. Under similar circumstances, what would the average and prudent land owner do? If the tree owner knows or should have known the tree posed a threat of damage or injury, most likely, the owner will be held liable. This can range from tree roots raising a sidewalk so someone trips and is injured to branches or entire trees falling from blight, rot or prior damage caused by natural causes.

Should a tree merely fall, it's not always easily explained away as an act of God. In July, 2012, a 40 ton tree simply fell onto a traveled roadway in Fairfax, Virginia. A 64 year old gentleman had the misfortune of driving down that road in his Mercedes at the precise time the tree fell. He lost his life.

The Fairfax Urban Forest Management Director showed up on site and immediately ordered the destruction of a second massive oak nearby. When the 100 foot length of the original tree was inspected, it was found that 98% of its roots were rotten. It was also found that the tree had suffered from lopsided trimming due to utility line clearing. By mid-August, the Virginia DOT had identified 59 dead or declining trees on their right of way within the area, and all were slated for destruction. There is a term "hazard tree." This is a tree with a defect and a target. That would be a house, sidewalk or roadway in the path of an unstable tree (article by Pihlaja and Stromme). Was the gentleman's demise due to an act of God or was it negligence?

According to the article from the Bench and Bar of Minnesota (Pihlaja and Stromme), to qualify as an act of God, all of the following elements must be met: 1) the accident must have happened from a force of nature that was unforeseeable; 2) that force must have been the sole cause of the accident and 3) the accident could not have been prevented by using reasonable care. The necessity of hiring an attorney cannot be stressed enough.

"For a view" In certain circumstances, rights to light and view are protected under English common law. Property owners in the U.S. are not afforded those same rights except by statute or ordinance. The use of solar power has probably been the impetus for the majority of local light/view ordinances. The disproportionate value of a tract with a view is best insured by private easement. Some localities have adopted ordinances aimed at protecting views but for the most part private easements are the best method. Be certain, before clearing trees, your client knows well where the line lies and to cease all clearing at that line. In an ongoing New Jersey case, to enhance his view, the uphill property owner cut down 221 trees on his neighbor's property. The offender's attorney claims his client thought it was his property, it being on a hill and all, it was confusing just where the line was. The Police Chief disagreed saying "a few feet he could understand. Several hundred, not so much." Charged with second degree theft and criminal mischief, the perpetrator is accused of cutting down \$1 million dollars of trees and "faces 10 years in jail... For a view." The necessity of hiring a surveyor cannot be stressed enough.

[\(Click for Complete Article\)](#)

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State News

Rules of the Game: Coordinates as Boundary Evidence

By Teresa L. Smithson, P.L.S., MRICS

Case law has established vector measurements, sometimes referred to as “metes,” “angles and distances,” or “courses and distances,” as factual evidence for the location of a property boundary, albeit last-resort evidence. However, coordinates as boundary evidence have traditionally been regarded with very low to non-existent credibility by the courts and are seldom mentioned in court rulings.

According to a Maine court, *"We consistently have held that what boundaries a deed refers to is a question of law, while the location of those boundaries on the face of the earth is a question of fact. If facts extrinsic to the deed reveal a latent ambiguity, then we determine the intent from contemporaneous circumstances and from standard rules of construction. A basic rule is that boundaries are controlled, in descending priority, by monuments, courses, distances, and quantity, unless this priority produces absurd results. The physical disappearance of a monument does not end its use in defining a boundary if its former location can be ascertained"* (Theriault v. Murray, 1991). This priority of evidence has been affirmed repeatedly by the courts since the 1800s: Beckley v. Bryan and Ransdale [1 Ky (Ky. Dec.) 91 (1801)], M'Iver's Lessee v. Walker (Overton's Tennessee Reports, Vol II, 1814), Bradford v. Pitts, 2 Mills. Const. Rep. 115 (S.C. 1818), Cherry v. Slade's Administrator, 3 Murph. 82 I N.C., 1819, Riley, administratrix, & c v. Griffin, et al, 16 Ga. 141 (1854).

The tools, methods, and procedures employed in the practice of boundary surveying are not static or immutable; these are dynamic, and it is not without precedent that judicial views may adapt to follow. For example, the growing usage of global navigation satellite systems (GNSS) by today's land surveyor is changing boundary survey procedure standards (where practical and appropriate) by implementing a coordinate measurement system. As stated in Clark on Surveying and Boundaries, sixth edition, “The technical field of surveying has progressed faster than the courts' acceptance of the results of this technology ... Before the courts will accept any new scientific method, it must be proven to the court's satisfaction that the results are dependable” (Robillard & Lane, 1992, §31.09).

After more than 20 years of development and refinement of GNSS usage for boundary surveying, the technology has become dependable with repeatable results. In Boundary Control and Legal Principles, Brown recognizes the importance of precisely determined coordinates: “If a monument is found and the coordinates of the monument are precisely determined by an acceptable method, and then the monument is later lost, the coordinates so established will probably form the best available means of re-establishing the former position or providing an area of search to look for monuments.” He includes newly set monuments by stating, “If an original monument is set ..., the coordinates will probably be the best means of restoring the corner, if lost.” He continues, “Coordinates are an informational aid ...” (Brown 1995, pp. 285-286). Since 1995, the technology has surpassed this basic tenet, and coordinates have become the virtual monument.

The courts should consider coordinates as factual evidence at least equal to vector measurements in establishing lost original boundary corners. This assertion is based on the facts that 1) accurate GNSS coordinates are based on spherical geometry, not plane geometry (used by more traditional surveying methods), and therefore they more accurately reflect how the boundary lines were either created or retraced using geodetic-quality GNSS equipment; 2) geodetic receiver GNSS coordinates are reliable, dependable, accurate, and precise when properly collected and defined using a geodetic datum; and 3) there is a plethora of metadata and coordinate information on surveys filed with local jurisdictions, especially those inserting surveys into the local geographic information system (GIS), that provide valuable evidence for retracing a survey.

[\(Click for Complete Article\)](#)

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CLSA EDUCATION FOUNDATION

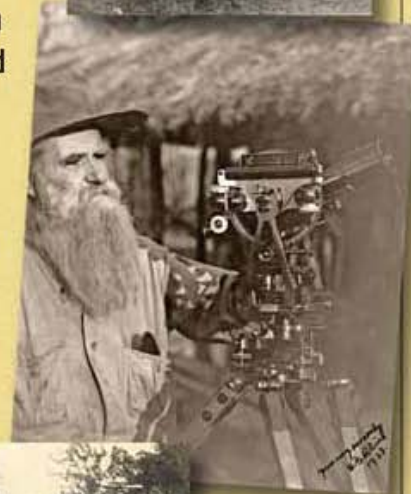
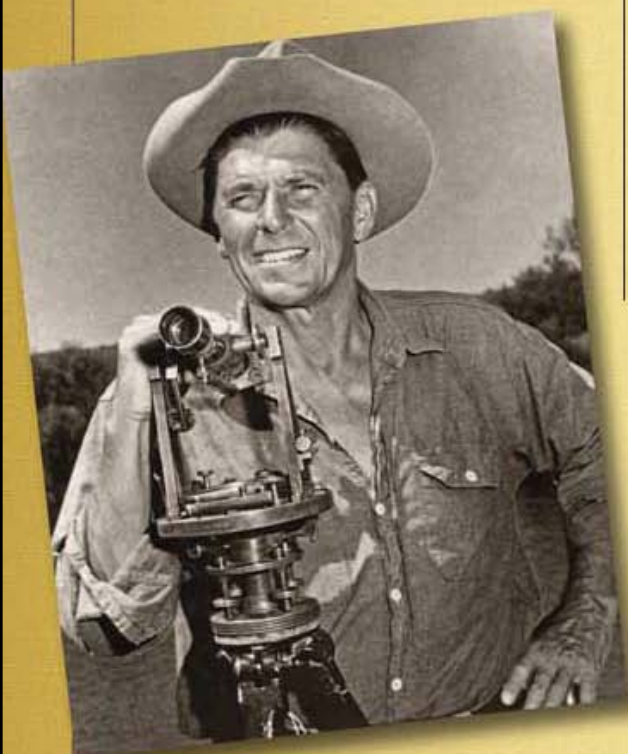
Land Surveying Photo Gallery

Unique Historic Photos Now Available for Purchase! Order Today!



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

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



Order online at: clsaphotos.smugmug.com

It's In There

Professional Land Surveyors Act, §8772.

Marking of Monuments—Application of Section Protection of the Public

2013 Any monument set by a licensed land surveyor or registered civil engineer to mark or reference a point on a property or land line shall be permanently and visibly marked or tagged with the certificate number of the surveyor or civil engineer setting it, each number to be preceded by the letters L.S. or R.C.E., respectively, as the case may be or, if the monument is set by a public agency, it shall be marked with the name of the agency and the political subdivision it serves.

Nothing in this section shall prevent the inclusion of other information on the tag which will assist in the tracing or location of the survey records which relate to the tagged monument.

Black's Law Dictionary defines "monument" as: In real-property law and surveying, monuments are visible marks or indications left on natural or other objects indicating the lines and boundaries of a survey. In this sense the term includes not only posts, pillars, stone markers, cairns, and the like, but also fixed natural objects, blazed trees, and even a watercourse.

All licensed land surveyors or registered civil engineers shall tag their monuments, this is a **SHALL**, no exceptions. The only difference is if it is being set by a public agency, then the one in responsible charge does not have to put their number, just the agency and political subdivision. It is not required for City or County Surveyors/Engineers to mark their license or registration number on the monuments. But you might ask your selves this, "Why wouldn't they?"

If there is a section in the Professional Land Surveyors Act or Subdivision Map Act that you would like to have discussed or you have a comment on, please send your request to:

editor@californiacentralvalleysurveyors.org

58 Counties. 13 Million Parcels.

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The advertisement features three overlapping map images. The top-left map is a technical survey plat with property lines, bearings, and distances, including a circled number '403'. The bottom-left map is an aerial photograph of a residential neighborhood with a white information box overlaid that reads: '511-2483-201-2005 (SAC) FERGUSON CATHERINE & CHRISTOPHER 2805 COLLEGE AVE SACRAMENTO CA 95818 9565'. The right map is a street map showing a grid of streets including 11th Ave, 12th Ave, College Ave, and Brockway Ct. Overlaid on the maps are two call-to-action boxes. The top one is dark blue with a white location pin icon and the text 'LOCATE Any Property'. The bottom one is red with a white download icon and the text 'DOWNLOAD GIS Shape Files'. To the right of the maps, the text 'Call us today to begin your FREE 2-day trial!' is displayed in a large, bold font.

Call us Toll Free: 1-888-217-8999
Located in Folsom, CA

Visit us at: www.ParcelQuest.com

Working With Route Alignment Data: Part 1, *cont. from page 3*

As we talked about in the last installment, the basic structure to organize data in AutoLISP is a list. How do we store the six data elements listed above for a station in an AutoLISP list?

Let's create a list that represents a route station. Here are the six data elements we want to store for our sample station:

State Highway 4 Eastbound Centerline

1. 1001
2. 24532.11
3. 15.86
4. Right
5. Start of retaining wall.

Here is the AutoLISP code to create this list and store it in a variable named "SO-1001":

```
(setq SO-1001 (list "State Highway 4 Eastbound Centerline" 1001 24532.11 15.86 "Right" "Start of retaining wall."))
```

After this line of AutoLISP code is execute, the variable "SO-1001" will contain the list with our six data elements for this station/offset pair.

Sneak Peek

In our next installment of CAD Tips and Tweaks we will write some code to create station/offset data structures from strings entered at the command line. Then we can create station/offset data structures from text files and later from a CAD dialog.

THE SUBDIVISION MAP ACT

A One-Day Seminar

This seminar provides guidelines for effective use of the Subdivision Map Act.

- New Legislative and Judicial developments in 2012
- When the Map Act applies (and when not)
- What kind of Map (tentative/final or parcel map) to use
- Exemptions and Exceptions under the Map Act
- Life of Tentative Map
- Conditions of Approval/Exactions/Dedications/Fees
- Creative mapping approaches
- And more...

Sunnyvale - March 28, 2013

Monterey - March 25, 2013

Burbank - May 23, 2013



Puzzle Page

The Puzzle: Five land owners needed work done by a local surveyor. Determine the name of each client, location and type of project & the amount each paid

| | Carole | Daryl | Frederick | Isaac | Mario | Blue | Green | Orange | Pink | Red | ROS | LLA | CR | LD | Merger |
|--------|--------|-------|-----------|-------|-------|------|-------|--------|------|-----|-----|-----|----|----|--------|
| \$350 | | | | | | | | | | | | | | | |
| \$400 | | | | | | | | | | | | | | | |
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| Orange | | | | | | | | | | | | | | | |
| Pink | | | | | | | | | | | | | | | |
| Red | | | | | | | | | | | | | | | |

CLUES

1. Of the customer who lives on Blue Court and Daryl, one paid \$500 and the other was the Corner Record (CR).
2. The customer who lives on Blue Court paid 50 dollars less than the Lot Line Adjustment (LLA).
3. Of Isaac and the customer who paid \$450, one was the Record of Survey (ROS) and the other lives on Orange Street.
4. Daryl paid less than the person who lives on Orange Street.
5. The Corner Record (CR) paid 100 dollars less than the person who lives on Green Drive.
6. Neither the customer who lives on Red Street nor the person who lives on Green Drive was the customer who paid \$500.
7. Of the Merger and the person who lives on Green Drive, one was Carole and the other paid \$550.
8. Frederick was either the customer who paid \$350 or the customer who lives on Green Drive.

Answers to last editions puzzles:

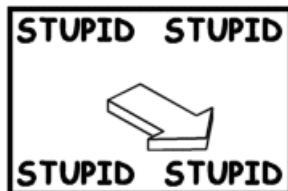
Each puzzle represents a common term or phrase.

PUZZLE 1



for instance

PUZZLE 2



down right stupid

PUZZLE 3



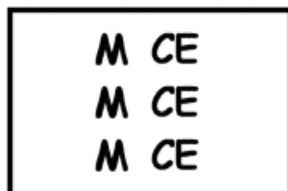
too little, too late

PUZZLE 4



green with envy

PUZZLE 5



three blind mice

PUZZLE 6



man overboard

Classifieds

Personal Collection of Antique & Vintage Surveying Equipment

I've decided to start down sizing and am selling my personal collection of antique & vintage surveying and drafting equipment. Although I never practiced land surveying, I managed to obtain quite a nice variety of transits, alidades, levels, tripods, rods, plumb bobs, compasses, etc.

Gregg Halladay

g.halladay@sbcglobal.net

(209) 649-1849

Multiple Temporary Seasonal positions for Forest Service

The Intermountain Region's Boundary and Title Management Program is currently advertising temporary seasonal (three to six month) employment opportunities for the 2013 field season throughout the region. The openings include Surveying Aids, Surveying Technicians, and Lead Surveying Technicians. Some of the duties will include, assisting in surveying efforts by collecting and recording data, and assisting in the measuring of distances. Use surveying instruments such as total stations and Global Positioning System equipment, conducting traverses with total stations, and measuring small land areas to obtain rough estimates of yardage to be excavated, or to determine approximate location of areas to be mapped. The Lead Survey Technician will serve as a team/work leader, leading team efforts in the development, implementation, and/or evaluation of program or project responsibilities as well as the duties of the Survey Aid and Technician.

Go to www.usajobs.gov for more information

Sr. Survey Technician Specialist

Psomas Engineering is looking for a Sr. Survey Technician Specialist for it's Oakland Office.

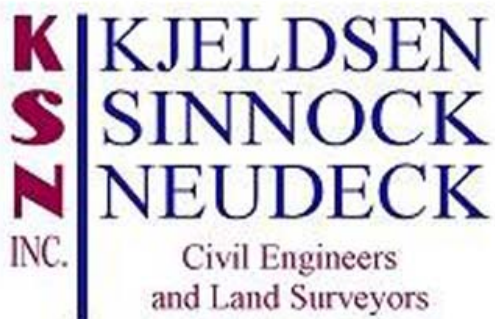
This is a highly technical position supporting Field Surveys at our client site. In this position you will provide responsive high quality courteous service for clients and coworkers, representatives of outside agencies, consultants and contractors, and members of the public. Some position duties include, but not limited to post-process GNSS/IMU data, perform QA/QC checks, create primitive object surfaces, design 4d models and calculate construction staking layout locations

For consideration please submit your resume online at: psomas.applicantpro.com/jobs/26240.html

Survey Technician/Land Surveyor

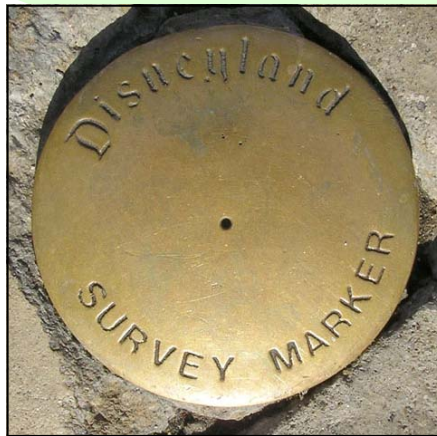
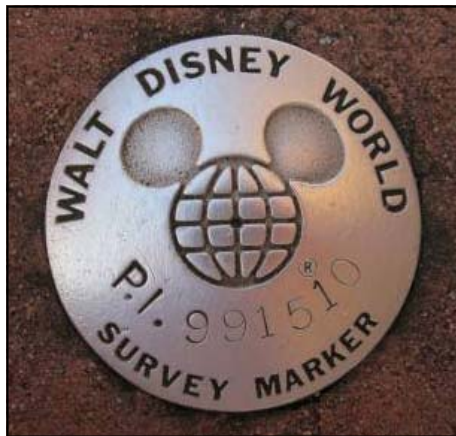
Aliquot Associates, a full service civil engineering and land surveying firm established in 1980, seeks a contract Office Survey Technician to supplement our Survey Department. Contractor/Applicant must have a minimum of 5 years experience in office preparation of boundary, topographic surveys, and construction staking calculation. LSIT preferred. Highly skilled in AutoCAD 2005 or later. Hourly contract rate depending on experience. This position would be on an as needed basis, and may work into a full-time position as our business requires. Email resume to hr@aliquot.com.

Have equipment to sell? Looking for a great deal? Check out the [CLSA Forums!](#)



Pictures of the Issue

Even Disney understands the importance of Surveying!



If you have a historic or interesting photo you would like to see in a future edition of The Prism, please submit to:
editor@californiacentralvalleysurveyors.org

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