

# The California Surveyor

No. 79

The Voice of the Land Surveyors of California

Summer, 1985

C.L.S.A.

CONFERENCE

1985



(left to right) John Thalacker, Don Bender, Michael McGee, Melvin Bautista, Leo Schell



Richard Parker and Michael McGee



Michael McGee



(left to right) Michael McGee, Dick Siegmund, Gene Rutledge, Susan Jensen, Jim Dorsey, Paul Lamoreaux

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# The California Surveyor

is the quarterly publication of The California Land Surveyors Association and is published as a service to the Land Surveying profession of California. It is mailed to all Licensed Land Surveyors and Land Surveyors in Training in the state of California as well as to all members of California Land Surveyors Association. *The California Surveyor* is an open forum for all surveyors, with an editorial policy predicated on the preamble to the constitution of the California Land Surveyors Association 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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## SUSTAINING MEMBERSHIP

Membership in the California Land Surveyors Association as a sustaining member is open to any individual, company or corporation who, by their interest in the Land Surveying profession, is desirous of supporting the purposes and objectives of this association. For information regarding sustaining membership, contact the Editor of *The California Surveyor*.

## EDITORIAL MATERIAL

All articles, reports, letters and contributions are accepted and will be considered for publication regardless of the author's affiliation with the California Land Surveyors Association. Material should be sent to *The California Surveyor*.

Unless indicated, all articles in this publication are prepared by the editor.

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1023 San Carlos Drive  
Antioch, CA 94509

COVER PHOTO (see article on page 5)

## DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

Fall ..... September 15, 1985  
Winter ..... December 15, 1985

Articles, Reports, Letters, etc., received after the above mentioned date will be placed in the next edition.

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# President's Message

Since the last issue of the *Cal Surveyor*, I have had a number of opportunities, as President, to be involved with individual members throughout the State. The responsibility has taken me from Eureka, my home town in the north, to San Diego, in the South, attending to various aspects of the Association's business. The first week of May, I attended, along with 30 or more other members from around the State, the quarterly State Board of Director's Meeting in Los Angeles participating in continuous meetings, for two days, with the Legislative Committee, President's Advisory Committee, and the Board on Saturday.

Late Saturday, a proposal was brought before the Board that drew considerable discussion. A few of the larger Chapters have proposed that the Association By-Laws be changed to allow engineers registered prior to 1982, who practice land surveying by exemption from the Land Surveyor's Act, be allowed Corporate Membership status, the same as the Land Surveyor rather than Affiliate status, as is presently the case. Corporate Membership, as presently defined, allows the Land Surveyor to be a voting member of the Association and to hold offices.

Having discussed this subject with several advocates as well as those who stand firmly opposed, it appears that most of the Chapters (members) are not clear on the position of those Chapters who do favor such a proposal. I suggest to those who advocate this proposal, they need to develop their position by communicating their concerns and needs to other members throughout the State. This is the kind of issue that, mixed with a lack of communication can lead to regional and apparent philosophical differences throughout the State. As President of this State Association, I do not recognize regional differences; however I will accept philosophical differences that are rationalized objectively rather than emotionalized. The land surveying profession requires this issue be discussed openly and thoroughly giving proper merit where due as well as proper criticism; however, a decision is made, it must be that which serves the best purpose of the profession



Michael R. McGee

throughout the State.

Since March, I have attended a joint meeting of two Chapters and Vice President, Richard Siegmund, has attended five Chapter meetings around the State for the purpose of communicating Association goals, timely issues of interest, and otherwise, avail the State of the opportunity to be better informed as to local and regional problems.

In the third week of May, I had the honor of presiding over the opening ceremonies at our State Conference in San Diego. The Conference theme "Our Western Heritage," was an acknowledgment of the contribution of Land Surveyors in the history and development of these United States. The Rectangular Survey System is a monument to those surveyors of the past and an inspiration to today's surveyors who literally leave their mark on the world.

The Conference Committee's efforts were admirable and they are to be commended for quantity as well as quality in the programs, exhibits, and events. I personally found during the four days I was in San Diego, an inexhaustible resource of ideas, suggestions, and advice from those attendees I was able to talk with and share thoughts.

With regard to the Board of Registration for Professional Engineers and Land Surveyors, I learned that the vacant position of Executive Officer has been filled by Harry Hilt who assumed his duties during the first week of June. I was also made aware that four members of the Land Surveyors - Technical Advisory Committee (LS-TAC), terms

will expire June 30, 1985. On behalf of the Association, I am soliciting prospective members for recommendation and endorsement by the CLSA. If you are interested in becoming a candidate for the committee, please write to me including a brief resume and send it to 837 Third Street, Eureka, CA 95501.

After six months in the position of President, making contact with quite a variety of surveyors from all over the state of California and the western United States, I have become increasingly aware of the advancements of the practitioner in the profession of land surveying. The majority of surveyors are becoming more sophisticated in their business and professional practices. For example: always giving estimates to their clients, so they are clear on cost and what is extra work, not giving estimates that are idealistic and therefore always exceeded, having signed contracts, requiring a retainer or deposit on account, sending progressive billing statements rather than billing on completion, who do not survey a deed provided by the client without verifying that it is the correct Vesting Deed of record, who do check adjacent deeds for agreement or conflicts with their client's deed, who always set durable monuments in the ground rather than wooden hubs, who do record Records of Survey or a Corner Record for *every monument set*, who do want to be retraced, who think they are responsible for the work of others when using it as a basis for their survey, or think their measurements are not necessarily more perfect than others.

Being a professional is many things, some of which escape me at times; however, I am sure that what a professional is or should be are all of the above. I feel strongly about this last statement, as it has been proven to me through personal experience, that doing all of the above works better. Are you in agreement? Would you like to add to the list or do you feel that some of the stated items are inappropriate?

Michael R. McGee, L.S.  
President  
June 15, 1985

□

# From the Editor

I would like to take this opportunity to solicit your support for *The California Surveyor* and, therefore, your profession as surveyors or future surveyors. I have recently undertaken the task of editor and plan to continue to provide you with a quality publication as have your past editors.

I have recently had the opportunity to review many past issues of *The California Surveyor*. During this review, I was impressed with the content and the improvements that this magazine has undergone under the leadership of CLSA and past editors. I believe they need your thanks and I need your support in continuing to improve our magazine.

By "support," I request letters to the editor with regards to suggested topics, articles for publication and even a little criticism if you feel the desire. You will notice in this issue

articles on education by CSUF staff and students, Court decisions and articles on surveying topics that affect our profession and business practices. Your staff of *The California Surveyor* are working hard to find these sources. We are continuing to search for material and regular contributors of articles for publication. If you have an interesting project or know of one, we would appreciate your help in generating a report or article. If you read or know of technical papers on surveying, business practices or legal matters affecting surveyors, please help by sending copies along with credit to the authorship and permission to reprint, if available. Your contributions to the magazine will be greatly appreciated by the magazine staff and readers. □

Ronald Greenwell, L.S.  
Editor

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# Chapter Meeting

## HIGHLIGHTS

**San Mateo/Santa Clara:** In the February meeting, Alan Boone gave a presentation on the San Jose Light Rail Transit Project. R/W acquisition, survey problems and jurisdictional battles were explained.

**Mother Lode:** The April meeting notes show a lengthy discussion, resulting in a motion to draft a letter

to the President of CLSA suggesting sponsorship of legislation to amend the Land Surveyors Act to require all survey offices to be operated by an owner or manager who is a Licensed Surveyor.

**San Diego:** At the March meeting, Mike Pallamary made a pitch for people to participate in a School Field Day. This event shows kids what surveyors do.

**East Bay:** The May meeting notes send congratulations and thanks to the Hasselbach Surveying Instruments for conducting a successful one day hands-on seminar for instrument calibration.

**Marin/Sonoma:** A joint meeting was held in May. One new business item was in regards to a copyright infringement lawsuit against a surveyor on a final map. □

# Treasurer's Report

## N.S.P.S. FILM PROJECT

On behalf of the California Land Surveyors Association and its Board of Directors, I would like to take this opportunity to thank those individuals and chapters who donated funds for California's contribution to the NSPS surveying film. Due to their interest and support, our association was able to present to John Thalacker, President of the National Society of Professional Surveyors, a check for \$1,000 at our

San Diego Conference. This year other programs and expenses had exhausted our limited budget. The following chapters responded to these budgetary constraints by giving something extra to promote our image and profession.

Central Coast Chapter  
East Bay Chapter  
Humbolt Chapter  
L.A./Ventura Chapter  
Orange County  
(separate donation)  
Riverside/San Bernardino

San Diego Chapter  
Sonoma County Chapter

This will be a two year project and next year I hope we can count on additional support for this worthwhile cause. Remember, it is your profession, and if you don't promote and support it, no one else will.

Again, my thanks to the film's supporters and we will keep you posted on its progress.

Susan Anne Jensen, L.S.  
Treasurer □

# Articles

## STATE CONFERENCE

by Michael J. Pallamary, L.S.

This year's State Conference was held in scenic San Diego at the Town & Country Hotel, site of many prominent State and National conventions. The activities began on Wednesday with a very informative seminar presented by Tim Psomas, President of Psomas and Associates and Ron Vinje, Chief Financial Officer with Costa Mesa based Psomas and Associates. The seminar entitled "Financial Management—Improving Communications with Your Accountant" was exceptionally well attended by a majority of conference participants. The major text of the seminar dealt with the differences between a cash and accrual basis of financial management. As was revealed in the seminar, there are some startling differences which, when utilized properly, can have a dramatic impact on assessing a company's economic stability. Tim and Ron presented a very well organized program, one that undoubtedly left an impact upon those who attended. If one has a chance to hear these gentlemen, the opportunity should not be passed by.

The formal conference events began with a set of most impressive opening comments by Association President Michael R. McGee, L.S. Michael successfully set the tone for the conference and his welcoming remarks paced the conference's events.

Following Michael's comments, he proceeded to introduce our honored guest, Mr. John Thalacker, L.S., President of the National Society for Professional Surveyors. John proceeded to present a very stirring speech regarding the Professional Surveyor's role in today's society. Throughout the duration of the conference, John's presence solidified the positive image he painted of today's Surveyor.

In the hotels' Padre Room following John's comments, Mr. Kevin McHugh, L.S., C.E. and President of the California Foundation for Land Surveying continued with the program by presenting a report on "The Status of Land Surveying Education in California." This issue is of paramount concern to all surveyors and is not to be taken lightly. The major concern has to deal with

the difficulty in obtaining a formal education in the surveying profession. As a matter of fact, Fresno is the only college in California offering a four year baccalaureate in surveying, a Bachelor of Science in Surveying and Photogrammetry. This is a startling reality in light of California's national image at the forefront of the surveyor's professional stature. To further accent the situation Kevin noted, is the fact that Fresno cannot handle the number of students wanting to enroll, limiting enrollment at only twenty students per year.

In closing, Kevin stated that the only way formal surveying education can become a reality is through the support of the profession both personally and financially. Kevin's hard work should provide us all with the motivation to support and encourage any aspect of this growing concern among true professionals.

Next, the group convened to the exhibit area to view the latest in the state of the art in surveying, CAD systems, and software. The exhibits were well organized and were substantial enough to become a conference of their own.

At noon in the comfortable San Diego Room during the luncheon, Mr. Gerald G. Kuhn, a Marine Geologist, with the Scripps Institute of Oceanography presented a fascinating slide show and lecture detailing his research with Dr. Frank Shepard involving the historical decay and erosion of the Southern California coastline. It is most interesting to note that Mr. Kuhn's controversial findings were substantiated by reviewing historical survey records of railroads and sectionalized meander lines performed in the area.

Adjourning to the Padre Room, Robert Merritt an Attorney at Law and partner with the San Francisco based law firm of McCutchen, Doyle, Brown & Emerson was introduced. Mr. Merritt spoke on the subject, "Are Final Subdivision Maps Becoming Junkyards of Information?" Mr. Merritt noted the problem when local agencies require that the Surveyor/Engineer place a great deal of technically unnecessary information on the map and the potential future problems occurring as a result of such policies. Will it be our task to map out hazardous

waste sites, electrical radiation zones, etc.?

Donald Bender, L.S. Attorney at Law and President-Elect of ACS presented a program entitled "History of the Land Surveyors Act." Don's detailed research has revealed a great deal of informative facts about the history and role of the Land Surveyors Act in the development of California's history. Don is presently preparing to publish his findings in the not too distant future.

Following a coffee break and another round of the traditional raffle, Mr. Larry Larson with the U.S. Forest Service spoke about the Small Tracts Act. He explained the procedures involved with disposing of these tracts of land assuming they qualify under the Act of 1983. This is an area which will become of more concern as the government continues with its aggressive Forest Survey program.

One of the major concerns of the Professional Land Surveyor involves the surveyor's ability to effectively speak in an open public forum. Mr. Ralph C. Brown, Acting Executive Vice President with the International Right of Way Association gave a very lively and stimulating presentation entitled "Effective Communication." What purpose does it serve if one possesses all the knowledge in the world if he/she is unable to convince or communicate his/her ideas?

Nine o'clock on Friday morning, Association Vice-President Dick Siegmund presided over a panel discussion of EDM—Data Collectors. The panel members included Robert Leger, L.S. with Rick Engineering of San Diego, Fred A. Murphy, L.S. RCE with the Department of Transportation in Sacramento, and Peter Craig, with Craig, Bulhuis and Nothomb, a San Diego based firm. The discussion was quite fascinating as the panel members both praised and criticized the different devices they were using. It is apparent that the age of electronic data storage is here.

Immediately following the data collector panel, Jerry A. O'Callaghan, Ph.D. and Historian with the BLM spoke about the Commemoration of the Land Ordinance of 1785. It is clear from Jerry's research that our history is richly

## CONVENTION '85



(L to R) Paul Pangus, John Austin, Leonard Lenger



(L to R) Frank Moffitt, Dennis Landberg, Ira Alexander



John Thalacker



(L to R) Leona Dinnin, Dave Goodman, Sharon Reid



Dennis Platt, Mike Welch

embedded in the foundation of our country.

Friday's luncheon afforded attendees the opportunity to become updated with respect to current legislative concerns as well as to accept recognition for a State Land Surveyors Week.

Richard Parker, L.S. with Bradley & Associates, presented the Surveyors Week resolution while Dennis O. Flatt with Winner/Wagner & Associates proceeded to outline some of the major legislative issues of concern to Land Surveyors. One of the most disconcerting facts Mr. Flatt related was the significance of a major PAC contribution as it affects legislation. It would appear CLSA has a great deal to learn from this unsettling reality.

A one hour session entitled "Legal Research" was presented by Peter Jan Honigsberg, an Attorney from the Berkeley area. Peter's organized format clearly presented the necessary steps to properly and legally perform the required research concomitant to any detailed

proper boundary survey.

"Multipurpose Disaster—The Result of Spatially Imprecise Land Record Information Systems" was the topic of discussion for James K. Crossfield, Ph.D. from C.S.U. Fresno. His technical expertise outlined the need to prepare and maintain a sound workable system, one that will be functional many years down the road.

A three member panel composed of Ira Alexander, L.S., RCE, James Stem from N.G.S. in Rockville Maryland, and Charles Safford, L.S. discussed the need to use the California coordinate system. Included in the discussion was an update on the adjustment of 1983 (NAD83) and its impact to our present system. This is an important issue to follow as there is pending legislation affecting the system and CLSA must make a decision in this matter.

Saturday's closing sessions began with "Digital Photogrammetry for Land Surveyors" presented by William Young, L.S. Mr. Young pre-

sented a most enlightening discussion on the state of the art in photogrammetry and the computerization of digitizing and storing data.

The midmorning sessions, being a report on the activities of the State Board of Registration for Professional Engineers and Land Surveyors and the Southern California Land Surveyors Technical Advisory Committee of the Board, were presented by James R. Dorsey, L.S. and Gerald F. Oldenburg, L.S., respectively. These important reports are of paramount concern to all Professionals and it is incumbent upon all of the industry to acquaint themselves with the actions of these groups and to participate whenever possible.

The closing session "Saudi Arabia from Behind the Gun" was presented by J.R. "Bob" McClary, L.S. with the DOT in Eureka. Bob's humorous recounts of events in Saudi brought the whole experience

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(Continued from page 7)

a little closer to home and magnified the universal nature of our unique profession.

In closing, President Michael McGee, L.S. gave a spirited message to be carried with us all. He also acknowledged the efforts of the hard working committee members who made personal sacrifices to make the 1985 conference a smashing success. Those members were Mike Welch, Dorothy Calegari, Howard Dye, Frank Fitzpatrick, Dennis Landberg, Chuck Moore, D.K. Nasland, Jan Nasland, Michael J. Pallamary, Maureen Pallamary, Ronald Parker, Carol Parker, and Nathan Willess. In addition, the volunteer students from Fresno did a spectacular job in assisting in the organization and implementation of the programs.

The McNeil Agency, a public relations firm based in San Diego, did a superb job in maintaining a high level of visibility for the conference as well as for all professional Land Surveyors. As a result, we have received coverage throughout the media across the state, the impact of which we will feel forever.

Finally, as a personal note, I wish to thank all those members who have attended and/or contributed their valuable time and resources in making this year's conference a success. I encourage all of you who have reaped the benefits of people like these to get up and pitch in. This can only be done by positive action and a positive attitude. Our needs can only be heard in numbers. Please remember these thoughts the next time you are called on to help. See you next year. □

SEPTEMBER 22-26, 1985

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### DEVELOPING AN EVOLUTIONARY APPROACH TO THE SURVEYING CURRICULUM

Fareed W. Nader and James K. Crossfield, Department of Civil and Surveying Engineering, California State University, Fresno, Fresno, CA 93740 U.S.A.

#### Introduction

A question which arises, in the minds of both those contemplating the establishment of a surveying curriculum and those with an existing curriculum, is: what direction should we go in the development of the curriculum? Or, should we even develop the curriculum at all? Maybe we should just leave it as it is.

Whether or not the surveying educator chooses to do anything about the curriculum, changes to it will be required just to please other disciplines in the university which use the courses for their degree requirements, or because an accrediting board requests changes.

Changes to surveying curriculae made by educators usually come about because of two factors: 1) changes in the technology (tools) that we use for our work impel us to create new courses to understand the technology, or 2) the educators are attempting to follow some theory or philosophy of education, which necessitates a change in courses.

Let us look at each of these in more detail.

#### The Technology-Driven Curriculum

Many existing curriculae came about as spin-offs from Civil Engineering (or in some cases Civil Engineering was a spin-off from surveying!), and their basic structure serves as a support area to the Civils. These curriculae tend to be very traditional, containing a core of two plane surveying courses, a basic course in photogrammetry, and perhaps a geodetic surveying course and a legal principles course. The Core makes heavy use of the traditional tools of surveying — transit, steel tape, level, and Kelsh plotter. As these programs evolve into full-fledged surveying degree programs they continue relying on equipment, but now it becomes more exotic and commensurately more expensive.

The open-structure transit gets replaced with a digital read-out

theodolite. The steel tape, with its systematic adjustments, languishes, while the student begins an affair with an EDM that beeps seductively at the caress of a button and is seemingly exempt from the drudgery of adjustments. Automatic levels make elevation determination so easy that even a poetry major can function in the field techniques with half an hour of instruction.

The ease with which the new equipment generates data from the field creates a need for data crunching machines — computers — mainframe, micro and mini, specialized, pocket sized, big and little, expensive and more expensive. The machines that start out reasonably priced soon develop an insatiable need for add-ons, or interfaces, or modems, or hard disks. The computers are not content to breed in their own tribes. Soon they marry into the theodolite family and the stereoplotter clan, and these in turn spawn new species such as field-to-finished map systems.

At this point the surveying educator finds that she/he simply cannot cover the use of all this hardware in the existing curriculum and so she/he starts making changes. A course is added for Electronic Distance Measurements, and another for Modern Surveying Instruments. The computations course is split into two, Basic and Advanced. A new applications course is created called Computer Methods, which is soon replaced by two others, Computer Methods I and II.

If the educator stops to think about what is happening, s/he realizes that technology is driving the curriculum in the direction that equipment manufacturers have decided to go. The educator is not really in control of what is happening to the curriculum.

This creates a severe problem in that the surveying educator will find him/herself always behind in the latest developments in hardware. Government funded research produces exotic and very expensive developments such as the Global Positioning System (GPS). Private companies create sophisticated computer based packages that do everything except grade homework. Each of these developments seem to be more expensive than the last one,

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and the surveying educator is placed on a treadmill, running to constantly obtain more dollars from a generous university which (much to our surprise!) believes another dozen history books for the library are more important than acquiring a model X-13 computerized plumb bob.

The surveying industry is also on a treadmill of trying to keep up with the latest hardware technologies. In their need to stay competitive, surveyors acquire whatever hardware they believe will speed up their existing type of work. Frequently the purchase of a major piece of exotic equipment sparks a need for a new employee who can operate it at a profit. That's why, in February, the surveying educator receives a frantic call from the Error-Metro Company saying they must hire one of his new graduates within two weeks ("can't wait until June!") but the graduate must be able to operate the company's new Q-3000 Stereo-Levelizer. Enough phone calls of this type and the surveying educators develop a neurosis of feeling they have failed to properly educate their students because they can't immediately supply a graduate who can even locate the "ON" switch to the Q-3000, much less produce anything with it. The surveying industry also comes away with a bad opinion of surveying education, feeling the educators have been lying to them throughout the years about the value of a university education.

Educational reliance on state-of-the-art equipment has another severe drawback — the cost of downtime, repairs, and calibration. As an example, CSU Fresno purchased a Hewlett-Packard 3820 Total Station soon after they were released in the market. It is a precise, productive, versatile, and easy to use machine. However, when it needs repairs it must be shipped off to a distant repair shop where it may sit for two weeks to two months waiting for a payment order to work its way through the university bureaucracy and the State Comptroller's office. Also, the Department Chairman nearly had cardiac arrest when he saw that the latest repairs and calibration would require twenty percent of his whole maintenance budget!

And much to the educator's sur-

prise, more equipment means a need for more storage space, a thorough but efficient daily inventory system, a program of cleaning and maintenance, and personnel to handle all of these. None of these is easy to obtain in a university.

We have perhaps been too negative about the technology-driven curriculum. It does have distinct advantages. One is that modification of the curriculum is an easy process — just add a new course to utilize the new piece of equipment. For example, if one can gather the funds for an analytical stereoplotter, the logical way to utilize it is to simply tack on to the curriculum a course in Analytical Photogrammetry. Without this new piece of equipment it would require a courageous person to insist on adding such a course.

Another advantage is the image the state-of-the-art equipment projects to the public, students and professors. Everybody wants to feel they are on the cutting edge of development, and they don't want to have to contend with worn-out and slow equipment. For example, during one of our searches for another surveying professor at California State University, Fresno, we were chagrined to be told by one candidate that he would not take the position offered because he did not want to teach with our collection of (then) very outdated transits.

### The Theory-Driven Curriculum

By contrast, a second approach to structuring a curriculum is to use

what we will call the theory-driven curriculum. This involves one or more "philosophies" of what surveying education is and what it should try to accomplish. Operating on this basis, it should not make a difference if the school has up-to-date equipment, or any equipment at all! (assuming the "philosophy" is not to acquire equipment).

Some of the philosophies that appear to be in operation in surveying schools around the country are:

- 1) The student should be equipped with the knowledge necessary to pass the state examination for registration as a Professional Surveyor.
- 2) Formal education should prepare the student for commencement into the real world of surveying engineering.
- 3) The purpose of a university education is to show students how to learn on their own.
- 4) Surveying education must equip the students to function effectively in any of the various disciplines of surveying, mapping, and photogrammetry.
- 5) The university experience should be preparation for lifelong learning, the pursuit of career goals, and achieving a stimulated and cultured life.
- 6) We are training the practical professional.
- 7) The objective is to enable the graduate to evaluate the methods and equipment available and select

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the best combination in each unique field situation.

There is a whole set of more specific theories, some that are complete contradictions of others, that apply to pedagogy, such as:

- 1) Every student should take a surveying course in the first semester of his/her first year in the university.
- 2) Contrary to item one is the theory that students should not take surveying courses until their third year when they have completed all the basic science, mathematics, and general education courses.
- 3) The first surveying course should include a thorough discussion of Geodesy and the ellipsoidal framework.
- 4) New professors must teach for X years with the existing curriculum before attempting to add new courses or delete old ones.
- 5) Any curriculum changes must be compatible with the Civil Engineering curriculum since surveying is really a branch of that discipline.

Some of these theories overlap and, obviously, a school could be following combinations of them. What is significant is that teaching is oriented towards achievement of "the philosophy" and does not get diverted by the latest new "toy" from the equipment manufacturers. The ideal theory-driven curriculum would be so sound that no new technology could shake its fundamental underpinnings.

Most new technology is simply an attempt to increase productivity. The fundamentals of surveying still are directions, angles, distances, elevations, and principles; these in turn are dependent on fundamental understanding of mathematics, physics, language, and law.

#### An Appropriate Strategy

It would be ludicrous for any surveying curriculum to impart the fundamentals of surveying without discussing and using the technological tools currently available for acquiring those fundamentals. That would be like a medical school training physicians in the philosophy of surgery but never allowing the students to wield a scalpel. The students should not be filled with theories and philosophy and then thrown out into the world to experiment with whatever tools they can find to put the theories into practice. The theories of surveying are

intimately related to the tools with which we make our measurements and locate points. Understanding the characteristics of the tools we use, their strengths, and limitations, is as important as knowing what we want to achieve with those tools.

An appropriate strategy for developing a surveying curriculum and permitting it to evolve is obviously to combine the technology and theory approaches by structuring a sound theoretical framework within which is placed as much state-of-the-art technology as the school can afford.

Does this mean the wealthy school with the latest in computerized plumb bobs will always be producing the best graduates? Not at all; for the graduates will be going to work for many different types of companies which are at widely different places on the surveying equipment evolutionary scale. A graduate who has learned how to get positions only with a GPS receiver is not going to be appreciated (or hired!) by a small-town surveying company that finds it most economical to do topographic surveys with a steel tape and a

Dumpy level. The well educated surveying graduate will always need to be acquainted with a wide range of technology, from the old and simple to the latest and most sophisticated.

#### Preparing for the Future

There is a basic difficulty in using this "appropriate strategy" of combining the theory-driven and technology-driven curriculums. And that is: how does one build the theoretical structure into which the technology will fit before the technology has been developed? Especially, how does one predict where both theoretical and technological development will take place in the future?

It is embarrassing, economically wasteful, and possibly even fatal to the existence of one's surveying program, if she/he makes a poor prediction of what will be important in the curriculum five or ten years in the future. One can, of course, play it safe and not try to anticipate the future, but this results in surveying educators always being one generation behind government and industry, thereby eliminating one of the

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university's roles in society — leading the society to better ways of thinking and doing. This is especially important in this epoch when technological change has become one of the most assured aspects of life, yet one of the most feared.

In order for our curriculae to be evolutionary rather than reactionary we need to build in, i.e., institutionalize, a process for anticipating future technologies and developing appropriate theoretical structures to accommodate them. We will use the word *futuring*, currently in vogue, to describe this process.

Futuring can operate at different levels. The most basic level is an individual professor following his/her own musings or an unanswerable question from a student. The research that some of us do yields insights into important and major changes that will occur in surveying in the future. It is important that colloquia, such as we are attending here in New Brunswick, be conducted on a regular basis so that we might share the results of our research and apply it to our individual school's futuring. An example of how professors can anticipate the future in their research is shown in a paper by Crossfield and McAlister (which will be presented at the September 1985 meeting of ACSM) in which they analyze the economic feasibility of using an electronic field of positioning unit which has not yet been invented. [Crossfield and McCalister, 1985].

Futuring can be done at several higher levels as well. The surveying program, the department, and the school can each have their Curriculum Review Committee. The most important of these would be the Surveying Futuring Committee which would be constituted of mostly the surveying faculty members, but could also include students, key administrators, alumni, industry leaders, and perhaps government representatives from agencies that employ or regulate surveyors.

The Futuring Committee has the responsibility to develop alternative futures that might be used in the curriculum. They could do this in any number of ways. A method to be described here is called the Delphi Method. [Linstone and Turoff, 1975].

The Delphi procedure might be as follows:

1) The futuring group meets for half a day or more. Explanation of the futuring process is given. The group then brainstorms all the possible changes in the surveying curriculum they can think of. Even the remotest, craziest, possibility is listed.

2) From among the brainstorm ideas, fifty or less of the more rational curriculum changes or trends are retained and organized into a questionnaire which is mailed to the Delphi group. The Delphi group consists of a large number, perhaps 100, of persons who are concerned with surveying education. This group would be similar in make-up to the futuring group, i.e., educators, students, administrators, alumni, etc., but they could have a very wide geographical distribution and diverse professions. The questionnaire will ask the Delphi group to evaluate the importance and the likelihood of occurrence of each of the changes identified by the brainstorming futuring group.

3) The questionnaire would ask for a numerical evaluation of each change. For example, one of the questions might read: AN ELECTRONIC FIELD POSITIONING UNIT IS CREATED WHICH PERMITS ONE-MAN STAKE-OUT OF CONSTRUCTION SITES. a. What is the possibility this will happen within five years? (Circle one number.)

5=almost assured; 4=likely; 3=possible; 2=not likely; 1=not possible.

b. If this does happen, how significant would it be for surveying education? (circle one number.)

5=very important; 4=significant; 3=limited; 2=insignificant; 1=zero impact.

The numerical answers from all Delphi respondents are tabulated and a mean value established for each question.

4) A second questionnaire, identical to the first, is sent to the Delphi group but they are told what the mean answer and their individual answer was to each question on the previous questionnaire. Since the Delphi group members are not in contact with each other they will not be able to argue and defend their own opinion and they will tend to move toward more of a majority opinion on each question. The results of the second questionnaire

are tabulated and a new mean value is established for each question.

5) Step 4 above is repeated but using the mean value answers from the second questionnaire. The results are again tabulated and meaned. There should be strong majorities agreeing on most of the questions after this third round. Keep in mind that agreement does not guarantee these things will actually happen in the future. However, it does point in the direction that most "experts" are working and putting their efforts and just knowing this will be a great aid to the surveying curriculum planners. 6) The futuring group then looks at the results of the third Delphi questionnaire and selects a small number, say three, of what appear to be the most likely and most significant changes in surveying education. The futuring group divides itself into smaller groups of three to five persons and each subgroup creates a "futures wheel" for one of the changes. A futures wheel is constructed by starting with a significant change as its hub, as shown for example in Figure 1.



Figure 1. Hub of a futures wheel.

Any member of the subgroup can now propose a consequence that might result from this item, but any other member may veto the consequence. If all members agree a consequence will result, it is added as a spoke on the hub item. Each spoke item then in turn can become the hub of another wheel of consequences, as shown for example in Figure 2.

In figure 2, item 1 is the original significant change identified by the Delphi group. Items 2,3,4 are called Level 1 consequences. Items 5,6,7,8,9,10 are called Level 2 consequences. Obviously this pattern can multiply rapidly so it is best to agree on a limit for the number of consequences that will be considered at each level and in total. As the wheels expand one will find some repetitive consequences, some that are contradictory, and some that were totally unexpected.

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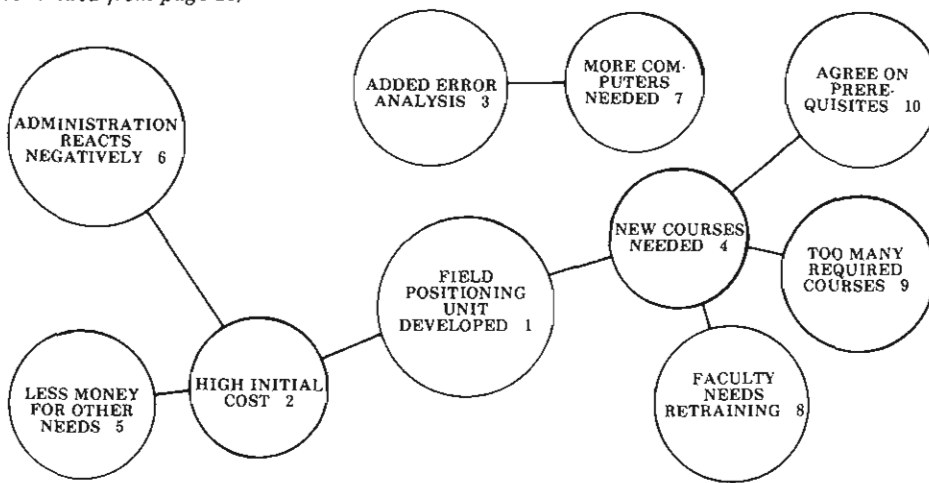


Figure 2. A futures wheel with two levels of consequences.

7) The consequences of each curriculum change can be ranked, showing which are likely to occur and which are not. This may be facilitated by using a matrix to investigate the impact of each consequence on any of the other consequences.

8) A scenario can be written for each futures wheel, giving a picture of what is likely to happen from each curriculum change. The scenarios are reviewed by the futuring group and they make recommendations as to which scenarios are likely to occur and which they would like to follow.

There are valid criticisms of using the Delphi method to make a curriculum evolve logically: it is cumbersome, time consuming, and appears terribly "unscientific." Cumber- some yes, but certainly it is more likely to produce what is needed in the surveying profession as a whole as compared to what happens now with one or two professors casually putting courses in and out of the curriculum. At any time if the process becomes too awkward, it can be streamlined by decreasing the numbers of people taking part in the committees or answering questionnaires. If the process becomes too time consuming, the second and third questionnaire mailings could be eliminated. The discussions by the futuring committee should not require more than one day.

The process does appear unscientific, but what processes do we now use that are more scientific? At least with the Delphi method we are expanding our thinking with the brainstorming session, then narrowing in on selected topics with the questionnaires, then expanding our

views again with the futures wheels, and finally focusing on a few possibilities with the scenario writing and recommendations. Input is obtained from many diverse interested persons rather than just one or two local faculty whose horizons might be rather limited.

**Conclusion**

Many of our surveying curriculae have been created by "cutting and pasting" throughout many years. Some of them still primarily serve as appendages to other curriculae, such as civil engineering. Courses have a tendency to proliferate to accommodate the latest piece of hardware acquired by the school.

Occasionally it is imperative that those responsible for a curriculum take a thorough look at what the curriculum has become. When this occurs, serious consideration should be given to using a process like the Delphi method which will broaden the input for modifications to the curriculum. Hopefully the result will be a curriculum based on sound philosophies that are flexible enough to seek out and incorporate as much new technology as the school can afford.

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by R.J. Walter

Land Surveyors in the Mother Lode spend a fair portion of their time on surveys of sectionalized and, new subdivisions, re-surveys of older subdivisions, and retracements of rancho boundaries, all of which would be similar to work encountered elsewhere in California but a substantial portion of the surveying practices in the foothills and mountains involves work which is somewhat unique to the area where gold was mined in the early days of California.

Re-surveys of patented mines involve techniques and procedures which would not apply to most other land surveys. The end product which is sought is the recovery or re-establishment of the exterior boundaries as in almost any other survey. In other surveys the primary corners are on the exterior and the internal corners are secondary. In subdivision of a section, for example, the primary corners are the four section corners and the four quarter corners. The internal quarter corners at the legal center of the section and the one-sixteenth corners are

secondary because their positions are fixed after locating the primary corners. In the re-survey of a mine the positions of the end points of the lode line or the mid-point of the lode may be critical if the exterior corner monuments are missing. The original surveyor began with the lode line and the position of exterior lines was established later. Another important criteria considered in the re-surveys of mines is the original field notes. These notes contain details which may not appear on the plat. When there is a conflict between the original notes and the plat, the notes take precedence over the plat.

Another kind of survey commonly found in the Mother Lode and seldom experienced elsewhere is the re-survey of townsite lots in a Trust Townsite. Most of the towns and cities in the Mother Lode were established and occupied for twenty years or more on Federal land prior to the time when surveys of sectionalized lands were completed and offered for patent. Thus, the residents of these towns and cities were claiming and occupying land which was technically not available

and were, in effect, squatters on the public lands. After 1871, the land under the townsites was patented in trust to the county judge. The townspeople paid a surveyor to locate the lots occupied by them and to record the notes and plats. The county judge then issued "Townsite Deeds" to claimants of individual lots.

As in the case of patented mines, the notes govern over the plat. Surveyors in the Mother Lode refer to these as the original Townsite Notes.

To be strictly accurate the Official Townsite Notes in the County Records office would take precedence over the original pencil version in a little brown book stored in the back room of the County Surveyor's office. In actual practice, a comparison of the two often proves useful.

The lots were surveyed as occupied and the streets or common lands received the remainder. As a consequence the boundaries of streets are often irregular in outline with many angle points and no

(continued on page 20)

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(continued from page 19)

readily discernible relation between opposite sides. The net affect is that the streets are surveyed as if they had a deed junior to the lot deeds and just the reverse of the situation which prevails for modern subdivisions. In almost every case the lots in a given block must be surveyed without reference to any other block. It is axiomatic that it is seldom safe to cross the street in a townsite re-survey.

The townsite surveys were commonly executed with a compass and bearings were shown to the nearest one-quarter of a degree. The notes for two adjoining lots may show bearings from opposite ends of their common line which differ by one-quarter to one-half of a degree. The length of lines were required to be reported in feet and inches but it is remarkable that the vast majority, after conversion to feet and decimals, are exactly divisible by 66. The indication is that the distances were actually measured with the surveyor's chain and subsequently reduced to feet. This conversion afforded multiple opportunities to make mistakes. In the downtown commercial areas many buildings were built of stone or brick with

walls in direct contact so that it really wasn't possible to run a survey on the actual dividing line between lots. The Official Field Notes recite the courses as if they were actually run on line while we know that offset lines or computational methods would have been a necessity. In some cases the dividing line between lots is located inside a two foot thick adobe or stone party wall.

The surveys of entire towns covering 500 or 600 acres and consisting of more than a thousand lots were completed in 3 to 5 days after the contract was signed. The crudity of the methods, the speed of the survey, and complications arising from the fact that the lots were often fully occupied all combined to create some outstanding survey problems. Lots which were worth \$10 to \$20 at the time of the original survey may now have a value of that much for every square foot. The original surveyor was paid only 40 to 50 cents per lot for his work. Monumentation was seldom mentioned in the notes but many of the original stone or brick buildings still remain. These structures can often be utilized as starting points and more modern buildings (constructed 75 to 100 years ago) may

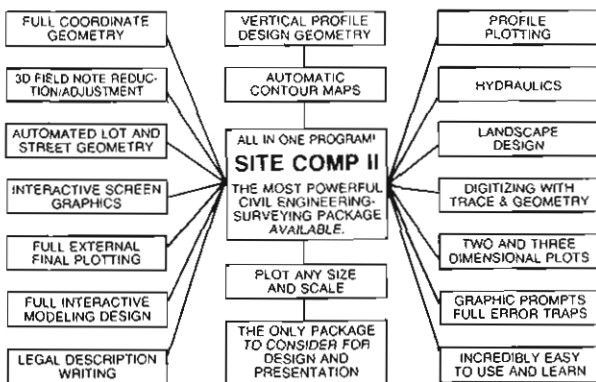
often prove to have been constructed in the same place as an earlier wooden building which existed at the time of the original survey. Re-surveys of lots in Mother Lode towns or cities may require historical research into subject matter not ordinarily considered essential to boundary determinations.

Some of the townsites established between 1848 and 1871 were situated on top of gold mines. Some grew up around earlier settlements established between 1830 and 1846 by traders or trappers when California was a part of Mexico. Mining tunnels criss-cross underground areas within several towns and cities. Some lots are owned by extinct mining corporations and quiet title suits are often needed to extinguish these antique rights so productive use of the land can be resumed.

Some Mother Lode Land Surveyors find themselves involved in work related to modern day mining activity. Surveyors of new claims assist miners on public lands who need to keep accurate track of their claim in order to meet new B.L.M. requirements. The current price of gold has stimulated activity in older

(continued on page 21)

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(continued from page 20)

mines and surveys are sometimes needed to verify or disprove a claim of underground trespass.

The Land Surveyors of the Mother Lode Chapter of CLSA follow practices similar to those of other surveyors throughout California for their work on agriculture, timber, residential, commercial, and industrial lands. However, their work in old mining towns and gold mines offers unique opportunities to solve challenging and unusual problems which would seldom be encountered in the flat lands or coastal areas of California. □

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### Loss Control for the Surveyor

In looking at controlling the liabilities of a surveyor, and consequently controlling losses, I think we must go back to exactly what the profession requires of an individual. It seems that it requires following a trend that has re-emerged in many professional fields, from teaching to the practice of medicine, and that trend is one of getting back to basics. The surveying profession requires the basic elements of care, skill, attention to details and good judgment. The principles are few, but the applications are many and varied. Each survey presents particular problems, but if the principles are properly mastered, the resourceful surveyor will have no difficulty in making the necessary applications.

### Basic Care and Skill

The surveying field has become increasingly "HI-TECH" and the surveyor needs to be aware of the ever present possibilities of errors inherent in the equipment he uses, the process itself, and possible

mistakes due to carelessness.

It is essential that the surveyor understand the limitations of the instruments which he is using and make regular checks to insure their accuracy and conformance to set standards. Have you visited one of the EDM Baseline sites within your state in the last three months to check the calibration of your equipment? Have you received verifiable instruction in the use of any type of equipment you've purchased? If not, your credibility as a professional may be questioned in court should you be called to defend yourself in a suit.

In a survey the exactness, or precision desired will vary according to the purpose of the survey, but a surveyor never performs a "rough" survey for a client. Future owners of the property have a right to expect that the Professional Surveyor performed a "Professional" job and they should be able to depend on accurate measurements to the normal standards of care.

Sufficient checks must be applied in the field and in the preparation of plans so that inexcusable errors and mistakes may be eliminated from

(continued on page 22)



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(continued from page 21)

your field results. Do you take pictures of survey sites for your field notes, or have another surveyor check your work on a regular basis?

Knowledge is the most important element of skill. Are you constantly increasing your knowledge of your profession by attending Association meetings and seminars and continuing your reading regarding developments and changes in the industry?

Are you aware of the minimum standards of care set by your Association? It is only in not working to these standards that a case can be made against you.

**Attention to Details and Good Judgment**

It is not necessary to make a technical error to be the defendant in a suit. A misunderstanding between the surveyor and his client with respect to what was to be done, or to what accuracy, or when it was to be completed, is far more likely to result in a civil action than cases of actual error.

In this light, the importance of a contract becomes evident. The contract can be the most important basic protection for the surveyor.

We are not attorneys, but we offer the following points as guidelines for a contract. At best, you should contact an attorney to develop a contract that will suit your firm's specific needs. Generally, a good contract:

- defines in writing the agreement that has been made between a surveyor and his client.
- specifies type of service and its extent.
- indicates products to be rendered.
- expresses any client assistance necessary.
- lists the standards to be employed or accuracy to be attained.
- sets forth fee and billing information.
- gives a schedule of completion.
- notes a procedure for change orders and any special considerations.

It is important, in contract language, to avoid an express warranty. In other words, never guarantee there isn't any error in a survey. The professional should strive to restrict his liability to true negligence, defined as not working to accepted standards. Most Land Surveyors' Professional Liability Insurance

policies contain specific wording to exclude coverage for claims arising out of Express Warranties.

One important detail to remember with regard to loss control is the element of insurance. The surveyor must look at insurance as a loss control tool. Twenty-five percent of the suits that were filed against surveyors who insured with Gregg-Miller and Associates were in the form of "nuisance suits". Insurance coverage is available for the protection of a surveyor should he become involved in a suit resulting from an error in his work, but it also provides the financial means for a surveyor to pay the awesome expense of defending himself in those suits where it is determined that the surveyor was not at fault.

Protect your assets from all angles. Structure your practice so that you and your employees adhere to the principal ingredients that constitute a Professional organization. If you cause each individual in your firm to maintain the care, skill, attention to detail and good judgment that are the marks of a true professional, your liability will be reduced. □

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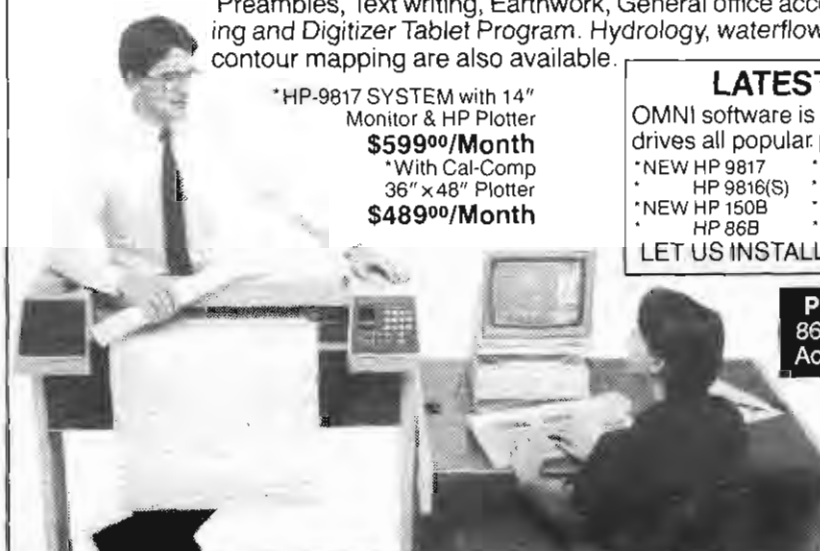
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**SURVEYING THE ALASKA RAILROAD**

by John Pettley

This past summer I had the opportunity to work for the Bureau of Land Management in Alaska as a cadastral surveyor. The position was arranged through the Cooperative Education program at California State University, Fresno.

The BLM in Alaska is involved in many different projects, including rectangular control surveys, native Alaskan property allotment surveys, and various special projects. Some of the advanced survey equipment used includes electronic distance meters, Doppler satellite stations, and helicopter borne computer inertial systems. Tracie Mesloh, another surveying student at CSUF, and myself were fortunate to have been chosen to work on one of the BLM's special projects, the original survey of the Alaska Railroad right-of-way.

Up until the summer of 1984, the Alaska Railroad was the last federally owned and operated railroad in the United States. However, that summer, ownership of the railroad was transferred from the federal government to the State of Alaska,

for the sum of 22 million dollars.

It was agreed that the BLM would be responsible for surveying all railroad right-of-way monuments every half mile, and retracing all railroad property boundaries. The railroad right-of-way had never been surveyed before. In addition, points where existing section lines intersected the railroad right-of-way were to be monumented.

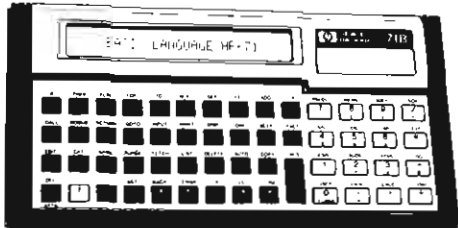
During the summer of 1983, horizontal control was established along the centerline of the railroad tracks. This was accomplished by using a Doppler Satellite Station, located in the mountains near Seward, to establish longitudes and latitudes. An inertial system, mounted on a railroad vehicle, was then used to establish horizontal control points every half mile along the 500 mile length of track from Seward to Fairbanks. Using this "as built" centerline data, regular circular curves were fitted to the existing centerline. Locations for right-of-way monuments were then calculated at 100 feet on either side of, and at right angles to, the centerline of the tracks.


Our task was to begin setting the right-of-way monuments, and to retrace railroad property boundaries beginning at Seward, in southeast Alaska, and working north

toward Fairbanks. A typical crew consisted of 3 people equipped with a Topcon GTS 2 total station theodolite, monuments, a gas powered jack hammer for driving monument rod, chain saws, and other brush cutting and miscellaneous tools.

We would usually begin about 8:00 a.m. and, after loading a rail vehicle with our equipment, drive north along the tracks as far as 50 miles to our job site. Once there, we would set the instrument over one control point, backsight another control point, and use the previously calculated angles and distances to set the right-of-way monuments. Typically, one crew would set 2 pairs of monuments per day, depending on the difficulty of the terrain. Often on very steep terrain, it was necessary to traverse up or down the tracks to get an unobstructed view of the monument's proposed location. Once the monument was set, final angles and distances were measured, and coordinates determined. Later that evening, it was the responsibility of the party chief to check that the locations of the monuments set were correct within given tolerances, and to draw a plat for each monument. □

Reprinted, CSU Fresno Newsletter, Foresight-Spring







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# Board News

John FitzGerald III and Howard Brunner have agreed to take responsibility and have joined together to act as Representative and Liaison for the California Land Surveyors Association to the Special Committee on the ASCE Right-of-Way Manual.

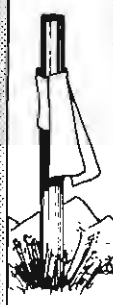
The ASCE Right-of-Way Manual is now being reviewed by a committee chaired by Peter Willerup of PG&E in San Francisco. The purpose of this committee is to review the criteria in the Manual. What was intended to be a guideline is now being adopted by a number of agencies as policy, the effect of which is requiring Records of Survey for Right-of-Way Surveys.

It is anticipated, at this time, that through the efforts of John FitzGerald and Howard Brunner, the Association will be a corresponding member due to budgetary constraints. Mr. FitzGerald and Mr. Brunner will send copies of correspondence to the Central Office for inclusion with the Board's Agenda for informational purposes.

It appears this is an issue on which the Association should eventually take a position on behalf of the surveyors in California, and, therefore, it is an important matter for us to study. □

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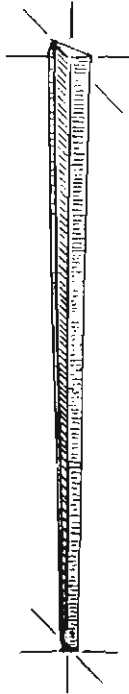
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	SDM3ER 1 mile/10 sec	55	35	25
	SDR2 collector	25	15	10
	SDM3E 1 mile/3 sec	40	27	20
Topcon	ET1 1 mile/1 sec	70	45	35
	FC1 collector	25	15	10
	GTS3 1 mile/5 sec	55	35	25
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	B2C level 32X	10	5	4
Topcon	DT20 20 sec/elect.	20	12	10
	TL10DE 10 sec.	20	12	10
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# Letters to the Editor

To the Editor:

Since Senate Bill No. 1837 became law, many surveyors are considering its implications. Some of these concerning enforcement are now in the "only time will tell" state. At any rate, there is no clear cut consensus.

But of greater importance, I am now hearing arguments that this is a bad bill, and should be reviewed, modified, and altered to remove the points of onerous contention.

I was asked by Sam Becker, a well known land surveyor from the Los Angeles area, to give my comments to him. I have, in the form of the enclosed letter to him. My remarks are brief and do not claim to be all inclusive in presentation.

I am willing to take the heat should there be marked criticism of your willingness to publish it.

Dear Sam:

I have reviewed SB 1837 (Montoya) at my leisure, have considered some of its implications, and have noted in the following a few salient points. My reply to you is brief, but I shall be glad to meet with you and any others on the issue any time convenient to us in the near future.

SB 1837 (Montoya) is a classic example of creeping control on the part of state and local officials whose arguments hinge on the premise that they know what is best for the public. This bill imposes on the surveying profession the obligation to file a record of survey any time the points or lines set during a survey of any parcel described in any deed or other instrument of title recorded in the county recorder's office are not shown on any subdivision map, official map, or record of survey.

Since the largest area of land in California is that formerly under the surveying jurisdiction of the General Land Office (now the Bureau of Land Management), and much of this land has passed to private ownership, virtually all of this land would be subject to the provisions of this law and would have to have a record of survey filed should almost any conceivable type of resurvey be done on it. There is no argument as to the need and necessity for this being done should conditions be disclosed as set forth in Section 8762(a). With this, there is little valid opposing argument. But to say that all such resurveys are subject to the intent of Sec. 8762(a) is patent obstructionist bureaucracy at its worst. Every rural area in the state would be swamped with records of sur-

vey demands regardless of whether Sec. 8762(a) is applicable or not!

The next largest area of land in California is that covered by normal subdivisions filed in the past. Again, some of these, upon resurvey of the whole or parts, would disclose conditions coming under the purview of Sec. 8762(a), and again, there is little to support opposition to not having to file a record of survey. But for most of these, this discrepant condition does not exist, and the ever tightening grip of Big Brother is not needed.

FOR:

1) Areas do exist in which little or no mapping exists apart from the original Rancho or U.S. Public Land definition. New mapping would be useful, especially if subjected to an official checking process.

2) Surveyors who formerly ignored Sec. 8762(a), and this includes both private surveyors and public agencies, would now have to go "full disclosure".

3) Benefit to the public. This is the classic Big Brother argument.

AGAINST:

1) A tremendous rise in the cost of all surveys would result.

2) No guarantee exists that throughout California a checking procedure would be equitably applied.

3) As mentioned before in this letter, this bill attempts to fill the voids in many of the recorded maps now existent by forc-

ing current surveys, surveyors, and the public to pay for the process.

RECOMMENDATIONS:

That all surveyors and surveying organizations draw the attention of their peers to this problem, and upon remedial review, seek legislative assistance. Initially, this should be by professional legislative advocates (lobbyists, if you will!), and then by collective and individual pressure upon the members of the legislature once the appropriate legislators are named.

Respectfully submitted,  
Ira H. Alexander

To the Editor:

I am writing as an individual member and not in conjunction with the Membership Committee or the office of Treasurer.

I would like to thank the "California Surveyor" for this opportunity to reach all the Licensed Land Surveyors in California. You, the readers, may or may not be aware that the California Land Surveyors Association publishes and distributes this periodical for your benefit and as a service to all of you, whether you are a member and support the Association or not.

(continued on page 30)

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## Letters to the Editor (continued)

(continued from page 29)

CLSA feels that our profession needs its own forum for discussion and information and has taken the initiative to provide it.

As a Professional Land Surveyor and member of CLSA, I also would like to take the initiative and address those of you who are not members of the only association in your state that exclusively represents your profession.

First, let me explain that I feel the inevitable result of an active association is an increase in membership which in turn supports even more activities. Over the last few years, CLSA has made a concerted effort to increase our exposure and political influence in Sacramento. The success with the SB2 legislation, the increased influence at the State Board of Registration, and the resulting improvements in relations with other organizations is evidence of this progress. I feel that another major step that CLSA can take for the profession is the establishment of a program of public education and awareness. This is a goal in

which each of us can, and I believe should, become involved.

In my opinion, the sooner we educate the public and make them aware of our expertise and professional responsibilities, the sooner we will be able to address many of our problems. It will be easier to discourage the unlicensed practitioner, be they building contractors or civil engineers who are either not authorized or not competent to practice, to discourage the writing of worthless and verbose descriptions that frequently come out of the attorney's office, and especially, to minimize the amount of time we spend justifying survey costs and requirements to our clients.

As individuals, the tasks before us are overwhelming and I don't believe we stand a chance. As an association, for us to be successful in monitoring legislation, promoting educational opportunities and improving our public image, we must have the assistance of the majority of surveyors in our state. Unfortunately, a minority of surveyors have accepted the responsibility of

providing these services for the rest of you. As CLSA reaches its twentieth year of service, I am requesting your support.

Every "California Surveyor" provides membership application forms. Before you file this issue, I hope you will consider my message, and by joining the association, give your profession a helping hand.

For those of you who are already state members, I believe the association is working diligently to support you and your profession. CLSA must work on a very stringent budget, and relies totally upon volunteers who contribute time and additional money, at the expense of their own businesses and families. Your continued financial support is truly appreciated, and I would hope that you will question the non-members in your area who have been receiving the same benefits, without sharing any of the financial burden.

Susan Anne Jensen, LS 5144  
Jensen-Lenger Surveys  
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# News Briefs

## NOTICE OF N.S.P.S. AWARDS

The National Society of Professional Surveyors (NSPS) is sponsoring four awards to be given for excellence in the surveying profession this year. For more detailed information, contact the chairman of the award committee. The awards and their guidelines are:

### 1) Surveying Excellence Award

Chairman: M. Louis Shafer, 520 Loretto Drive, Roseville, CA 95678

This award is presented to a person who has performed outstanding service to the surveying profession. It is not necessary that the person be a surveyor or member of NSPS or ACSM, but candidates must be nominated for the award by an ACSM affiliate section or two NSPS members at large. This award includes an engraved plaque and a \$500 honorarium contributed by Technical Advisors, Inc., Wayne, Michigan.

Each candidate must be nominated by an ACSM section or affiliate or two NSPS members at large. If nominated by an ACSM section or affiliate, the nomination must be signed by two officers of the organization. If nominated by two NSPS members at large, the nomination must be signed by the sponsors and must be accompanied by four letters of recommendation.

Upon request, a copy of the presentation made in behalf of a previous award recipient will be furnished to persons or organizations wishing to nominate a candidate to be used as an aid in presenting their nominations.

The Chairman must be notified of any nomination by December 1,

1985. The following factors will be considered in determining the recipient of the award:

- Service to the profession
- Service outside the profession
- Types of Survey activities
- Publications
- Legislative effort
- Improvements in, or refinement of surveying equipment and techniques
- Recognition as a professional leader
- Membership and activities in survey and related professional organizations
- Other factors demonstrating breadth of professionalism, activities and development

### 2) Surveyor Project of the Year Award

Chairman: Kelly Olin, 925 Mission Way, Sacramento, CA 95819

This award consisting of a \$200 honorarium and plaque contributed by Pentax Corporation, Englewood, CO, is presented to the person who submits the best paper describing a surveying project in which the candidate has directed or participated. The project need not have occurred in the last year. The paper is judged on its usefulness and permanence to the profession, breadth of geographical and technical application, originality, and presentation.

Interested candidates should submit an abstract, not exceeding 200 words, by the end of October and the final paper by the end of December. In addition to the honorarium and plaque, Certificates of Merit are awarded to those candidates whose papers, although not chosen for the award, in the opinion of the judges are of a professional

quality and worthy of recognition.

### 3) Student Project of the Year Award

Chairman: Edward Zimmerman, Area Chair, Survey Technology Dept., Sacramento City College, 1828 Hungry Hollow Rd., Lincoln, CA 95648

This award consists of a plaque, a \$100 honorarium contributed by Landmark Enterprises, Rancho Cordova, CA, and travel expenses to the ACSM-ASPRS Spring Convention paid by NSPS.

The paper should describe a project in which the applicant was a participant and may involve a group of students and/or non-students. The writing of the paper, however, must be an individual effort. Advice and constructive criticism from the applicants' instructor or supervisor is permissible and encouraged. The project need not have occurred within the preceding 12 months. All papers submitted will be considered for presentation and publication by ACSM. Specifications for the format of the manuscript can be acquired from the chairman.

Papers should be submitted to the chairman by January 15, 1986.

The following factors will be considered in their determination:

- 1) Originality
- 2) Creativity
- 3) Uniqueness
- 4) Practical application
- 5) Overall quality of the paper

Any undergraduate student enrolled in a surveying or surveying related program (e.g., civil engineering, forestry, etc.) is eligible for this award.

*(continued on page 32)*

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(continued from page 31)

4) Excellence in Professional Journalism

Chairman: Kenneth S. Curtis, 2204 Happy Hollow Rd., West Lafayette, IN 47906

This award is an engraved plaque presented annually to the ACSM affiliate society whose newsletter was judged to have the highest quality during the previous year. Any editor wishing to participate should contact the chairman for information.

These awards are presented at the spring ACSM-ASPRS Convention.

CALIFORNIA STATE POLYTECHNIC UNIVERSITY AT CAL POLY, POMONA "SURVEY OPTION" TO THE CIVIL ENGINEERING CURRICULUM, APPROVED BY CHANCELLOR

by Kevin D. McHugh, President California Foundation for Land Surveying Education

It is with a great deal of satisfaction that the Officers of the California Foundation for Land Surveying Education announce that the Chan-

cellor of the California State University System has given final approval to Cal Poly, Pomona, to proceed with the offering of a Bachelor of Science degree in Civil Engineering, with an Option in Surveying.

This approval is considered by the Foundation to be the achievement of its initial goal, and a major accomplishment for the surveying profession in California.

Much credit goes to the California Council of Civil Engineers and Land Surveyors, and the California Land Surveyors Association for their foresight in providing initial funding and professional support to the Foundation in the pursuit of their endeavor to re-establish land surveying education in California universities. Local American Congress on Surveying and Mapping and American Society of Civil Engineers' chapters have also made financial donations to this cause. Many hours of hard work, and even harder negotiations with the University, were put in by the Officers of the Foundation in working toward its initial goal.

The Foundation views the ap-

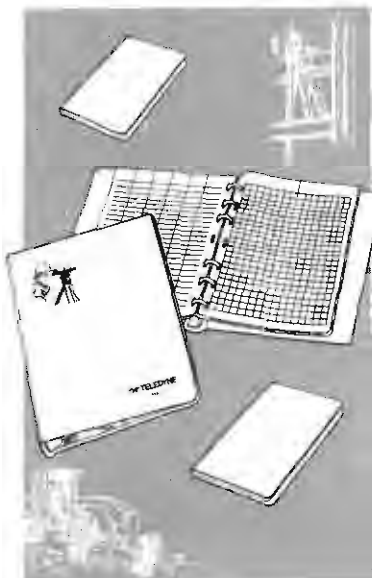
proval of the "Survey Option" as merely the beginning of an outstanding opportunity to restore full, adequate formal education availability for surveyors. There is now much to be done in preparing course material, finding qualified instructors, giving continuing technical support to the University, expanding the efforts to other areas of California, continuing to attempt to expand the curriculum, assisting in the job placement of graduates, and in trying to provide financial assistance for students and the University. This will require the full financial and professional support of engineers and surveyors throughout all of California. We ask you to make a donation to the Foundation to help us to continue our work. Any donation will help... \$5 to \$\_\_\_\_, whatever you can afford. We will have extreme difficulty without your commitment to your profession and livelihood.

Now that the first hurdle has been jumped, we are going to enter discussions with Chico State University through northern California Cal

(continued on page 35)

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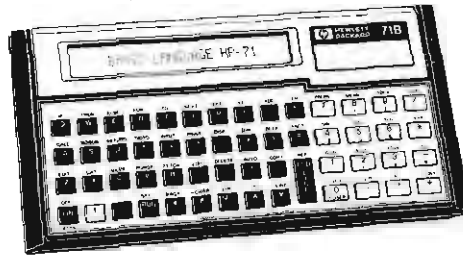
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by John Rusch



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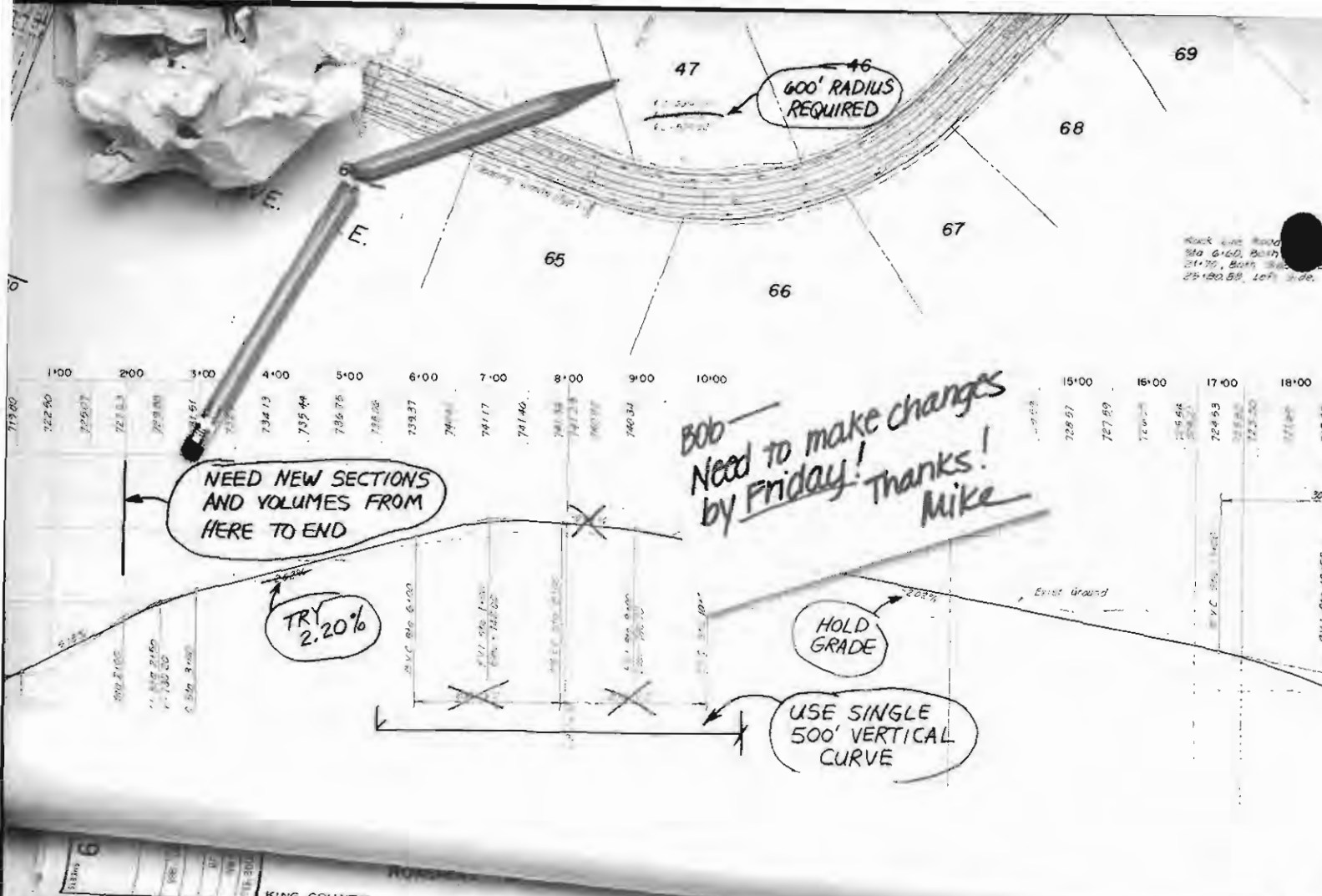
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(continued from page 32)

Council and California Land Surveyors Association members. Discussions are also being held with Fresno State University. A new slate of officers will be elected and will continue to pursue the Foundation's goals, and interface with the northern California group.

With your help, the "second oldest profession" will continue the high standards it has been known for. Donations can be made to:

The California Foundation for Land Surveying Education, P.O. Box 4198, Irvine, CA 92716. □

**JANUARY 16, 1985  
IMPLEMENTATION OF NEW  
RECORD OF SURVEY  
LEGISLATION**

by D.O. Flatt, Legislative Advocate  
To all members of the California Land Surveyors Association:

This is to remind you that SB 1837 (Montoya) became effective on January 1, 1985. This bill was jointly advocated by CLSA and the California Council of Civil Engineers and Land Surveyors. The principal objective of the bill was to promote

more frequent filing of records of surveys by simplifying the process and making it less costly.

As you may know, under existing law (prior to passage of SB 1837), county surveyors were authorized to charge a "reasonable fee" for examining records of survey submitted by practicing land surveyors. This "reasonable fee" ran to several hundred dollars in some counties; other counties charged no fee whatsoever.

It is important for you to note that SB 1837 changed existing law as it pertains to the record of survey examination fees imposed by county surveyors.

Under the new statute, the county surveyor may charge a reasonable fee for examining a record of survey, but the fee shall not exceed the cost of service or \$100 whichever is the lesser. This \$100 maximum may be increased by a county board of supervisors, but only if done by ordinance and pursuant to a staff report demonstrating that the cost of survey actually exceeds \$100 per record of survey.

The CLSA Legislative Committee

recommends that all chapters keep a careful eye on their respective county surveyors and boards of supervisors to ensure compliance with SB 1837.

As a general rule, counties that have been charging fees in excess of \$100 per survey should be dropping their fees to \$100 or less. In exceptional cases the fees may exceed \$100, but note that fees which exceed \$100 must be supported by studies which justify a higher fee and enactment of an ordinance by vote of the board of supervisors.

SB 1837 simplified the review responsibilities of county surveyors. Therefore, the cost of review should reflect this simplification. We suggest that fees proposed by counties be monitored by CLSA chapters. Increases that do not seem reasonable should be called into question.

Also, keep in mind that the \$100 maximum fee is not an "automatic". The statute reads "the fee shall not exceed the cost of the service or \$100 whichever is the lesser". Be sure that fees are directly related to the cost of review. □



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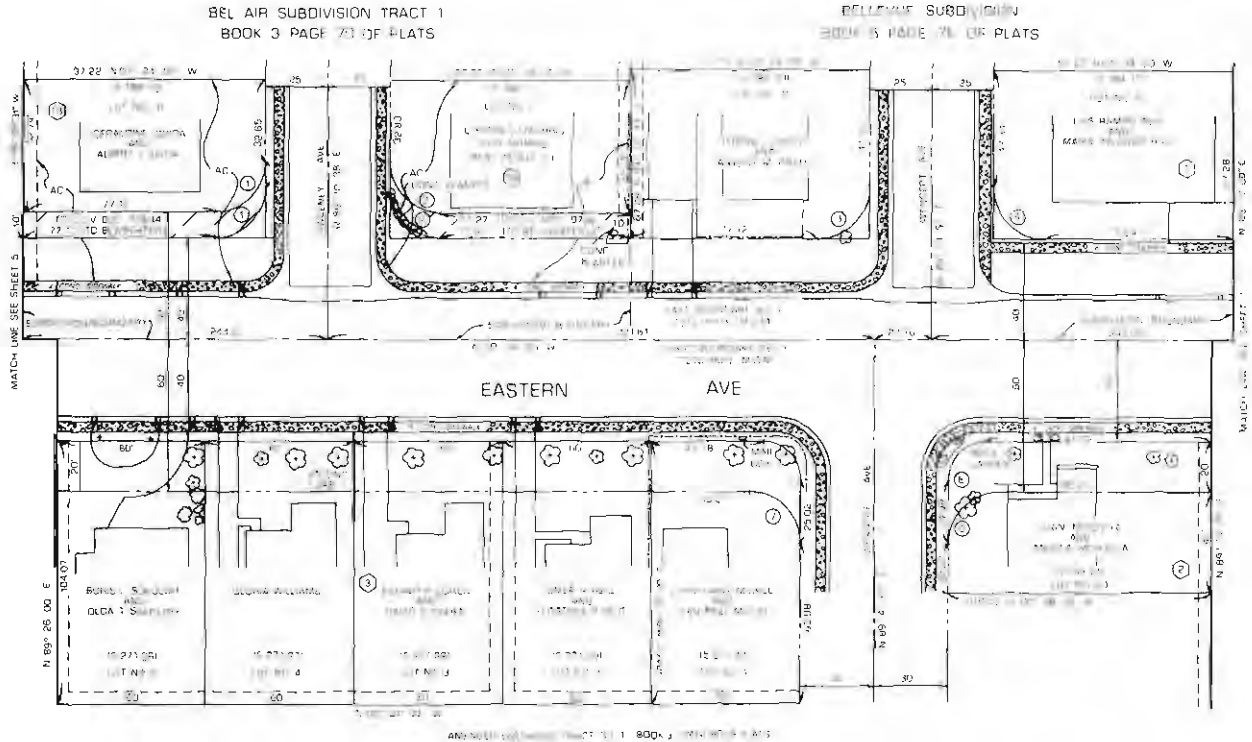
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# Board of Directors Meeting

## 5/4/85 BOARD OF DIRECTOR'S MEETING MINUTES

(condensed for publication)

by Louis E. Rutledge, LS Secretary

The CLSA Board of Director's Meeting was held at the Sheraton Plaza LaReina, 6101 W. Century Blvd., Los Angeles, CA.

The meeting was called to order by President Michael McGee.

**MINUTES:** Moved, seconded and carried that the minutes be approved, as distributed.

**PRESIDENT'S REPORT:** President McGee recommended the following Standing Committee appointments: ByLaws Committee Chairman, Neal Campbell; Nominating Committee member, Jim Crabtree. Moved, seconded and carried to accept the appointments.

**Special Committee Appointment:** Political Action Committee Chairman, Jim Adams.

President McGee wrote a letter to Paul Lamoreaux recognizing his election to the NSPS/ACSM Board of Directors.

**VICE PRESIDENT'S REPORT:** Dick Siegmund reported he had written letters to all CLSA Chapters, requesting their meeting dates in order that he could attend their meetings to present the Association's goals and discuss CLSA's direction.

**TREASURER'S REPORT:** Susan Jensen presented the Treasurer's Report and Budget. Moved and seconded that the budget be adopted, as presented. Motion carried.

Moved to table the resolution to reimburse chapter representatives held over from the January Board meeting. Moved, seconded and passed. This item to be discussed at the President's Advisory Committee meeting and brought back to the Board at its next meeting.

Susan reported on the donations to the NSPS film. Over \$1,000 was donated by chapters, to be presented to the President of NSPS at the conference in San Diego.

**Association's Financial Audit.** Moved and seconded that "If the Audit Committee thinks it necessary to engage the services of a CPA that they be allowed to do so." The motion was withdrawn. A new motion was made, and seconded, "that regardless of what happens this year, that a CPA audit the books

next year." Motion failed. The Audit Committee will conduct the audit in the manner that they deem necessary as directed by the President.

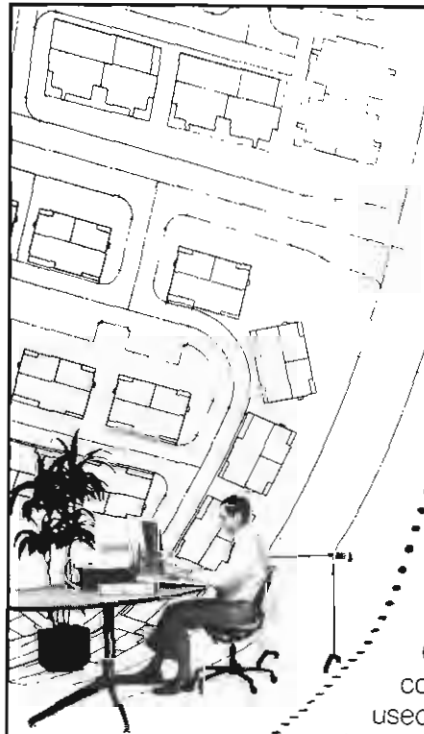
**ADMINISTRATIVE MATTERS COMMITTEE:** Fred Kett presented a verbal report detailing items under discussion by the Committee. The Association's Organizational chart was included in the agenda. One point of the report involved the publication of a roster. A straw vote was taken to determine if the Association would like to have the staff of the California Surveyor prepare a roster. Straw vote passed. The President directed the California Surveyor Editor to prepare the roster, with the direction by the AM Committee.

Moved, seconded and passed to establish the position of President-Elect, with the "AM" Committee to establish the duties.

**LEGISLATIVE COMMITTEE REPORT:** Hal Davis reported on legislative activities. CLSA is opposed to the bill that would allow anyone to operate a business offering surveying and civil engineering whether or not that person was licensed/registered.

Moved, seconded and passed to direct the legislative committee to take under advisement and report back to the Board prior to December of this year, Orange County Chapter's resolution to request the Board of Directors of

(continued on page 38)



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(continued from page 37)

CLSA to direct the Legislative Committee to prepare and process legislation to revise all appropriate sections of the Land Surveyors Act, to replace Licensed Land Surveyor with Professional Land Surveyor, and to revise the title of the act to read "Professional Land Surveyor's Act" or, prepare and process legislation to add Professional Land Surveyor to the list of titles in Section 8751 of the Land Surveyors Act."

California Coordinate Legislation. President McGee to write Jim Dowden a letter thanking him for his efforts in preparing draft legislation and will dissolve the committee in that it has accomplished its task.

Moved, seconded and carried that "This Board of Directors does approve the methods and procedures presently utilized by the Legislative Committee in legislation."

Membership Committee: Susan Jensen resigned as chairman of the committee due to pressing involvement in both the state and local chapter. Her resignation was accepted. Michael O'Hern was appointed by the President and approved by the Board.

Moved, seconded and carried that

this Board commend Susan for her efforts as Chairman of the Membership Committee.

Professional Practices Committee: Louis Hall reporting. Moved, seconded and carried that a certificate of appreciation be sent to Harold Bakken. Lou offered the state's assistance in setting up Chapter Professional Practices Co.

California Surveyor: Ron Greenwell, Editor, requested articles from the various committee chairmen. He also requested the chapters submit a condensed report of their meetings.

Public Works Liaison: Lou Hall reported that CLSA still has not been accepted as a member of this Committee. Lou would still like to pursue membership. Moved, seconded and passed that CLSA pursue membership in the Public Works Liaison Committee.

President McGee passed the gavel to Vice President Richard Siegmund due to air travel commitments.

Western Federation of Professional Land Surveyors. Moved, seconded and passed to approve the appointment of Mike Welch for one year and Jerry Tippin for two years

to the WFPLS.

Proprietors Council: Dorothy Calegari reported on a proposed formula, on a per share basis, for the distribution of "PC" funds. Moved, seconded and passed to so disburse the funds.

Moved, seconded, and passed to have Dorothy or Michael include a letter with the checks.

Resolution 85-6: Moved, seconded and passed to authorize the Treasurer or Executive Director to open an account in the name of the Association.

Resolution 85-7: Moved, seconded and passed to award an honorary membership in the California Land Surveyors Association to Dr. D. Eugene Slavoj.

Resolutions were presented to the Board by the East Bay and Orange County Chapters requesting a full Corporate membership for the "surveying" Civil Engineer. Roll call vote was requested. Moved, seconded and passed that this resolution be taken back to the chapters for membership vote and bring that vote back to the Board at their next meeting. □

## New Members

### WELCOME NEW MEMBERS

#### CORPORATE MEMBERS

Jesse L. Stanley, LS  
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Peter J. McCawley, LS  
Thousand Oaks  
Barry A. Rockwell, LS  
San Diego  
J.R. Banister, LS  
Poway  
Del Brokaw, LS  
Poway  
Saturnino Basuil, LS  
San Diego  
Danny F. Horn, LS  
Paso Robles  
Cliff Cooper, LS  
Hayward

#### ASSOCIATE MEMBERS

Mark Steele Turner, LSIT  
San Jose  
Mark C. King, LSIT  
Redding  
Maria B. Hammond, LSIT  
Sacramento

#### AFFILIATE MEMBERS

Robert Anderson, Santa Ana

#### STUDENT MEMBERS

Eileen M. Forrester, Fresno  
James Kiehl, Kerman  
Robert Leto Ozbirn, Clovis  
William A. Lincoln, Canoga Park  
Scott M. Sherwood, Fresno  
Alvaro Bolivar, Fresno

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# Of Interest

## CSU, FRESNO SURVEYING ENGINEERING WORKSHOPS

The faculty of the Surveying Engineering program at CSU, Fresno proudly announce a series of workshops for the summer, fall, and winter of 1985-86, culminating with three workshops scheduled during the week before the 25th annual surveying conference. Separate, detailed advertisements will be sent under separate cover. If you do not

receive a formal application, please write to the newsletter or to:

Dr. James K. Crossfield, Dept. of Civil and Surveying Engineering, CSU, Fresno, Fresno, CA 93740-0091 (209) 294-2965/2889

A brief summary of the topics, dates, places, instructions, and costs are listed below:

- Astronomy for Azimuth, Aug. 16-17, Monterey area, Nader and Crossfield, \$75

- Electronic Distance Measurement, Sept. 20-21, Fresno, Munjy, \$50
- Comprehensive Surveying Review, Oct. 4-6, Fresno, Nader, Crossfield, Hatzopoulos, Munjy, \$150
- Non topographic Photogrammetry, Oct. 25-26, Fresno, Hatzopoulos, \$100
- Least Squares Surveying Adjustments, Nov. 15-16, Fresno, Hatzopoulos, \$100
- State Plane Coordinates, Nov. 22-23, L.A. area, Nader and Crossfield, \$75
- Land Records Information, Jan. 13-14, Fresno, Crossfield, \$100
- Analytical Photogrammetry, Jan. 15-16, Fresno, Munjy, \$100
- Hp 41C Calculator Programs, Jan. 15-16, Fresno, Nader, \$100
- USPLSS California-Nevada Border area, July 26-27, Reno, Nader

\$50 and \$75 courses are typically scheduled 6-10 p.m. Fridays and 8 a.m.-5 p.m. Saturdays. The comprehensive review is 1-5 p.m. Friday and 8 a.m.-5 p.m. Saturday and Sunday. The other courses are 8 a.m.-5 p.m. Friday and Saturday. Let us know if there is any other particular topic or time that would better suit your needs. This will help us to effectively schedule our 1986 program. We will make every effort to accommodate you at any available time if you can guarantee 10 or more enrollees.

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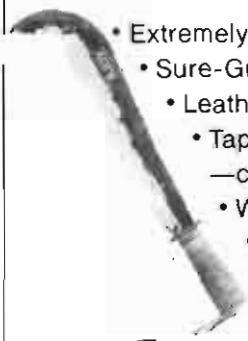
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### AN OLD NEW METHOD FOR GETTING AZIMUTH

The Orange County Chapter of CLSA is presenting a Solar Azimuth Workshop on November 15&16, 1985 at the Santa Ana College, Santa Ana, CA.

For details, write: CLSA Orange County Chapter, P.O. Box 4012, Santa Ana, CA 92702





**FIELD NOTES**  
**APRIL, 1985**

FIELD NOTES is a monthly report on the activities of the ACSM-ASPRS Joint Government Affairs Program and government related news of interest to surveyors and mapping scientists. Reproduction is encouraged, but credit of source is appreciated. (Note ASP members voted in March to change the society's name to American Society for Photogrammetry and Remote Sensing (ASPRS).

**Quality Assurance Sought in Superfund A/E/S/M Services.**

The Senate Environment and Public Works Committee held hearings April 3 on insurance implications related to the cleanup of hazardous waste sites under the Federal "Superfund" program. James E. Poirot, Chairman of the Board of CH2M Hill (ASPRS Sustaining Member) testified on behalf of the American Consulting Engineers Council and a coalition of architecture, engineering, surveying and mapping societies, including ACSM-ASPRS. He proposed a quality assurance amendment that provides for full and open competition for all Superfund contracts and subcontracts; use of Brooks Bill procedures for all contracts, subcontracts or state and local grants used for architect, engineer, surveying and mapping services; and limitations on "response action" contractor liability. Current Superfund law contains "strict, joint and several" liability which extends responsibility for a hazardous site to all connected parties, including those hired to clean the area. Poirot said "Superfund cleanups are so critical to the protection of the environment and public health that the system by which technical professionals are chosen must clearly emphasize qualifications and experience." Quality assurance in the Superfund Program requires that full and open competition be the standard for the selection. Meaningful protection from statutory liability must be offered to response action contractors. This is not to say that response action contractors are to be absolved of compliance with traditional standards of care. They should be accountable for their own negligent

acts." ACSM-ASPRS members are urged to contact their Senators in support of the "quality assurance" amendment. For further information, contact the ACSM-ASPRS Government Affairs Office.

**FAA Puts Photogrammetric Flight Rules in ATC Handbook**

The Federal Aviation Administration (FAA) has responded to a March request from ASPRS and the Management Association of Private Photogrammetric Surveyors (MAPPS) that clearance be granted to photogrammetric flight lines in high density air traffic areas near airports. FAA agreed to "Make every reasonable effort to accommodate these flights" and indicated that instructions were added to the FAA's air traffic control tower handbook. Pilots on aerial photographic missions are reminded to make every reasonable effort to contact appropriate air traffic control (ATC) facilities prior to missions, identify your "photo survey mission" in air/ground communications with ATC and to inform ATC when the flightline in a terminal control area commences.

**COFPAES Features Federal Contracts, Mini-Brooks Bill Video Tape**

More than 200 persons attended the Committee on Federal Procurement of Architect/Engineer Services conference, March 25-27 in Washington, D.C. The conference, managed by ACSM, featured presentations by more than 20 Federal agencies on programs, budgets and projects that will require A/E, surveying or mapping contracts.

A 12-minute video tape, "A Brief Case for Excellence in Procurement of Architecture, Engineering and Land Surveying Services" premiered at the conference. The tape urges state and local government adoption of the "Brooks Bill" process outlined in the American Bar Association Model Procurement Code provision on selection of A/E/LS services. The video tape, available to individuals or groups lobbying for mini-Brooks Bills in their states, counties or cities, can be obtained by contacting the ACSM Government Affairs Office.

**ACSM/ASPRS Boards Approve Cadastre Report, Policy Statement**  
The ACSM and ASPRS Boards of

Direction approved a Joint Government Affairs Committee task force report "Implementing a National Multipurpose Cadastre." The report, edited by task force chairman W.A. Radlinski, outlines a strategy for the societies' to make the cadastre a reality. Recommendations include, defining terms; promoting legislation to consolidate federal surveying and mapping agencies and/or establish a federal cadastre; prepare a cost/benefit study; coordinate agency activities; seek OMB appointment of a lead agency; support state and local cadastres with pilot programs; prepare guidelines for computer hardware and software procurement; encourage educational programs and research; support centers of excellence at universities; conduct a public relations program increase awareness of the cadastre; and form a joint ACSM-ASPRS committee to coordinate society activities related to the cadastre. The Boards also approved joint publication of the report and a policy statement citing "the necessity to establish a national multipurpose cadastre system to meet the land information needs of the citizens of the United States and federal, state and local governments."

Finally, the Boards approved three policy statements which will eventually become part of a legislative agenda to be published by the Joint Government Affairs Committee. The statements set the societies' views in opposition to the application of wage determination laws (Davis-Bacon, Service Contract Acts) to surveying and mapping contracts, support for the application of OMB Circular A-76 to certain surveying and mapping services, and adoption and utilization of the 1983 North American Datum.

**ACSM Seeks Farmers Home Admin. Compliance with State Licensing Laws**

ACSM has submitted comments to the Farmers Home Administration (FmHA) asking that their proposal to revise regulations on planning and performing site development work accurately reflect state licensing laws which define the respective authorities of surveyors and engineers. "FmHA regulations

*(continued on page 42)*

(continued from page 41)

should strictly comply with State licensing laws. Only those registered professionals authorized to provide a given service under State law should be authorized to provide that service under FmHA regulations," the ACSM comment said. ACSM also recommended use of the "Guide to Right of Way Survey Practices," "Minimum Standards for Property Boundary Surveys" and "Minimum Standard Detail Requirements for Land Title Surveys."

### ACSM Assists Ohio 4-Year

#### Degree Legislation

On March 22, ACSM President John Bossler submitted written testimony to State Representative Michael G. Verich, sponsor of Ohio's bill to require a 4-year degree for licensure as a surveyor. In the statement, requested by the Professional Land Surveyors of Ohio, Bossler cited advancing technology, increasing land values and the important role surveyors play in construction and real estate development as reason for the increased educational requirements. □

## FIELD NOTES

MAY, 1985

### Final Surface Mining Act Regulations Implement ACSM Amendment

The U.S. Department of the Interior's Office of Surface Mining published final regulations on April 24 which reinstate the land surveyor as "lead professional" in the Surface Mining Control and Reclamation Act. Under the new regulations, surveyors have greater authority to prepare and certify cross sections, maps and plans required in a surface mining permit application and certain sedimentation ponds, coal processing waste banks and embankments in any state which authorizes surveyors to prepare and certify such plans. The regulations are intended to eliminate conflicts with state registration laws. OSM also noted that while it did not change regulations related to another section of the law regarding post construction certification and inspection of impoundments or siltation structures, the agency "is considering whether to propose an amendment... to restore this authority to land sur-

veyors." ACSM has initiated discussion with key members of Congress on a further amendment to the Act to restore those remaining surveying services. The new regulations take effect immediately. They implement an ACSM initiated amendment to the Surface Mining Act offered by Sen. Robert Byrd (D-WV) in September, 1983.

### ACSM-ASPRS Seeks Limits on Hazardous Waste Site Clean-up Liability

Should surveying and mapping firms working to clean up hazardous waste sites be held legally and financially liable for the creation of those sites? Not according to a statement submitted to the Senate Environment and Public Works Committee by ACSM-ASPRS. A coalition of design and construction groups is supporting an amendment to the Federal "Superfund" reauthorization bill to limit application of the doctrine of "strict, joint and several" liability by making clean up contractors, including surveying and mapping firms, responsible only for their own actions. Their "quality assurance amendment" also provides for full and open competition under Brooks Act procedures for federal and state Superfund contracts and subcontracts. ACSM-ASPRS members are urged to contact their Congressman and Senators in support of this amendment. For further information, contact the ACSM-ASPRS Joint Government Affairs office.

### ACSM Joins Small Business Administration Advisory Committee

The U.S. Small Business Administration (SBA) has invited ACSM to join an informal real estate, construction and design advisory committee. At the group's first meeting on May 10, ACSM Assistant Executive Director for Public Affairs, John Palatiello, co-moderated a panel on set aside and subcontracting policies. The group will advise SBA on federal procurement issues affecting large and small firms.

### OMB Agrees to Landsat Funding; Two Year Dispute Appears Ended

The Office of Management and Budget has agreed to fund \$286 million in costs associated with the commercialization of Landsat. Ac-

ording to published reports, the Administration will submit to Congress additional requests of \$75 million for fiscal year 1985 and \$50 million for fiscal 1986. The funds will allow the Commerce Department to finalize contract negotiations with the Earth Observation Satellite Co. (EOSAT), the successful Landsat bidder. Under the agreement, EOSAT will launch two new land remote sensing satellites within the next five years. Earlier, ASPRS President Tamsin G. Barnes had written Commerce Secretary Malcolm Baldrige urging that contract negotiations be brought to "a successful conclusion as soon as possible and that the necessary funding level to accomplish this goal be made part of the Department of Commerce budget."

### Surveying and Mapping Sought for Gov't Definition of A/E Services

ACSM, ASPRS, the American Consulting Engineers Council, the Design Professional Coalition and the Management Association of Private Photogrammetric Surveyors have joined forces to urge a change in a draft definition of Architect/Engineer (A/E) services in the Federal Acquisition Regulation (FAR). The proposed FAR A/E definition would primarily limit application of the Brooks Act to contracts which require performance only by a licensed architect or engineer. The comment submitted by these groups proposes a broader definition which seeks to clarify such gray areas as surveying and mapping, soils engineering, construction phase services and planning in which the Brooks Act is not uniformly applied by all government agencies. The comment also includes a detailed legal memorandum outlining the organizations' view that Congress has repeatedly clarified its view that the Brooks Act should apply to surveying and mapping services. Among the Congressional actions cited were ACSM-ASPRS inspired provisions in the Military Construction Codification Act, 1983 Supplemental Appropriations Act and the Senate floor colloquy between Senators Percy and Cohen during consideration of the Competition in Contracting Act. The groups filed the comment after the National Society of Professional Engineers (NSPE) op-

posed the inclusion of surveying and mapping and vetoed submission of the document by the Committee on Federal Procurement of Architect/Engineer Services (COFPAES), of which ACSM and ACEC are also members.

**Construction Group Endorses Brooks Bill for Architecture, Engineering and Surveying**

The National Construction Industry Council, a coalition of 26 design and construction associations, voted unanimously on May 2 to endorse the Brooks Bill method of obtaining architecture, engineering, surveying and related services. The resolution, offered by the American Consulting Engineers Council and seconded by the Associated General Contractors, recognizes that "quality in the built environment is highly dependent on surveys, plans" and concludes that the group endorses "quality based procurement" of "architecture, engineering, surveying and related design professional services" and will "oppose any attempts to require price competition for such services."

(Reprint from ACSM/ASPRS Newsletter "Field Notes") □

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**SURVEY RESULTS**

This is to inform you of official surveys in California which have been accepted in the second quarter of FY 85 (January 1-March 31, 1985). Also included are six surveys which were approved in the first quarter (12/31/84). These surveys are now on file in the Survey Records Office, Bureau of Land Management, California State Office, 2800 Cottage Way, Sacramento, California 95825.

The accepted surveys are listed by township, range, meridian, and acceptance date.

Township & Range	Meridian	Date
T. 40 N., R. 17 E.	Mount Diablo	12-31-84
T. 41 N., R. 16 E.	Mount Diablo	12-31-84
T. 41 N., R. 17 E.	Mount Diablo	12-31-84
T. 42 N., R. 16 E.	Mount Diablo	12-31-84
T. 42 N., R. 17 E.	Mount Diablo	12-31-84
T. 43 N., R. 16 E.	Mount Diablo	12-31-84
T. 23 N., R. 13 W.	Mount Diablo	1-9-85
T. 34 N., R. 10 W.	Mount Diablo	1-9-85
T. 9 N., R. 22 E.	San Bernardino	1-17-85
T. 10 N., R. 22 E.	San Bernardino	1-17-85
T. 30 S., R. 34 E.	Mount Diablo	2-12-85
T. 30 S., R. 35 E.	Mount Diablo	2-12-85
T. 31 S., R. 35 E.	Mount Diablo	2-12-85
T. 32 S., R. 34 E.	Mount Diablo	2-12-85
T. 11 N., R. 5 E.	Humboldt	2-15-85
T. 2 N., R. 5 E.	Humboldt	2-22-85
T. 13 N., R. 6 E.	Humboldt	2-22-85
T. 22 N., R. 5 E.	Mount Diablo	2-26-85
T. 33 N., R. 7 W.	Mount Diablo	2-26-85
T. 46 N., R. 5 E.	Mount Diablo	2-26-85
T. 23 S., R. 37 E.	Mount Diablo	3-11-85
T. 23 S., R. 37 1/2 E.	Mount Diablo	3-11-85
T. 36 N., R. 2 W.	Mount Diablo	3-11-85
T. 36 N., R. 4 W.	Mount Diablo	3-11-85
T. 37 N., R. 3 W.	Mount Diablo	3-11-85
T. 38 N., R. 3 W.	Mount Diablo	3-11-85
T. 14 S., R. 38 E.	Mount Diablo	3-12-85
T. 24 N., R. 3 E.	Mount Diablo	3-12-85
T. 5 S., R. 37 E.	Mount Diablo	3-20-85
T. 15 N., R. 6 E.	Humboldt	3-29-85
T. 15 N., R. 7 E.	Humboldt	3-29-85
T. 15 N., R. 8 E.	Humboldt	3-29-85
T. 16 N., R. 7 E.	Humboldt	3-29-85

Supplemental plats in the following townships were also accepted during the second quarter.

Township & Range	Meridian	Date
T. 16 N., R. 8 E.	Mount Diablo	2-22-85

—Clifford A. Robinson, Chief, Branch of Cadastral Survey

**Sustaining Members**



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