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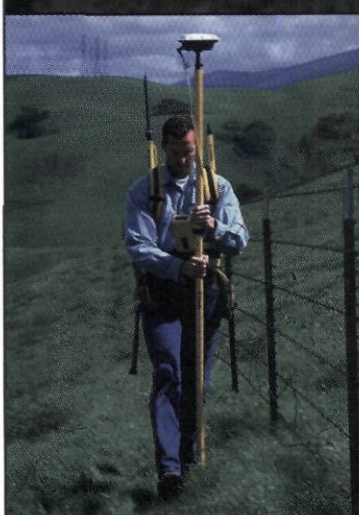
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NO. 112



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The California Surveyor

is the quarterly publication of the California Land Surveyors Association, Inc. and is published as a service to the land surveying profession of California. It is mailed to all Licensed Land Surveyors in the State of California as well as to all members of California Land Surveyors Association, Inc. *The California Surveyor* is an open forum for all surveyors, with an editorial policy predicated on the preamble to the Articles of Incorporation of the California Land Surveyors Association, Inc. and its stated aims and objectives, which read:

"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 the Land Surveyors and their work."

PERSONNEL

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The California Surveyor

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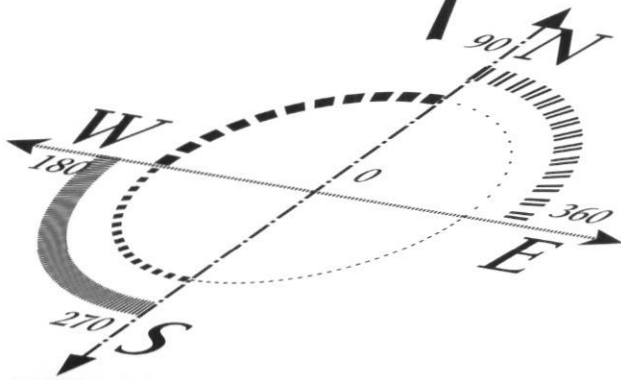
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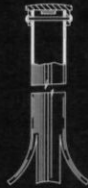
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LETTERS TO THE EDITOR

■ ED GRIFFIN MEMORIAL SCHOLARSHIP AWARD

I would like to express my sincere appreciation for awarding me the 1996 Ed Griffin Memorial Scholarship Award. I can only hope that I will follow, in some measure, the large footprints left by this BLM surveyor. His dedication to his profession can be a direction for all of us, and I find his dedication most honorable. The senseless source of his death was a reminder to me of the fleeting nature of our lives. Receiving his scholarship reminds me that, after our passing, the testimony of our life is our actions while we were alive (and how we are remembered).

Like Ed, I have tried to give back to the profession on a regular basis, as past president of the Fresno State Chapter of CLSA, as a board representative, and as a member at large. Like Ed, I believe that we all owe something to the profession that supports us; and like Ed, I hope to have a positive impact.

The funds that were so generously given me were spent directly on my education. Books took a sizable portion, with the rest going towards financing my senior project (GPS-ing the four highest mountains in California, in an effort to find a higher degree of precision with GPS post-processing).

Let me close with my heart-felt thanks, and the hope that I will soon be repaying all those involved in this gift by my continuing support of the profession as a graduate of the Fresno State Program.

Robert Nielsen

■ JAMES E. ADAMS AWARD

I would like to thank you for the generous scholarship that I received in honor of James E. Adams at our 35th Annual CSUF Surveying Engineering Conference. This scholarship enables me to stay determined and focused on my education instead of having to find a job that may distract my studies. I plan to use this award to help pay for this spring semester tuition and books. Without the continued support from CLSA, students like myself, may not have the financial opportunities to excel in programs such as Surveying Engineering. Thank you, your support and concern is greatly appreciated.

Walter John Shoup

■ CURTIS M. BROWN SCHOLARSHIP

The San Diego Chapter of the California Land Surveyors

Association is offering its 1996-1997 Curtis M. Brown Memorial Scholarship of \$1,000 to a selected student in a California university who fulfills the following requirements.

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The deadline for receipt of the application is June 15, 1996. Applications may be requested from the San Diego Chapter of the CLSA by sending a self-addressed stamped envelope to:

San Diego CLSA Scholarship
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San Diego Chapter

■ SKUNK ANTIDOTE

Anybody with a nose can probably tell you a few things about skunks. In fact most folks can tell you when there's one in the area long before it can be seen, as if you needed to be told. The odor of a skunk is certainly one of the best known smells in the animal kingdom.

As a pet owner I have had more run ins with the business end of a skunk than I care to recall. I tried the old wives tale, home remedies to quell the smell, with absolutely no success. I always failed to rid the pet of its repellent odor, and the still-reeking pet had to be banished from the house. This can be a revolting development when the skunk misses the pet but catches the owner.

It was just this sort of revolting development that led me to inquire of the U.S. Department of Agriculture for a high tech, or at least highly effective solution to get me back in my own bed (to this day, I fail to understand why the dog favors that spot on the porch). A young lady, of no less than saintly status, turned me on to a short paper by a guy named Paul Krebaum.

Seems Paul knows a thing or two about smells. As a chemist at Molex Inc. in Lisle, IL, he occasionally tangles with vile-smelling substances. When the stink becomes over-

powering, Krebaum relies on chemical tricks to spare his nose.

Krebaum relates he faced his biggest challenge when a co-worker came to work fuming (pun intended) over a pet cat that had lost a losing battle with the business end of a skunk. Well Krebaum came to the rescue by prescribing a concoction of common home ingredients — one quart of off the shelf 3% hydrogen peroxide, a 1/4 cup of baking soda, and a teaspoon of liquid soap (dish soap, not laundry — it rinses out quicker) — that saved the fragrant feline from exile. The co-worker bathed his pet in the solution and applied a tap-water rinse, and the smell instantly vanished. I've tried it myself more times than I care to admit and it has worked every time.

The success of the recipe stems from Krebaum's extensive experience with "thiols," the chemicals that impart a stench to skunk spray, decaying fecal matter, decomposing flesh and other such malodorous matter. The prescribed concoction neutralizes thiols by inducing them to combine with oxygen, supplied by the hydrogen peroxide.

Krebaum has not tried to market his skunk potion simply because there is no way to store it. "If you put the ingredients in a sealed bottle! the whole thing will explode," Krebaum warns! Take it from someone that has tested the warning, use a bucket! So next time you or someone you know spies that rosy red orifice staring back at you from the bush your looking in, take heart — the solution is as close as the drug store.

Marc R. Van Zuuk, P.L.S., President, Gold Country Chapter, CLSA

■ METRICATION FOR ORANGE COUNTY SURVEYORS

On April 26, 1994, the Orange County Board of Supervisors (BOS) approved establishment of January 1, 1997, as the date after which plans and specifications for Environmental Management Agency (EMA), Public Works (PW) projects will be metric. This means that all PW projects administered by EMA, whether in unincorporated County or not, will be metric. The BOS also directed EMA to study other EMA activities in consultation with the Orange County Professional Liaison Committee (PLC) Task Force.

The PLC membership is composed of the following: ASCE, BIA, Cal Trans, CELSOC, CLSA and EMA. A subcommittee of the PLC consisting of Skip Christensen, CLSA; Harvey DuBose, Stewart Title Company; Allen Faltys, Orange Coast Title Company; George Eachus, Orange County Assessor; Mel Gaylor, Cal Trans; and the Orange County Surveyor met to discuss issues concerning metric mapping and legal descriptions. The committee decided that only metric units will be used on mapping and legal descriptions and no dual units will be permitted. Surveyors have for many years converted chains to feet and vice versa, so the committee felt this simple conversion would not be a problem for today's Surveyors. The other factor considered was economic benefit. There is no cost savings if dual units are used.

To date, twelve (12) entirely metric Records of Survey have been filed with the County Recorder. On January 1, 1997, all Records of Survey prepared by the County Surveyor will be metric, as well as all Records of Survey contracted with the private sector for County Public Works facilities. All surveying and mapping for County facilities, whether done in-house or contracted, will be required to be in metric.

Concurrently, another effort is under way to require unincorporated subdivision maps, including grading, zoning, and the subdivision code to be a metric requirement sometime in 1998. The plan is to allow for completion and approval of the appropriate manuals and codes and allow the private sector one (1) year to get ready.

Orange County has an excellent First-Order Horizontal Control System of 2,400 points with NAD 83 metric values at approximate 1/2-mile grid. 1,800 first-order bench marks in (NAVD 88) metric elevation are conveniently spaced throughout the County to facilitate performing cost-efficient metric surveys. On January 23, 1996, the Orange County Joint Professional Practices Committee endorsed the use of APWA metric sizes for iron pipes and monuments.

Orange County Surveyors are approaching the year 2000 with all the tools and resources necessary for a successful and facile conversion to the metric system.

Let's go for it!

John Canas, County Surveyor

■ MORE ON METRICATION

Brilliant letter by William J. McGee (Winter 1996).

If metrication is inevitable, why does the USDI BLM still use chains and links in the PLSs? Surveyors of all people should recognize the fallacy of "switching to the one true measurement." The people of the future, who can only divide and multiply by 10, I believe will be high school dropouts and NOT Land Surveyors.

Duane Quinn

■ STILL MORE ON METRICATION

After reading the "Opposition to the Metric System" letter written by Mr. William McGee, PLS, I pondered the possibility that the switch from a foot based system to a metric based system would adversely affect the land surveying community. After some thought, I realized that this claim is unfounded. In the past, our American surveying ancestors have successfully implemented a unit change from chains to feet. The chain based maps of our public lands that our surveying ancestors prepared are all filed in County Recorder offices throughout the state. Today, a surveyor's retracement map of the same public lands is made using foot units- even though the original survey was in chains. The surveyor makes the conversion from chains to feet and the foot unit completely replaces the chain. As the case with a metric based system, the foot unit will be completely discarded in favor of the meter.

When modern surveyors retrace the footsteps of the original surveyor, they must recall the equipment and procedures used at the time of the original survey. Hypothetically, if a recovered public lands monument as set by the original surveyor is off by 33 or even 66 feet, then its conceivable that the note keeper may have forgotten to count a chaining pin. Insight and understanding of the limitations of our surveying ancestors is far more critical than the system of units used in preparing a map.

As the metric system becomes fully implemented, the use of the foot based system will soon pass, and future surveyors

will look at the foot the same way that today's surveyors look at chain.

Robert Bronkall, BSCE, LSIT

■ AND EVEN MORE ON METRICATION

This letter is written in support of the recently-published letter by William J. McGee, in opposition to the metric system for surveys. I wholeheartedly agree with Mr. McGee. I especially agree that I have not seen any public clamor for metrication. It is coming (down) from the Federal Government.

The Federal Highway Administration's intends to force metric signs on the American public, wanted or not. Under congressional pressure they have quietly postponed plans for actually changing the highway signs, but in the meantime are forcing the states to start using metric design for all highway and bridge plans.

This is not just a simple matter of dividing all of the measurements by a factor. It requires a complete restructuring of every facet of the design and build process, and will involve tremendous costs. Taxpayer costs, I might add. This is yet another unfounded federal mandate. The cost of changing software alone will be in the tens of billions of dollars, because metric has a different display format using spaces and commas in place of our commas and decimals.

(Oops! I forgot. In the metric system we have to say thousands of millions, not billions. In metric a billion is a million million. Think there will be many lawsuits over the blunders these little differences will cause? In our litigious society? Hah!)

Then there is the cost of converting all of the standard construction materials, and the problem of soft versus hard

conversions. What is now a 5/8" iron rebar would be 15.875 millimeters in a hard conversion, but will have to be reshaped to 16mm in a soft conversion. Changing the size even that tiny amount will mean all of the standard design criteria will have to change.

All of the standard plans developed over the past hundred years have to be changed. All of the textbooks will have to be rewritten. All of the software will have to be changed. All of the building materials will require new specifications and testing. All of the building trades will have to be retrained. And why? Because the Federal Highway Administration says so.

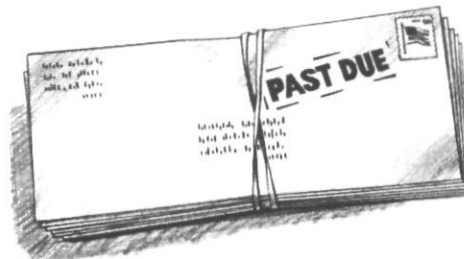
Needless to say, this cannot be accomplished without each state having a metric coordinator, or several, to travel the state and educate the state employees and design consultants on the advantages of going metric.

The states are strapped for cash for highway projects as it is. We just cannot afford to change to metric. (I can hear the counter-argument now: it will actually save money in the long run by making us more productive. The flaw with that is, if it were true the design and build firms would have made the change decades ago. We do like to improve our bottom line, you know, and we normally don't need any prompting to do that.)

Typically, the effort by the Federal government to force us to use metric measurements is fragmented. All linear measurements must change, but not angular ones: we won't be switching from degrees to grads. And, strangely enough, we won't switch to the international spelling of metric units (metre and litre vs. meter and liter).

Are the American people even aware of this mandate by a governmental agency? Do they realize the costs involved?

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Do we even need a Federal Highway Administration?

Bruce F. Small, RLS

■ FRESNO ACSM STUDENT REPORT

The ACSM student chapter at CSU, Fresno is one of the three student organizations associated with a professional surveying organization in Fresno. The purpose of the ACSM student chapter is to provide a link to the outside professional surveying, geodetic surveying and mapping world. By keeping abreast of new technology and the professionals who use that technology, students are better prepared for entering the work force after graduation. The elected officers responsible for accomplishing these tasks are: Troy Erickson-President, Rick Mather-Vice President, and Dan Schwartz-Secretary/Treasurer.

Recently, the chapter provided volunteers to help the NCS-ACSM put on the NAD-83 State Plane Coordinate workshop in San Jose. ACSM students at Fresno planned and conducted the second annual CSUF Surveying student half dome hike in early September. Chapter officers have also helped organize a tutoring program for surveying students. It has already been a busy Fall semester.

The Spring semester is, if anything, busier than Fall. We have already begun planning the annual NCS-ACSM spaghetti feed at the Fresno Holiday Inn Centre Plaza the night before (January 25) the 35th Annual Fresno Surveying Conference begins. The Fresno student chapter will also have

primary responsibility for displaying the CSU, Fresno Surveying student booth at the Annual ACSM/ASPRS meeting in Baltimore in April of 1996.

The ACSM student chapter at CSU, Fresno can be viewed as reciprocal organization. While providing surveying students with a professional focus for their future careers, we also try to keep the professional surveying community informed about the dynamic capabilities and skills that surveying engineering students at California State University, Fresno Possess. Check in at the ACSM student booth at the Fresno Conference to find out more about our activities and to give us a chance to know you.

Troy Erickson

■ TOWARDS THE NEW SURVEYING PARADIGM

Surveying Educational Excellence at Fresno State

CSU, Fresno Surveying Engineering Program is a visionary educational enterprise. This unique program serves an increasingly diverse student population, providing a modern, high-tech educational experience. Graduates are prepared to interact in the global economy. Engineering at CSU, Fresno is a nationally known program. The critical elements of this national reputation include: a strong job program for students; exceptional professional scholarship support; an annual Fresno Surveying Conference showcasing the school, students and program; the ForeSight! Newsletter, produced by the students and mailed to over 6000 professionals nationwide twice a year; ABET Accreditation; State Board of

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A CSU, Fresno Surveying Engineering Advisory Council has been created to enhance communication with the professional community. One hundred forty of the 455 Fresno Surveying graduates have responded to alumni mailings during the last five years. Several hundred surveyors attend the Fresno surveying conference each year. The market demand for Fresno surveying graduates is best summed up by Matt Webb, BS-Surveying Engineering Spring 1990:

"My success in times of recession are a testament to the abilities of a Fresno State Grad."

The Surveying Engineering Program at CSU, Fresno was accredited by ABET in 1979, the first in the nation to obtain this distinction.

Students enrolled as Surveying Majors at CSU, Fresno have gained a national reputation as the most prolific winners of national surveying scholarships, fellowships and

awards as evidenced by the number of national awards won since 1984. While practically dominating ACSM Scholarship competition, Fresno students have won four National (NSPS) Student Project of the Year Awards; 1988 (Pettley), 1990 (Amenda), 1994 (Malcom-Lim) and 1995 (Frank). Several national ASPRS scholarships have also been garnered during this period.

Steven Thumlert, an Spring 1971 Surveying and Photogrammetry graduate recently wrote:

"An FSU graduate is the best prepared person to enter the surveying profession. I wish that time and business constraints would allow me to return to school to take some of the classes that weren't offered early on."

Each of the permanent full time Surveying Engineering faculty at CSU, Fresno are committed to moving forward towards a new paradigm of educational excellence. Professors Crossfield, Hussain, Munjy and Nader eagerly anticipate the opportunities that lie ahead. We firmly believe that our Fresno State surveying graduates will continue to play an exciting and critical role in the continuing development, maintenance and modernization of our society.

James R. Crossfield



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SURVEY CERTIFICATIONS

(You Swear You Don't Sign, But Somebody Sure Does)

By Bruce F. Small

ONE OF THE THINGS I DO is perform ALTA surveys, which means I often take part in what I call "the certification ritual." It goes like this: I receive from the attorneys, usually at the last minute, their form of certification. I respond with a firm but pleasant letter explaining why no surveyor with any sense would sign the certification, they tell me that I am the first surveyor to ever state an objection to the certification, I challenge them, and they send me copies of their certifications signed by land surveyors. Let's take a look at a representative certification, all of it taken from certifications signed by a land surveyor and passed along to me by attorneys.

Surveyor's Certificate

I hereby certify to the Bank and Trust Company: (1) this survey was made on the ground as per the field notes shown on this survey drawing; (2) there are no easements or rights-of-way affecting or benefitting the property other than as shown hereon, whether or not of record; (3) all utility services required for the operation of the property either enter the property through the adjoining public streets or the survey shows the point of entry and location of any utilities which pass through or are located on adjoining private land; (4) there are no cemeteries or family burial grounds located on the site; (5) there are no violations of any applicable zoning or subdivision ordinances; (6) all improvements on the site comply with any restrictive covenants; (7) all buildings to be constructed on the site will comply with applicable building and zoning ordinances.

A few of you will recognize one or two land mines in

this certification; not many surveyors, unfortunately, will have the sense to know the entire certification is a disaster. To see why, let's go through it line by line.

(1) "This survey was made on the ground as per the field notes shown on this survey drawing." This first came to me from Texas a decade ago and has since spread across the country. Aside from the grammatical error ("as per" is redundant), field notes are not shown on survey drawings. If we did show the field notes, they would not make sense to anyone but a land surveyor, especially with the electronic data collection we use today (0006 3523.12 5768.91 B FOC).

I recently asked a land surveyor why he had signed this certification when he obviously had not shown the field notes on the survey drawing. His reply was, "Because the attorneys insisted on it." (There is a name for this activity; it is called prostitution. If you doubt that is the correct appellation, look up the definition of prostitution in the dictionary. And if you think I'm being harsh, think of what your State Board will do to a surveyor who knowingly signs a false statement because an attorney insists he has to have it.)

Suggestion: Certify that "the map or plat is based upon the field notes of the survey." I have found that this compromise satisfies everyone.

(2) "There are no easements or rights-of-way affecting or benefitting the property other than as shown hereon, whether or not of record." Surveys are typically based upon the title report furnished by the client. We depend on that title report to provide the list of recorded easements affecting the property, and if the title company omits any recorded easements, we cannot

be responsible for their omission. Certifying, in effect, that you have shown all easements transfers a tremendous responsibility to the surveyor's shoulders (for which you will pay dearly if you are wrong). As to the unrecorded easements, how could anyone possibly know about all unrecorded easements?

Somewhat related is a certification that "...there are no visible easements..." This is from an otherwise excellent FannieMae document, now much copied by attorneys around the country. Easements, of course, are not visible; they are a right (or burden). FannieMae has admitted what they intended to say was "visible evidence of easements." This is in accordance with ALTA paragraph 5(h), which requires surveyors to show "observable evidence of easements."

Suggestion: Certify that you have "shown or noted all recorded easements or rights-of-way listed in the title report, and shown all observable evidence of easements on the ground."

(3) "All utility services required for the operation of the property either enter the property through the adjoining public streets or the survey shows the point of entry and location of any utilities which pass through or are located on adjoining private land." The first problem is, what is required for the operation of the premises is an engineering, nor a survey matter. If needed, it should be part of a separate engineering report.

If the client so requests, we are required to show all observable, above-ground evidence of utility lines on the property, and the function of all overhead lines. However, we have no means of knowing what is below the ground. Utility maps sometimes give an indication, but not always. There is no reasonable way to determine with any certainty that we have shown all utility lines.

I sometimes have clients who insist that I absolutely must sign this certification, and I always tell them I would be pleased to sign it once they have excavated the site down to 50 feet while I watch (they quickly lose interest in this provision once they understand I am serious.)

Some of you may wonder what the harm could be in certifying that

you have shown all the utility lines, so let me explain with a real-world example. A surveyor was hired to perform a standard ALTA survey, and he did a commendable job. At the last hour, the lender refused to fund the multi-million dollar project until they had assurance that there were no utility lines to interfere with the new construction. The client pressured the surveyor, who rationalized that he had looked at the site, saw no evidence of underground utility lines, had checked with the utility companies, and therefore felt fairly safe. Not completely comfortable, but somewhat safe.

You can guess the rest. They started construction, and discovered the gas line right where the building was going to go. Can you guess who got blamed? Could you afford to pay for the relocation of a gas line, and heavy equipment sitting idle for a week?

(4) "There are no cemeteries or family burial grounds located on the site." Prehistoric people were on this continent for over 10,000 years. In my state, Arizona, the Hohokam, Mogollon, and Anasazi were literally everywhere. The early settlers reported the remains of pithouses as far as the eye could see in the Phoenix area. In addition, the early settlers were frequently

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buried and no records kept of the site; it is not unusual to recover their bodies during construction. All of these indicate intentional burial, and the funerary sites probably qualify as family burial grounds.

(5) "There are no violations of any applicable zoning or subdivision ordinances." How would we know? If the tenant in apartment 210 has four dogs, or is baby-sitting six children, or selling illegal drugs, those are probably violations. There is probably not much exposure with the examples given (but see the previous discussion on prostitution). Do you really want to be known as a surveyor who will sign just about anything?

Far more serious consequences can occur if there are indeed serious violations of the ordinances with respect to the construction of the site. You may understand the ordinances (and if you do, my congratulations), but not know about the hidden violations. You can bet if you certify there are none and some turn up, there will be a demand for compensation from the client who relied on your certification (even if he is the one who talked you into it).

(6) "All improvements on the site comply with any restrictive covenants." "All" and "any" are huge, all-encompassing words. Do you really want to take (financial) responsibility for the construction of the site with respect to covenants that you may not even know about? Even the private ones never recorded? Why expose yourself to financial ruin?

(7) "All buildings to be constructed on the site will comply with applicable building and zoning ordinances." I've been accused of making this one up, but I have it in writing from a very large bank. The loan officer was quite sincere in her insistence that I certify to future events over which I had absolutely no control or influence. She saw nothing wrong with this, again, because "other surveyors sign this all the time." Amazing, just amazing.

In addition to the items listed above, here are other forms of certification to beware:

"...correctly shows the location of all buildings, structures, and other improvements situated on the above premises..." All is a broad word, and would include the improvements constructed below the ground. We have no way of knowing with certainty what is under the ground.

Suggestion: Certify that you have shown "all observable, above-ground evidence of buildings, structures, and other improvements situated on the above premises."

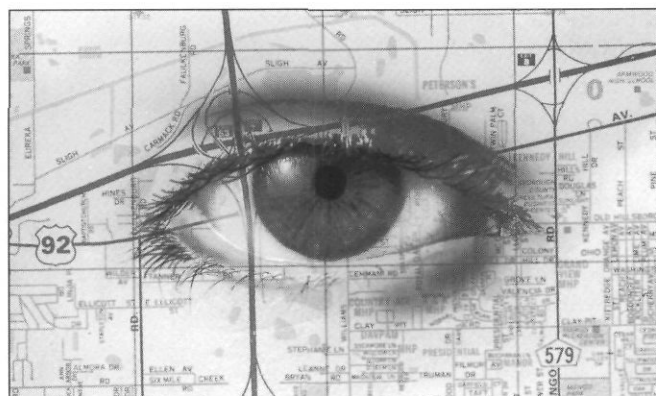
"...the dimensions of all improvements on the said premises and the distance therefrom to the nearest facing exterior property line..." First, you should restrict the certification to above-ground improvements.

Beyond that, if we did indeed dimension all above-ground improvements and show the distance to the nearest property line there would in most cases be an enormous jumble of dimensions that could not be deciphered.

Suggestion: Certify that you have shown "the dimensions of all buildings on the said premises and the distance therefrom to the nearest facing exterior property line."

In persuasion, it is important to speak in terms of the other person's interest, so allow me to explain why it is to your advantage to take an active stance in educating the attorneys who present these certifications. In simple terms: so you will stand out from the crowd and be seen as a leader. I understand that some clients want the cheapest survey they can get, and any surveyor dumb enough to sign their certification will do. However, they (the clients) are in a minority. I have a thriving business, in part from referrals by attorneys who have been impressed that I took the time to explain the certification problems to them. Contact the attorneys and explain it to them! It is a great marketing device.

[Bruce F. Small is the Senior Land Surveyor for Cella Barr Associates in Tucson, Arizona.] ⊕



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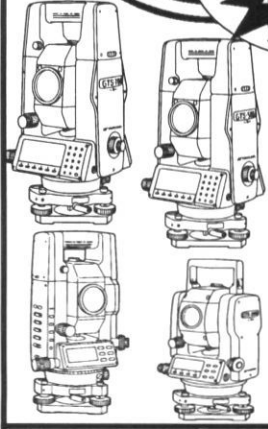
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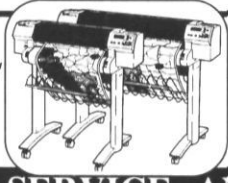
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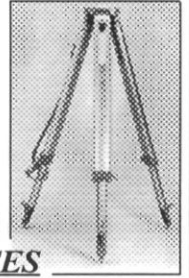
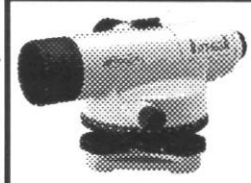


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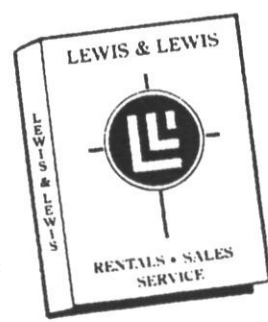
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THE THRESHOLD

By Kirk S. MacDonald

EARLY ON IN a contract, the parties are likely to be affable and get along well. You certainly don't want to contemplate (much less specifically discuss) the possibility that your client will fail or refuse to pay you for services performed. Unfortunately, non-payment is all too common. It does a great deal of good, and no harm, if you protect yourself by preserving your rights to enforce Mechanic's Lien, Stop Notice, or Payment Bond claims if the unthinkable becomes reality. The price of the first step (over the threshold) to obtain this protection is relatively small. Just properly serve a Preliminary 20-Day Notice.

The two most commonly utilized remedies to secure payment for work performed or materials furnished to a private work of improvement are the foreclosure of a Mechanic's Lien and enforcement of a Stop Notice. You may also have a right to sue on a private Payment Bond if the owner has required the general contractor to furnish such a bond. While no Mechanic's Lien is available on public works projects, there is almost certainly a Payment Bond if the prime contract exceeds \$25,000.00.

The Mechanic's Lien, Stop

Notice and Payment Bond rights are separate and cumulative. That is, you may seek to perfect one or all of the remedies. If you decide it is necessary to pursue one, pursue them all. Each provides you with a different source of funds from which payment may be obtained.

... Unless the Preliminary 20-Day Notice is prepared and served in strict compliance with the California statute, you will forfeit your rights!

On a private project with no construction lender, unless you have a contract directly with the owner or are performing actual labor for wages, you must file a Preliminary 20-Day Notice in order to be able to pursue the Mechanic's Lien, Stop Notice or Payment Bond remedies. To make it a little more

complicated, on private jobs where there is a construction lender, you must give the Preliminary 20-Day Notice even if your contract is with the owner. If you are providing services work on a public works project, you have to serve a Preliminary 20-Day Notice unless your contract is directly with the general contractor.

On a private work of improvement, a licensed land surveyor, who has furnished services for the design of the work and serves a Preliminary 20-Day Notice not later than 20 days after the work of improvement has commenced, is deemed to have complied with the requirements of notifying the owner, general contractor, and lender with respect to surveying services furnished or to be furnished.

One cannot overemphasize the importance of this Notice. Unless the Preliminary 20-Day Notice is prepared and served in strict compliance with the California statute, you will forfeit your rights!

The Notice must have a general description of the services to be provided, your name and address, the name and address of the person who contracted with you for the services and an estimate of the total price. You must be as accurate as possible.

You need the name of the owner. It should be available from the general contractor. You should take care to learn whether the person you know as the "owner" actually owns the property (known as the "fee" interest) or is only a lessee. If you actually know the owner's name, you must list it. If the general contractor provides you with the name of the owner you can successfully proceed with your Mechanic's Lien, Stop Notice or Bond remedy even if the name given you is wrong. If the general contractor does not provide you with the owner's name, be on your guard. You should make a good faith

effort to obtain the owner's name, (i.e., check the building permit). Also even though you may rely on the identity of the owner supplied by the general, it is unclear as to whether you may rely on the address given to you by the general contractor. Therefore, you may wish to ascertain the correct address of the owner by an alternative and reliable means (i.e. contact the owner directly, check the phone book).

You also want to make sure you have the name of the construction lender, if there is one. On private jobs, it is absolutely essential that you include the construction lender on your 20-Day Preliminary Notice if (1) the construction lender's name is known to you, (2) it is made available to you by either the owner or general contractor, (3) it is listed on the building permit, or (4) a construction trust deed has been recorded in the County Recorder's office and it shows the name of the construction lender.

While checking all of those sources may seem impractical, if the building permit or Recorder's records show the name of the lender, your failure to give a Preliminary 20-Day Notice to that lender will clearly invalidate any

Stop Notice which you attempt to serve and may invalidate any Mechanic's Lien which you record.

The Preliminary 20-Day Notice must be served no later than 20 days after you first furnish materials or services to the job site. If the Notice is served later than 20 days after the first delivery of materials, etc., you will not lose the Mechanic's Lien, Stop Notice or Bond rights, but your claim will cover only goods or services supplied during the 20 days preceding the service of the Notice and any goods or services furnished thereafter. If no Preliminary 20-Day Notice is served, you will have no Mechanic's Lien or Stop Notice rights and your Bond rights will be in serious jeopardy. You may be able to "resurrect" your Bond rights by service of a different notice after you complete your work, but it's dangerous to rely on this method.

The Preliminary 20-Day Notice is served by personal service or by mailing the Notice first-class, registered or certified mail to the owner or reputed owner, original contractor or reputed contractor, and to the construction lender or reputed construction lender. Type on each mail receipt before it is

sent, "Preliminary 20-Day Notice," and the name of the addressee. Retain this receipt.

Keep a copy of the Preliminary 20-Day Notice, including the filled out portion of the proof of service affidavit, or receipt by certified mail. It is essential that you keep the original return receipt (green card) after it has been returned to you from the post office. The green card is extremely important. You will need it to prove service if the matter goes to trial. Even if the owner admits receiving the Preliminary 20-Day Notice at trial, if you do not have your green card you will almost certainly lose your case. If for some reason your green card is lost, you may be able to obtain a photocopy of the record of delivery from the post office. The courts have accepted this as a substitute for the green card. Unfortunately, the post office only keeps records for about 6 months following delivery.

Should the Preliminary 20-Day Notice be sent back to your office as unclaimed or indicating a wrong address, you should keep the envelope unopened, and further investigate as to whether the address you used was correct.

The safest approach is to serve Preliminary 20-day Notices on all projects, regardless of the capacity of your client. It is easiest to make service an integral part of the process of opening up your file on the project. Service of the Notice is neither unprofessional nor a negative reflection on the character or integrity of your client. It is just good business.

Hopefully you will never need to go any further. If you don't get paid, you will be in a position to enforce your rights. The Preliminary 20-Day Notice is cheap protection indeed. Don't find yourself tripping on the threshold of opportunity. ⊕

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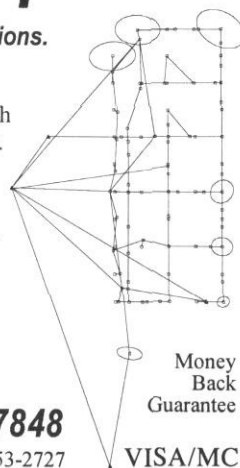
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WHAT IS A REASONABLE STANDARD OF RESEARCH AND WHOSE RESPONSIBILITY IS IT?

By Robert R. Prescott, LS

THE NATIONAL SOCIETY of Professional Surveyors (NSPS) started the process of revising the "Minimum Standard for Property Boundary Surveys" nearly a year ago. These standards were adopted by the ACSM Board of Direction in 1979. As part of the process of revision, NSPS requested each state affiliate association to review not only the 1979 NSPS Standards, but also ALTA/ACSM (now ALTA/NSPS) 1992 Standards, the NCEES Model Minimum Standards for the Practice of Land Surveying (1992) and our own state standards if we had any.

A committee met and prepared complete review of the NSPS proposed draft. One of the areas the committee recommended changes to was the section on research. We recommended the inclusion of the following language:

It shall be the responsibility of the client to furnish the surveyor with the record description and all easements and instruments affecting title to the land being surveyed, including the liber and page showing the recorded information, and all necessary reference descriptions including but not limited to those of adjoining properties. Where customary, an Abstract of Title shall be furnished to the Surveyor. If the legal description alludes to unique conditions, the Surveyor should consult other sources of information referred to in the legal description in order to assemble suitable written evidence of the corners and lines of the property.

Recently, I had a discussion with Knud E. Hermansen, PE, LS, PhD, on this subject, who feels that such a statement has no force on the client

based upon the laws. He refers to the following: ". . . No profession may, by adopting its own standards of performance, method of operation, or paragons of care, insulate itself from liability . . ."

See *Favalora v. Aetna Casualty and Surety Company*, 144 So.2d 544 (La.App. 1st Cir. 1962) quoted in *Lawyers Title Ins. Co. v. Carey Hodges & Associates, Inc.*, 358 S.2d 964,968 (La.App.1978)."

His thesis is that standards for the surveyor do not apply to the client since clients as a group had no say in the development of the standards and have no standing in the organization that offers the standards. He feels that standards are written for surveyors and cannot impose actions on the client. Actions of this sort must be negotiated between the surveyor and the client by contract (Business Practice). I believe that Mr. Hermansen makes a valid point. At my request he provided the following language for substitution: "The surveyor shall cause the client to be responsible for furnishing the surveyor with the record description and all easement and instruments affecting title to the land being surveyed, including the liber and page showing the recorded information, and all necessary reference descriptions including but not limited to those of adjoining properties. Where customary, the surveyor shall also cause the client to provide him or her with an Abstract of Title."

However, he felt that such language was not much better than what currently exists. He felt that "the standards a profession writes to govern its services to the public will reflect how the profession feels about itself and its

future." I should note that there are surveyors who feel when the client or their agent specify that a survey shall be done to a specific standard, those persons understand what the standards require for both parties. They feel the client or the agent should be bound by any provisions within the standards that refer to the client or their agent. It

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probably makes good sense for the surveyor to inform the person who is contracting for the service about any provisions within the standards that require the client to do something and what the implications are on the completion of the project. The most recent ALTA/NSPS standards use language that is similar to the above:

"...It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon the preparation of the survey..."

"...The request shall set forth the record description of the property. The record description of the property, any record easements benefiting the property, the record easements or servitudes and covenants affecting the property "Record Documents," the names and deed data of all adjacent owners, as available, and any other documents containing desired appropriate information affecting the property being surveyed and to which the survey shall make reference shall be

provided to the surveyor for notation on the plat or map of survey..."

One of the major complaints about the ALTA/NSPS Standards is that the client or their agent does not always honor this request which causes additional cost and time to the surveyor doing the survey. In these cases, many surveyors are concerned that they may end up providing these services at no additional cost or have to decline continuing with the project.

Recently, Robert W. Foster, PE, PLS, wrote an article titled, "Land Records Research: Whose Job Is It?" (Civil Engineering News, January 1994, Vol. 5, Number 12). In his article he notes that a great amount of confusion exists in terms of the definition of what constitutes acceptable research by the surveyor. This confusion exists because of the differing definitions of what constitutes reasonable research in the minimum survey standards developed by various jurisdictions. He feels that the confusion adds to, and provides liability implications for surveyors. He

1997 Slate of Candidates

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Steven C. Wilson, PLS

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Gerald "Jerry" Stayner, PLS

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does not feel that most surveyors currently see as part of their role providing research of title to discover defects in title of real property. "Standards that suggest otherwise expand the surveyor's role into that of the lawyer. With that expanded role goes an extended professional liability." In correspondence with me, Mr. Foster was concerned with our recommendation that "... the obligations of the surveyor to do a thorough job of research for the project are not relieved when the client is required to provide the record description and other information to the surveyor." He suggested that language such as follows provides a reasonable balance between the surveyor's responsibilities and their potential liabilities as surveyors most likely are currently practicing:

"Land surveyors are expected to exercise reasonable care in doing records research, but cannot be held liable for errors or omissions caused by defect in the chain of title for the property being surveyed, or for that of the Adjoiners. Title defects may be revealed through an examination of

title by those professionals trained and experienced in this area." (Current Practice)

In correspondence to me, Mr. Hermansen takes a somewhat different view, urging surveyors to expand their scope of practice by consciously taking on greater responsibility:

"...Surveyors in other parts of the world grab onto more responsibility and by doing so become more crucial to the conveyance process — perhaps indispensable... How the difference in attitude and demand for responsibility makes a difference in the profession! By abdicating responsibility to do the research, surveyors lose the chance to control the process and the information they use. They no longer have the landowner as a client. For fear of responsibility and liability they shun the sometimes litigious landowner in order to have a boss who is a title agent or an attorney willing to take responsibility for mistakes. Responsibilities carry a heavy burden (such as increased liability) but the reward is control. As attorneys are well aware, responsibility is control; control is power; and power

is money. The more surveyors are responsible for, the more they can charge for the responsibilities."

He has also developed what he considers an acceptable standard for research, noting that the standard can apply to either the surveyor doing the work or someone else that is capable of doing the research:

Surveyors shall cause a search of the public records to be made in sufficient scope and depth that a surveyor of ordinary prudence and skill would be expected to identify with reasonable certainty:

1. conflicting record and ownership boundary locations within the client's record boundaries;
2. gaps between the client's and the adjoiner's record boundary,
3. scrivener errors in historical and operative descriptions, and
4. the location of the client's record boundaries, so long as such information exists in the public records and is properly indexed.

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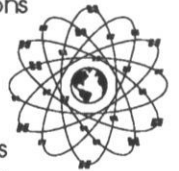
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1. are cited in public records or
2. a surveyor of ordinary prudence would reasonably believe:
 - a. to be critical in locating the client's boundaries,
 - b. could disclose a conflict with the client's boundaries,
 - c. would locate encumbrances on the client's property, or
 - d. could aid in fixing or refuting a reasonable location of the client's boundary;
3. provided, however, such private records:
 - a. are known to exist,
 - b. can be located in a reasonable time frame from a likely source,
 - c. are accessible to surveyors upon request, and
 - d. may be obtained or viewed with reasonable cost. Reasonable cost may be defined as a cost that does not exceed the value of the estimated area that would be placed in doubt by the records sought or the cost involved in compiling the information from other sources, whichever is less. (Future Practice)

Clearly, the above two examples of text meet the criteria of reasonableness in terms of definition. They do not place any absolutes on the surveyor as some definitions have in currently published standards. The latter (Future Practice) must be classified as more positive and expansive than the former

(Current Practice). The former does not require the surveyor to be responsible for the materials being used but does require the surveyor "to exercise reasonable care in doing records research" but does not hold the surveyor liable "for errors or omissions caused by defect in the chain of title for the property being surveyed." In this example, the ultimate responsibility for research does not rest with the surveyor, nor can the surveyor be considered essential to the research process, but the surveyor must certainly understand something about records research and the implication of those records on the completion of the project.

In the latter example, either the surveyor or other title professional can be responsible for the completion of records research. This standard provides an expansive role for the surveyor, but the surveyor can also decide to accept and rely on the record information of others. Clearly, the surveyor has both opportunities and responsibilities with the latter. If we have acquired the knowledge that the latter requires, why should we not take advantage of this knowledge for our own benefit and remuneration? As a professional, I believe that we should be working in obtaining the latter as a standard of practice.

Reprinted from the Empire State Surveyor, May 1994. ⊕



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WHY YOUNG AMERICANS HAVE LOST SUBSTANTIAL INTEREST IN ENTERING THE FIELDS OF SCIENCE AND TECHNOLOGY

By Dr. Max Fogiel, President
Research & Education Association

I T IS DIFFICULT to comprehend that the United States has lost its leadership in science and technology. Repeated studies and surveys by educational organizations keep reminding us that students in foreign countries possess substantially greater math and science skills.

In surveys of 175,000 students worldwide, the United States ranked almost at the bottom in math and science proficiency.

WHERE HAS AMERICAN INGENUITY GONE?

It is particularly difficult to understand how we lost our leadership when we consider that American ingenuity produced the first ones of such products as refrigerators, elevators, steam engines (railroads), automobiles, telephones, *aircraft, television, and countless other consumer products* that raised the American standard of living far above that of any other country. Such American ingenuity was practiced more by tinkerers in their garages and basements than through organized research sponsored by government and industry.

What has happened to those imaginative tinkerers who labored patiently to understand the laws of nature and used the knowledge that they gained to create improvements in our living standards? Have our current generations produced insufficient numbers of tinkerers — those with curiosity, imagination and drive — to enable us to maintain our leadership?

REASONS FOR NOT ENTERING MATH AND SCIENCE

We do not have conclusive answers to those questions, but discussions among educators center about the following:

Television

Students spend considerable time each week watching television. Perhaps television is robbing them of the time needed to engage in serious studies of the maths and sciences. It is easier on a student's mind to be entertained through television than labor over problems to be worked out in math,

science and technology.

It is also not likely to fire the imaginations of those who have successfully completed their math, science and tech courses, to go on and do bigger things with what they learned, if they spend a large amount of their time watching television, videos, and the like.

Math & Sciences Lack Appeal (Aren't Sexy)

Enrollments of science and technology/engineering students have dropped drastically in recent times. These disciplines had special stature and were usually looked upon as glamour fields in which the men and women were regarded as having outstanding minds, and students competed vigorously to gain entrance to these disciplines. Why do current students lack the drive to enter these fields?

Math and Sciences are Too Difficult

Students are often discouraged, even at an early age, from pursuing math and science if they receive poor grades in those subjects. Poor grades often result from inadequate textbooks and class lectures that fail to help students grasp the essential concepts. As a consequence, students become "turned off," and they dismiss the maths and science subjects with such fashionable announcements as "that's not for me"; "not my thing"; "too much work, no fun"; "who needs all this?"

Textbooks

Textbooks are rarely written for the level that students can grasp readily. They are usually written by professionals who have an insight in the subject matter that is not shared by students. Explanations are often written in an abstract manner with involved concepts which leave students confused when trying to understand the principles to be learned. The explanations offered are not sufficiently detailed and extensive to take into account the wide range of applications and different aspects of the principles being studied.

Teachers

Teachers in math and science, although knowledgeable,

often themselves lack the skills to convey an understanding of the difficult concepts to students and clarify the contents of the texts. There is also a severe shortage of math and science teachers for elementary and high school levels. A young student can become easily and permanently discouraged by a poor teacher in math or science.

Problem Solving

Math and science can usually be learned only by doing exercises in which problems are solved. It is here in problem solving, where students often become discouraged by not being able to solve the problems they are expected to tackle. It is not uncommon for students to spend hours reading and re-reading pages in their textbook that apply to a problem to be solved, and still not be able to solve the problem.

Parents

Parents who should provide inspiration to their children may fail to do so. Often they do not instill in their children a desire to excel in their studies and to strive for scholastic achievement. They do not provide enough guidance or spend sufficient time with their children to generate real interest and enthusiasm about math and the sciences.

Whereas parents have often become busy with their own careers and daily responsibilities, they nevertheless need to find the time to do more in getting their children away from

in front of the television and into more productive learning activities.

Differences between Math, Science, and Engineering

For those who are not certain of the differences between math, science, and engineering or technology, there are no standard definitions for these terms.

Simply put, however, mathematics is a tool used by scientists to discover and understand physical principles or relationships that are often expressed in rather abstract form.

Engineers or technologists design and construct equipments that make practical use of these principles for the benefit of mankind, often taking into account practical cost factors as well.

For example, Einstein, working as a scientist, discovered physical relationships governing the universe by using mathematics. He expressed these relationships in such abstract forms that for many years only a few of his colleagues could understand them. Making practical use of these principles and relationships, engineers and technologists then designed and constructed the physical equipment, such as space exploration vehicles and communication satellites that make low-cost telephone service possible.

Continued on page 24

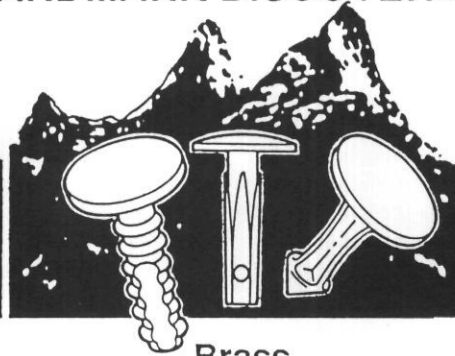
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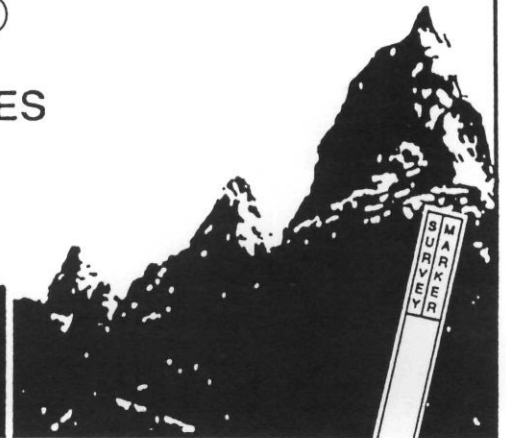


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Product News

Seco Manufacturing Co. Inc., Announced the Introduction of the #5067 Direct Elevation Rod

Redding, CA — The new rod, manufactured in the Redding facility, is very similar in design to the famous Lender Rod, manufactured on the East Coast. However, the Seco has added several improvements including stainless steel hardware and a stainless steel rod face that eliminates the problem of rusting. Also, the graduations are Philadelphia-style and are much easier to read. The #5077 includes a side rail for use with electronic levels and lasers. Brackets are available for all major brands. Rod faces include a new combination cut-and-fill and direct reading.

For more information contact your local Sec dealer or call (800) 824-4744.

Trimble Sets Date for '96 Surveying and Mapping Users Conference

Trimble (NASDAQ:TRMB) has announced scheduling of their 1996 International Surveying & Mapping Users Conference and Exposition to be held October 2-4, 1996, at the San Jose Convention Center in San Jose, CA.

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The New Rec. Elate 13C and Rec. Elate 14C compact total stations with integrated MS-DOS compatible computer and exchangeable PCMCIA program and memory cards are the two powerful and versatile additions to be the REC Elta family of recording total stations. The instruments are available with a pre-installed Zeiss software library. A wide variety of TDS programs is also available including project-by-project processing measurement and evaluation software for applications including job creation, set up functions, data collection, triangle solution, coordinate

geometry, stake out, road layout and more.

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Starplus Software Releases New Least Squares Adjustment Combining GPS Vectors and Conventional

Starplus Software just released its new STAR*NET-GPS Version 5.1 which handles combined adjustments of conventional observations (traversing, angles, distances, zenith angles, elevation differences, etc.) and GPS vectors. The program extracts vectors from Trimble, Ashtech, Leica, and Geodimeter baseline files, as well as the NGS Blue Book G-File format. With a special GPS options menu, the user sets all GPS options relating to geoid modeling, transformations, factoring of vector standard errors and listing preferences. Like other STAR*NET editions, all data, conventional and vectors, reside in standard text files giving the user complete control. Editing and reruns are fast and easy. Includes instant graphic displays and exports are built in for AutoCAD and your COGO.

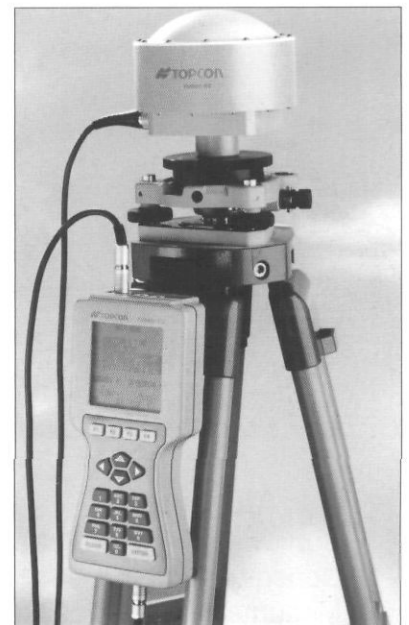
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For complete details and product literature, please contact Topcon California at (800) 500-8575.



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AGA Computer Services, Inc., Releases CAiCE Version 6.0

AGA Computer Services, Inc., (Tampa, FL) continues to set the standard for technological development of survey and civil engineering automation, with the release of CAiCE (Computer Aided Civil Engineering & Surveying) Version 6.0. The scope of this "field to finish" software solution has been expanded to include unprecedented enhancements for surveying and civil engineering.

CAiCE's new 32-bit high-speed graphics engine will allow the user to take full advantage of its increased power. Notable features include near instantaneous refresh speed for panning, zooming, 3-D viewing, and other windowing operations. CAiCE 6.0 offers user definable toolbars that can be customized for particular types of operations (survey, right of way, design, etc.). Digital surface models feature automated shading and rendering, with user control over lighting source and brightness.

Other capabilities include: automatic drive-through and fly-over functions that directly use the geometric database, and 2-D and 3-D raster imaging allowing scanned maps of aerial photographs to be indexed to the project coordinate system and used as background graphics. Scanned raster images can also be draped onto digital surface models for background viewing in 3-D views. This version also allows for plotting of super elevation diagrams on profile sheets.

Complete information on CAiCE 6.0 to include brochures, price list, and demo disk may be obtained by dialing 1 (800) 45-CAiCE.

Pentax:

Pentax Survey Instrument Division Introduces a New Affordable Dual Axis Total Station

Pentax Corporation's Survey Instrument Division announces a new addition their line of Electronic Total Stations, the PCS-515.

Fitting squarely between the current PTS series survey models and the PCS-200 series construction models, the PCS-515 has the features of the PTS models and the affordable cost of the PCS-200 models. Angle accuracy is 5" with dual axis compensator for reliable performance. The telescope is a class high 30x, distance range is 1500m (4,920 ft.) to a single prism and 2000m (6560ft.) to a triple prism. The 4 line display features large high contrast digit controlled by a 22 key, full numeric, keyboard.

Pentax Corporation's Survey Instrument Division Introduces New Data Card Advanced Total Stations



Pentax ATS Series

Pentax Corporation's Survey Instrument Division announces three new models of Electronic Total Stations, the ATS-101, ATS-102, and ATS-105.

These new, top of the line, total stations feature an infrared remote key control which has the full alphabet, numeric, DOS functions and ATS functions on 32 keys. Descriptions can, therefore, be easily input without disturbing the instrument target alignment.

Pentax Corporations Survey Instrument Division Introduces the Affordable One Man Total Station

Pentax Corporation is proud to announce the introduction of the PL-100S and ETH one man total station. In combination, these new products mark an industry first as one man survey technology is now within every budget. This is the result of a unique modular system that offers a combination of non-prism measuring and angle accuracy to generate location data for GIS systems, topographic surveys, volumes, heights and profiling.



Pentax PL-100S Pulse Laser

Pentax Survey Instrument Division Announces the World's First Auto-Focus Automatic Levels

Pentax Corporation's Survey Instrument Division announces 3 models of auto-focusing automatic levels. The AFL-320, AFL-280 and AFL-240 utilize auto-focus technology first made pentax cameras. This feature provides real benefits, to the user, by decreasing operation time and reducing eye fatigue. ⊕



Pentax AFL Series

What we can and cannot do

In searching for the answer to the question, "How can we attract more students to math and the sciences?", we can assume that we will probably not be able to persuade students to reduce their TV viewing time, nor will we be able to modify the habits and behavior of parents within a reasonable time.

It is equally improbable that we can quickly create a new generation of teachers who possess all those qualities that will generate new student interests to enter math and the sciences.

It is also unlikely that improved textbooks will appear on the horizon to meet the requirements. Numerous texts are continuously written in each subject, with each text intended to be the answer to students' (and teachers) prayers, but never quite achieving that.

Until these rather long-range issues can be resolved, however, there are some steps we can take for the near future:

Students can be helped toward greater progress by including in their learning diet, a generous amount of illustrations on how problems related to selected topics are solved. If such illustrations provide detailed explanations on how to approach given problems and how to think through the various steps involved in the solutions, students can grasp the subject matter quicker and easier.

Through the illustrations students gain a deep under-

standing of how to solve problems in a given subject. This results in achieving better grades at school and improved performance when the students practice their professions later on.

Once a student is able to solve assigned problems within a reasonable period of time, he/she will not need to agonize, often for hours, over how to find the solution to a single problem. The student will then gain self-confidence and actually enjoy math and science. The key is learning how to solve problems.

In recognizing these conditions, various problem solving study guides have been developed in the form of books, videos, and computer software. Books are preferred by many because they contain greater detail, and it is easier to study and learn complex material from a printed page. Some selected study guide books are filled with numerous worked-out examples that are much more in-depth and tutorial than those found in a textbook. These study guides take the student "by the hand" and guide him or her step-by-step through intricate problem solutions. Such books help students save a large amount of time and a great deal of frustration from being unable to solve assigned problems.

Separate study guides are available at bookstores in almost every math and science/engineering subject, as well as for other fields of study. ⊕

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Here's Some Important Information About CLSA

The goal of the California Land Surveyors Association is to promote and enhance the profession of surveying, to promote the common good and welfare of its members, to promote and maintain the highest possible standards of professional ethics and practice, and to elevate the public's understanding of our profession. CLSA represents all land surveyors, whether they are employees or proprietors, whether in the public or the private sector.

Representation

- LOCAL: Your local chapter represents you in local issues. Through your chapter representative to the State Board of Directors, the individual member can direct the course CLSA will take.
- STATE: The surveyor is represented at the state level through an active legislative program, legislative advocate, and liaison with the State Board of Registration.
- REGIONAL: CLSA is an active member of the Western Federation of Professional Land Surveyors. This federation is composed of associations throughout the western United States and addresses regional issues.
- NATIONAL: Through institutional affiliation with the National Society of Professional Surveyors and the American Congress on Surveying and Mapping, CLSA is represented at the national level.

Education Opportunities

CLSA presents annual conferences which provide technical and business programs, as well as exhibits of the latest in surveying and computing technology. Seminars and workshops are presented to assist in continuing education. CLSA publishes the *California Surveyor* magazine and the *CLSA News* to keep the membership abreast of changing legislation, legal opinions, and other items which affect our profession.

Business and Professional Services

CLSA provides a fully staffed central office which is available to answer questions or to provide up-to-date referrals concerning legislation, educational opportunities, job opportunities, or other issues concerning our membership. Health and professional liability insurance programs are available to members.

Join CLSA Today!

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Corner Record Forms - FORM PWA-102 (8/88) (minimum order is 25)	\$10.00 (25)	\$15.00 (25)		
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Land Surveying for the Land Owner and Real Estate Professional by Daniel E. Beardslee, P.L.S.	\$8.00	\$12.00		
Easements and Related Land Use Law In California - 2nd Edition By Donald E. Bender, J.D.,L.S.	\$20.00	\$30.00		
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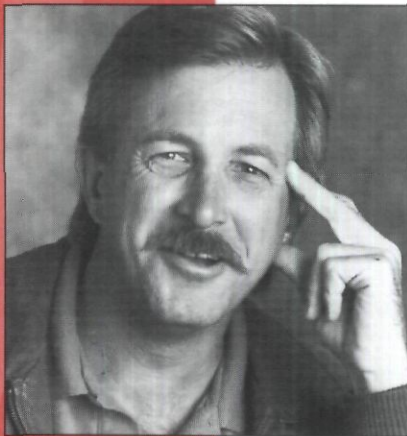
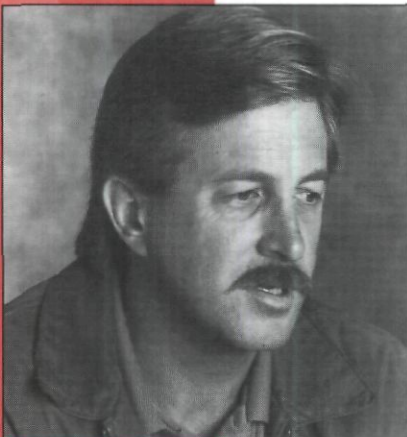
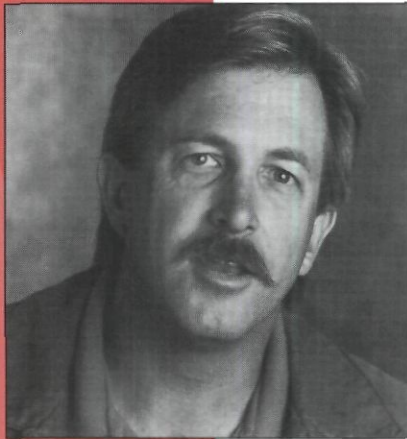
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