

Institutional Affiliate of American Congress on Surveying and Mapping.

# The California Surveyor

No. 78

The Voice of the Land Surveyors of California

Spring, 1985

The Old Bearing Tree

A Limited Edition Sculpture



(For more information, see page 3)



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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

Owner: California Land Surveyors Association  
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 Sales/Production Manager: Lisa Reese

### ADVERTISING

Commercial advertising is accepted by *The California Surveyor*. Advertising rates and information can be obtained by contacting Lisa Reese, 312 Carrillo Street, Santa Rosa, CA 95401, (707) 542-3460.

### 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.

EDITOR: Ronald Greenwell, L.S.  
 1023 San Carlos Drive  
 Antioch, CA 94509

### COVER PHOTO

(see page 3)

### DEADLINE DATES FOR THE CALIFORNIA SURVEYOR

Summer ..... June 15, 1985  
 Fall ..... September 15, 1985

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

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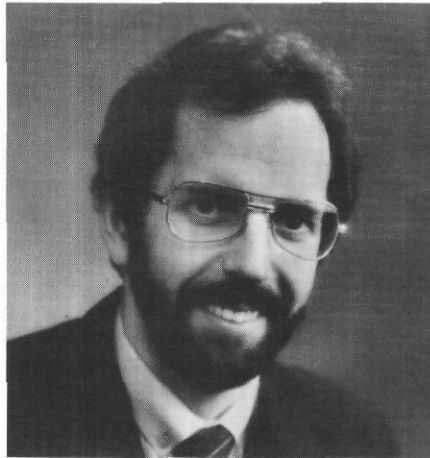
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# President's Message

I would like to take this opportunity to inform you of the January Board of Directors Meeting-Installation of Officers: by conveying a synopsis of my opening remarks to the new and returning members of the Board.

Directions of the Association, the importance of communication, and responsibility of members on the Board and to the Board as well as the Association were discussed as follows:

*"We are preparing a summary of Board Actions and Resolutions dating back 18 years. . . it will help you see our history, some of our accomplishments, and the directions we should be moving in for consistency with our past Boards. . . we are reminded of our responsibility to participate here, to make the best of it. We are only here for a short time, four times a year and our responsibility to communicate what happens here back to the Chapters and back to the members. It is my feelings, at times, there is some apathy on the individual and Chapter levels. . . The promotional aspects of this association start right here and the participation starts right here. You've got to get involved here, you've got to make it work here and you've got to carry it back to the members. We have a lot we need to work on this year in terms of promoting the Association, making this Association show up on the individual level, so that people feel they are getting their money's worth. . . So, I challenge you with that responsibility and I am making a commitment to you to do the best I can to be sure that happens. . . As far as directions this year, I haven't solidified, in my mind, everything that I would like to see happen. We have some budget problems to work out. . . The committees that we appoint, the directions that we take, the budget requirements, all these will affect the direction. . . this year will see a complete review of the by-laws, an update that's in line with the direction of this Board at the October, 1984 meeting. . . to see that the structure of the organization is refined, that the responsibilities of individuals, officers, and members of the Board are defined. Ron Greenwell, last years Chairman of the Administrative Matters Com-*



Michael R. McGee

*mittee has been working on this. That Committee has a report that addresses some of these items. . . which we intend to pursue and incorporate. . . other things important right now are education, workshops, membership drives, and, of course, money to fund these goals."*

Although the above remarks were addressed to the members of the Board (your Chapter Representatives), they are also appropriately addressed to you, the members. The line of communication runs both ways.

I find myself in a continuing process of establishing purpose and goals for CLSA in 1985 and thereafter. To reiterate, my primary areas of concern, at this time, are updating the by-laws, continuing education in the form of workshops and seminars that will benefit the Land Surveyor in California and improving the professional and financial stature of the Association, developing communications at all levels of CLSA (individual member, Chapter, State), as well as the practitioners throughout the state of California. Establishing directions and goals whose purpose will be carried on and fulfilled not in any particular individual's year as President but in the years to come by future Presidents, members of the Board of Directors, and the Association.

I solicit your assistance and advice in the present and future matters of the Association; your ideas, suggestions, criticisms can make a difference. Please feel free to write or call your Representatives and State Officers who are listed on the adjacent page.

Michael McGee, L.S. President

## "RIGHT OF ENTRY" LAW

CLSA has prepared Field notebook inserts of the Surveyors "Right of Entry" law, Section 846.5 of the State of California Civil Code. This heavy-duty, water resistant (varnished) sheet can be carried in the field book, handy for showing to property owners, as needed. Just hole-punch it to fit your particular notebooks.

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Non-Members . . . . . 3 for \$5.00  
(min. order)

For more information contact:  
CLSA, P.O. Box 9098, Santa Rosa,  
CA 95405-9990

## COVER PHOTO

### "THE OLD BEARING TREE,"

A Limited Edition Sculpture

Conceived by: Kenneth J. Omsberg, Jr., P.E., L.S., Eureka, CA

Artist: James C. McNealey, Eugene, Oregon

"The Old Bearing Tree" conveys the exhilaration of the modern retracing of an original surveyor's steps—feeling the old-timer's intangible presence and the urge to experience his hardships and endeavors. Finding the "Old Bearing Tree" which has evaded others through the years provides an indescribable sensation which is only appreciated by an modern surveyor's peers.

The first sculpture produced in this limited series is now the property of the Bureau of Land Management (BLM) in Washington, D.C. It will be part of the three-month BLM Bicentennial exhibit this summer at the American History Museum of the Smithsonian Institute. The sculpture was also on view during the March 10-15, 1985 ASP-ACSM Spring Convention in Washington, D.C.

(Information available through Kenneth J. Omsberg, Jr., Omsberg & Company, 711-3rd Street, Eureka, CA 95501; (707) 443-8651)

Photo by: James A. Nickols, Eureka, CA

# Articles

## 101 YEARS YOUNG

*W.E. Bedesen turned 101 years young on February 6, 1985. The following article by Burt Fogelburg, appearing in the "Merced Sun Star," reflects the communities fondness for Mr. Bedesen and their appreciation of his accomplishments as the Merced County Surveyor and involvement in community affairs.*

W.E. "Bill" Bedesen just keeps on rollin' along. The venerable former county surveyor observed his 101st birthday Wednesday and when all the visitors and well-wishers had gone, he was ready for more.

Sixty to 70 friends stopped by the 21st Street residence of Bedesen—the one he has lived in since 1908—to convey their best wishes and many delighted the centenarian by bringing some of his favorite foods as gifts.

While his health is a mite less vigorous than it was a year ago when he was feted on his 100th, his mind continues clear and he proved that by reciting some poetry and telling a couple stories.

His storytelling prowess has been unsurpassed in Merced for decades and he didn't disappoint on Wednesday. For many years a person could always tell at a public function exactly where Bedesen was located...amid a large group that was laughing.

A year ago this week Bedesen's golden anniversary was marked by several events, including one staged by his own Merced Rotary Club. At that time he was sworn in as a deputy sheriff, a special marshal, an honorary county fireman and the county's first and only honorary public works director, among other honors which included a greeting from President Reagan.

Born in a house on 19th Street, Bedesen drove a horse and wagon as a young boy, delivering meat for his father's butcher shop. In 1903, he was one of four students making up Merced's first high school graduating class and he entered the University of California, Berkeley to study engineering, only to have the earthquake of 1906 disrupt that plan. He returned home to briefly become a draftsman for the old Yosemite Valley Railroad and in 1907 was named deputy surveyor.

That was the start of his career as county surveyor which continued until 1954 and saw him run for the position unopposed nine times. As surveyor he helped shape the county, pushing for parks and recreation improvements, overseeing the building of bridges, highways, schools and county buildings.

Wednesday Bedesen was especially appreciative of the visit by Harry Schmidt, a former longtime county supervisor now living in Coarsegold. Other friends brought back some memories for Bedesen by spinning tales of long ago.

In the food department, Bedesen got a few of his favorites, such as licorice jelly beans and chocolate chip cookies and he even tackled a serving of pickled pigs' feet.

As a tribute to Bedesen a year ago, Merced High School English teacher Frank Russell wrote a poem which he read at an open house; Russell's wife, Jane Johnson-Russell, is particularly close to the family, having been figuratively adopted during her high school years by one of Bedesen's daughters, Nancy Thorington.

The poem, entitled "The Young Centenarian," is so descriptive of his life we want to share it here:

*Nobody stays young forever. At least not so I've been told. But I know a man full of gusto and love, Albeit he's a century old. When both he and Merced were just toddlers there was just one electric light on his street. He would roam every inch of the city, hunting birds' eggs or delivering meat. His grade school was a single-room structure, where he memorized poetry and prose. The sidewalks downtown were then board walks, and when the horse teams tramped through, the dust rose. Merced High School was the old County Library, and his was the first class to be. There was Bill with his four young companions, the graduates of 1903. He then left his home just a short while, for the univeristy to learn some new tricks. It was truly an "earthshaking" experience, up there in "the City" (in 1906).*

*So he came back and wed his sweetheart, Jessie, they started a family and home they could share.*

*He built golf courses, tennis courts and many fine schools, and churches and parks everywhere.*

*A lot of his old friends are gone now, but, of course, he has new ones galore.*

*His kids and his grandkids all spoil him, and he spoils them even more.*

*He loves the wildflowers and Yosemite, he loves the seashore and the coast.*

*But his family and friends and this county, are what "Granddaddy" Bill loves the most.*

*So whoever said "No one stays young forever," well, I guess he just hasn't been told,*

*About this young spirit full of gusto and love, albeit he's a hundred years old.*

Bedesen demonstrated his gusto Wednesday after all the guests had gone. Mrs. Thorington, who was pretty tired by this time, sat beside her father and he patted her hand, saying "What are we going to do tonight? Don't you have anything planned?"

*Reprinted by permission, Merced Sunstar.* □

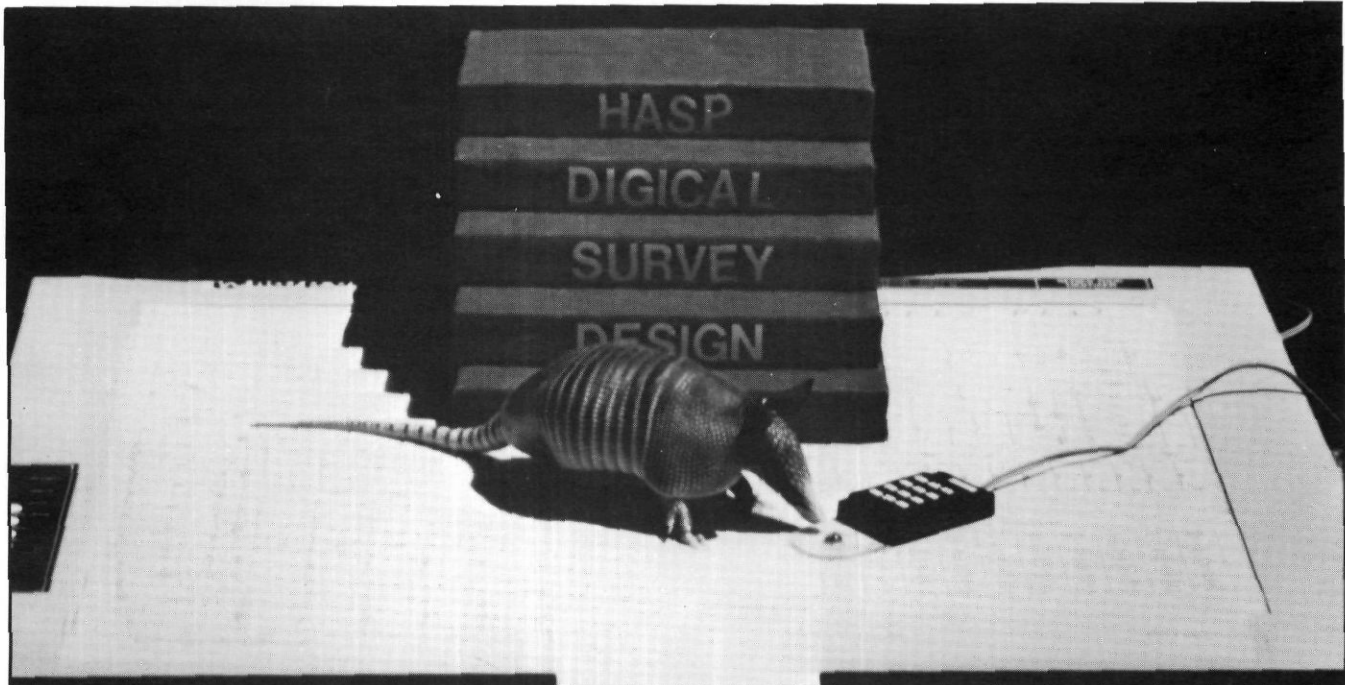
## DEVELOPMENT OF ELECTRONIC DISTANCE METERS AND PORTABLE POWER PACKS

It wasn't too long ago that surveyors used a transit, tape and rod to measure distances. Now they use an Electronic Distance Meter (EDM). The first one was called a "geodimeter." Some of the skeptical surveyors scoffed that they were nothing more than gadgets. The instrument was the result of an experiment to determine the velocity of light. After the experiment was successful and a reliable value for the velocity of light had been determined, the inventor decided to reverse the process and measure distance. Thus in 1947 Eric Berstand, a Swedish scientist, produced the geodimeter which measured distance by means of a highly collimated light beam projected to a distant reflector. When the reflected light returned to the device, the time the light takes to make the round trip is calculated electronically, and from this it is possible to

*(Continued on page 6)*



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figure the distance accurately between the two points. Another method, called a "Tellurometer," developed in 1955 by the African Council of Scientific Research, used radio waves instead of visible light. Since radio beams can be focussed more narrowly over greater distances than light beams, the Tellurometer had a greater range, but this advantage was offset by the effect of humidity, which caused less accurate measurements. Today, infra red light is being used. Today, E.D.M.'s have revolutionized the surveying industry to the point that no surveyor can be without one, because of the speed, ease and accuracy of this remarkable instrument. However, E.D.M.'s had to have a handy source of portable power. At first crude, cumbersome wet cells were used. They were heavy, messy and dangerous because of acid spill. Many battery systems have been tried. Today, Nickle Cadmium batteries, because of their weight, size and low cost per hour, have become the most popular source of power for Electronic Distance Meters and related equipment.

### What You Should Know About Your Ni-cad Portable Power Pack

This article deals with primarily cylindrical cells which have generally been standardized by the industry in size, shape and capacity. All cells are 1.25 volts and are connected together into many configurations. Usually, they are in a series to give the desired voltage and ampere hours. Ni-cad (Nickle Cadmium) battery packs are an ideal power source for a variety of applications. They can be discharged many times and recharged to full capacity at very little cost. They weigh less than many other types of batteries for the same power which makes them ideal wherever portable power is necessary. They can be stored charged or uncharged and operated in any position. With proper care, they will provide many hours of dependable power and will withstand more abuse than any other battery. They have good low temperature characteristics and are more competitive with other systems in terms of cost per hour of use.

### Battery vs Cell

The term battery is generally used to describe a single unit comprised of one or more cells. A battery can

be a single cell. But usually it is a battery in a series combination of individual cells assembled in a pack containing terminals and proper insulation. These batteries are referred to as multi-cell batteries or a battery pack.

### Primary vs Secondary

A primary battery is one which produces electrical energy which for the most part is irreversible; that is, it may be discharged fully only once. Then it must be discarded. A secondary battery is one which the chemical reaction which produces the electrical energy, for the most part, is reversible. That is, it may be fully discharged, then recharged, then used and charged again, time after time.

### Capacity

The capacity of a ni-cad cell is the total amount of electrical energy which can be obtained from a fully charged cell. The capacity of a cell is expressed in ampere-hours (H). The capacity value is dependent upon the discharge current, the temperature of the cell during discharge, the final cut-off voltage and the cell's general age.

Charge and discharge rates are expressed in multiples of the "C" rate. At the 0.25C rate the rated capacity will be delivered in four hours, at the 4C rate 1/4 hour, etc. the normal capacity of the ni-cad cell is that which will be obtained from a fully charged cell, discharged at 68°F for 5 hours to a 1.0 volt cut-off. This is called the C/5 rate. This capacity is much the same over a wide range of currents; however, lower discharge rates will give slightly more capacity and higher discharge rates will give slightly less capacity.

### Operation

In operation the voltage is about 1.2 volts per cell. This voltage remains pretty much the same until it approaches complete discharge, and in normal operation should not drop below 1.1 or 1.0 volts. However, if the battery is used to provide current above the rated value there is a severe drop in voltage when discharge is approached. This reduces the ampere-hour cycle and can discharge individual cells to zero voltage.

### Storage

The battery can be stored for years without charge, with no significant degradation in performance

and then, after just one or two charge and discharge cycles, will exhibit normal performance. Battery packs not in use, will lose about 1% of capacity per day. If stored more than 90 days, two or more cycles of full charge and discharge may be required to restore it to full capacity.

### Polarity Reversal

As mentioned before, as discharge carries below one volt, there is a rapid drop to zero voltage. In most packs the cells are connected in series. If one cell reaches zero before the others, there may be a reversal in polarity. The cell which reaches full discharge first will be driven into reverse by the others. In order to provide long life, this should be avoided. This does not happen often. When it does occur, the battery should be recharged at the ten hour rate to restore full capacity. Frequent recharging is a good way to prevent polarity reversal. If a pack has a bad cell, it should not be replaced. The whole pack should be replaced or re-celled with new matched cells.

### Memory Effect

The phenomena of battery memory frequently occurs when you use only partial amounts of a battery capacity followed by a full charge and again only discharge partially, etc. Then one day, you want the full capacity and typically find that only the portion of capacity that you have customarily used is available. The battery developed a "memory" of its typical capacity usage and delivered only that portion. This defect is usually remedied simply by giving several (3 or more) charge/deep discharge cycles to the battery.

Another source of Memory Effect can occur when users leave fast charge batteries on prolonged (days) trickle charge between uses. Again, several fast charge/deep discharge cycles usually result in like new performance.

A severely underused battery is very likely to become memorized, while a severely overused battery will exhibit sharply curtailed cycle life.

### Charge Acceptance—Its Efficiency

Charge acceptance efficiency is affected to a number of things, the age of the battery, possible physical defects, residual capacity before charging and, most directly, by charge rate and temperature during



charging. For example, a battery removed from a closed car on a sunny day and immediately charged may accept only 2/3 of the amount of charge it would have taken if allowed to cool to room temperature prior to charging. Also, a battery which is operating in near 32 degree temperature and is not allowed to warm up to room temperature before charging may, after several cycles, lose enough of its electrolyte through gassing to begin losing its capacity. A battery charged at a very low rate may never fully charge, while a battery charged at abnormally high rate may, through self-heating, decrease its own final charge acceptance efficiency. A battery will take its most efficient charge at 50°F which is somewhat below normal ambient temperature. If a battery is hot at the start of a charge, its efficiency will be significantly reduced and it will not fully charge. For example, if charged at 113°F, it will deliver only 70% of capacity, if charged at 140°F, it will deliver less than 50% of capacity. Do not charge batteries at temperatures at 95°F, bring batteries close to 70°F before charging.

#### Battery Life

The life of a ni-cad battery is measured in "cycles." Each charge and discharge is a cycle. Normal life is about 500 to 1000 cycles. Batteries are like human beings and should be exercised regularly. For optimum life they should be operated at least every three months.

#### DO'S AND DONT'S

**If You Don't Read Anything Else  
Do Read These**

- DO** Recharge regularly.
- DO** Warm up a cold battery to room temperature for at least on hour before charging.
- DO** Avoid overcharging, especially for long periods of time.
- DO** Check and clean dirty contacts.
- DO** Avoid discharging to below one volt per cell.
- DON'T** Use a case-damaged battery in a hazardous location.
- DON'T** Charge below 45°F.
- DON'T** Return or discard a battery for reduced capacity until it has been checked for memorization.
- DO** Try to de-memorize it by bringing its voltage down against a resistive load (such as an unquelled radio) to one volt per cell and then recharging it. Repeat the procedure a few times if necessary.

**DO** Avoid forced discharge or discharge approaching capacity for memory erase — only resistive load or unquelled radio should be used.

**DO** Try to prevent "memorization" by varying use modes and discharge times whenever possible.

**DO** Consider trying batteries with lower capacities if memory becomes a frequent problem.

*Compliments of Lewis Reguly,  
President of Reguly Battery Co. □*

#### The Office of the State Surveyor General (A Few Biographical Notes)

**JOHN A. BREWSTER**  
Fourth State Surveyor General  
Term of Office: 1856-1858

John Alexander Brewster was born in approximately 1826, according to family genealogical records, in the State of New York. He lived for a time in Stockton, and later in Sonoma County for several years. He was apparently one of two children (sister Hannah Brewster), himself the father of two children.

Brewster was elected State Surveyor General, September 5, 1855, and assumed his duties on January 7, 1856. He continued in that position until his successor, Horace A. Higley, took office on January 4, 1858. According to Brewster's obituary, he stood high in his profession of engineer; he had, in fact, surveyed the townsite of Santa Rosa before being elected State Surveyor General.

Upon leaving State duties in 1858, Brewster married Julia E. Kaene in Buffalo, New York and returned to California. They had a son, Charles U. Brewster, and a daughter, Lucie L. Brewster, whose grandchildren were born in Walnut Creek (Contra Costa County), and whose great grandchildren still live in that area.

Brewster spent his last years in Sonoma County. At his death, on January 7, 1889, in Santa Rosa, he was survived by his wife Julia, and by his son and daughter. Brewster was buried in the Masonic Cemetery in San Francisco. According to the Sonoma Democrat, he was 57 years old (that would put his birth at 1832 instead of 1826).

There is little information on Brewster's performance as State Surveyor General. The facts that no

criticism of his work has been found and that he was respected for his skill as an engineer stand as testimony to his competence. He was also the first State Surveyor General to specifically address the problems of surveying the swamp and overflowed lands donated to the State by the Federal Government.

— Herb Maricle

This series originally appeared in various editions of "California Landword," a monthly newsletter for the employees of the California State Lands Commission.

Herb Maricle is an associate land agent for the commission with a flair and interest for geneological research.

This is the fourth paper of the ongoing series.

#### SURVEYORS GENERAL FOR CALIFORNIA 1849 to 1929

NAME	ASSUMED OFFICE
Whiting, Charles J.	Dec. 22, 1849
Eddy, William M.	Jan. 5, 1852
Marlette, Seneca H.	Jan. 2, 1854
Brewster, John A.	Jan. 7, 1856
Higley, Horace A.	Jan. 4, 1858
Houghton, James F.	Jan. 6, 1862
Bost, John W.	Dec. 2, 1867
Gardner, Robert	Dec. 4, 1871
Minis, William	Dec. 6, 1875
Shanklin, James W.	Jan. 5, 1880
Willey, Henry I.	Jan. 8, 1883
Reichert, Theodore	Jan. 3, 1887
Wright, Martin J.	Jan. 7, 1895
Woods, Victory H.	Jan. 5, 1903
Kingsbury, W. S.	Jan. 7, 1907
Office Abolished—	Aug. 14, 1929 □

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# Legislative News

## 1985 LAND SURVEYORS ACT

Following is a copy of Senate Bill No. 1837. This bill was signed by the Governor and became effective as of January 1, 1985. For your convenience the new portions have been underlined and the deletions have been marked out in this article.

### Senate Bill No. 1837 CHAPTER 943

An act to amend Sections 8762, 8764, 8764.5, 8765, 8766, 8766.5, 8767, 8768, and 8772 of, and to add Section 8768.5 to, the Business and Professions Code, relating to land surveyors.

[Approved by Governor September 7, 1984, Filed with Secretary of State September 10, 1984]

LEGISLATIVE COUNSELS DIGEST  
SR 1837, Montoya. Land surveyors: records of survey.

Existing law known as the Land Surveyors' Act, requires licensed land surveyors and registered civil engineers to file with the county surveyor, within 90 days after the establishment of points or lines, the record of any survey relating to land boundaries or property lines which discloses certain specified changes or material discrepancies.

This bill would instead provide that after a survey has been made in conformity with the practice of land surveying, a record of survey shall, except as provided, be filed within 90 days after the setting of boundary monuments during the performance of a survey or within 90 days after the completion of the survey,

whichever occurs first, if the survey discloses specified information. The bill would define "material discrepancy." The bill would revise the information which the record of survey must show and would provide that the record of survey need not consist of a survey of the entire property. The bill would also provide that a record of survey is not required of any survey which is a retracement of lines shown on a subdivision map, official map, or a record of survey, where no material discrepancies with the records are found and sufficient monumentation is found to establish the precise location of property corners thereon, provided that a corner record is filed for any property corners which are set or reset or found to be of a different character than indicated on prior records.

Existing law requires the county surveyor to provide an extensive examination of the record of survey with respect to various aspects, including whether the record complies with the provisions of the Land Surveyors' Act, within 20 days of receipt or at a time mutually agreed upon by the land surveyor or civil engineer and the county surveyor. Existing law also requires all records of survey to be in a certain form and certain records of survey to have attached to them specified certificates of compliance. Existing law requires the county surveyor to endorse and file the record of survey with the county recorder after ex-

amination of the record is completed and the record of survey is found to be satisfactory.

This bill would provide that the county surveyor shall, instead, examine the record of survey for compliance with specified provisions of the Land Surveyors' Act and accuracy of mathematical data. The bill would also revise provisions relating to the procedure for filing the record of survey with the county recorder upon a finding of compliance or noncompliance with the above requirements by the county surveyor. The bill would revise the surveyor's and county surveyor's certificates, would revise a provision permitting the county surveyor to charge a reasonable fee for examining the record of survey, would specify that certain time limits within these provisions are to be counted as "working days," would provide for an action to compel the county surveyor to file the record of survey with the county recorder, and would provide that a tag marking a monument set by a licensed land surveyor or registered civil engineer to mark or reference point on a property or land line must include any information which will assist in the tracing or location of the survey records which relate to the tagged monument.

Existing law provides that every person is guilty of a misdemeanor who violates any provision of the Land Surveyors' Act.

This bill would impose a state-mandated local program or higher level of service upon local governments by revising the definition of a crime.

Article XIII B of the California Constitution and Sections 2231 and 2234 of the Revenue and Taxation Code require the state to reimburse local agencies and school districts for certain costs mandated by the state. Other provisions require the Department of Finance to review statutes disclaiming these costs and provide, in certain cases, for making claims to the State Board of Control for reimbursement.

However, this bill would provide that no appropriation is made and no reimbursement is required by this act for a specified reason.

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(Continued on page 12)



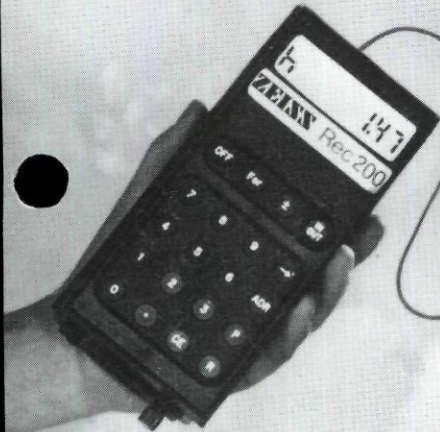
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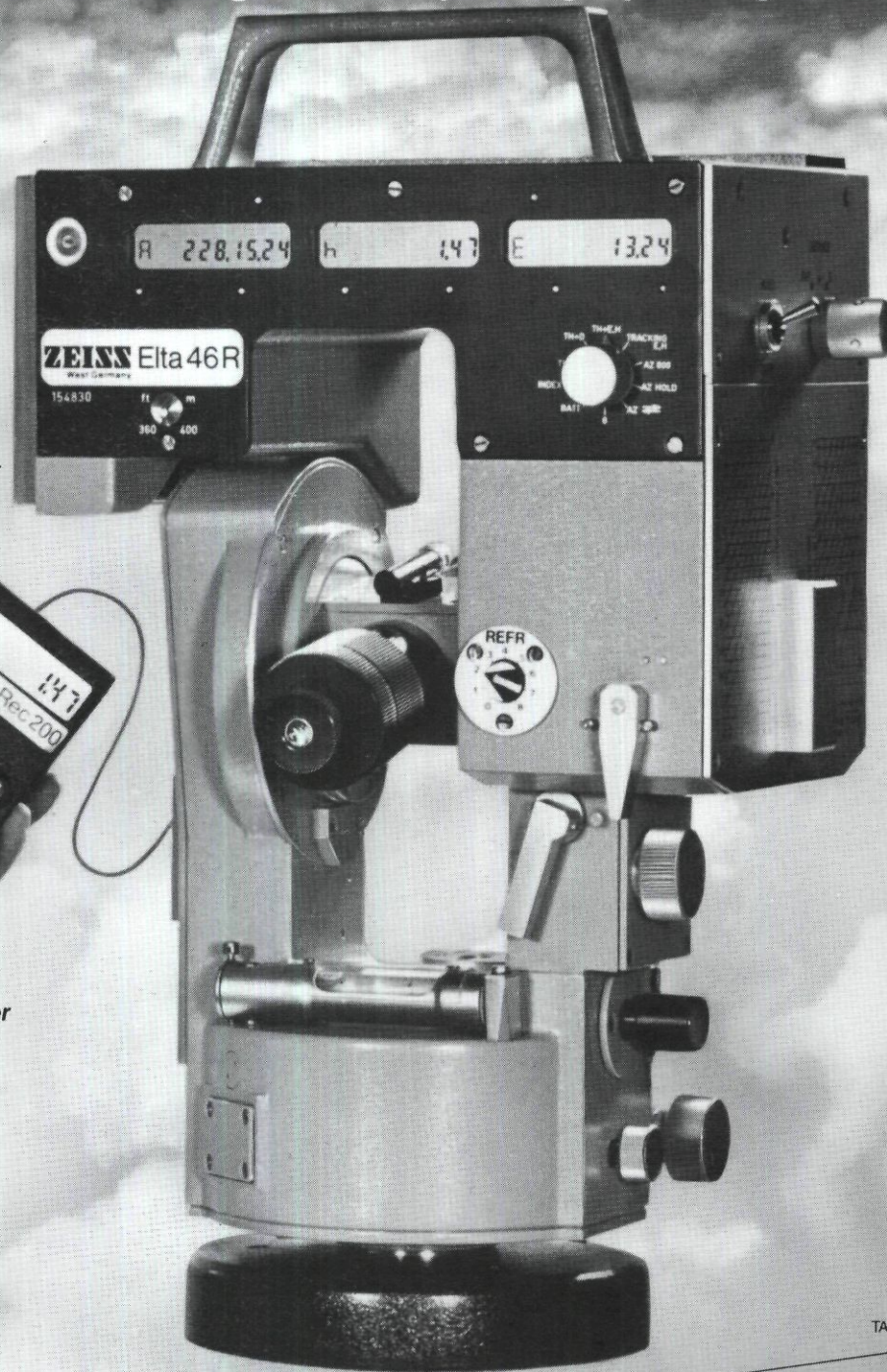
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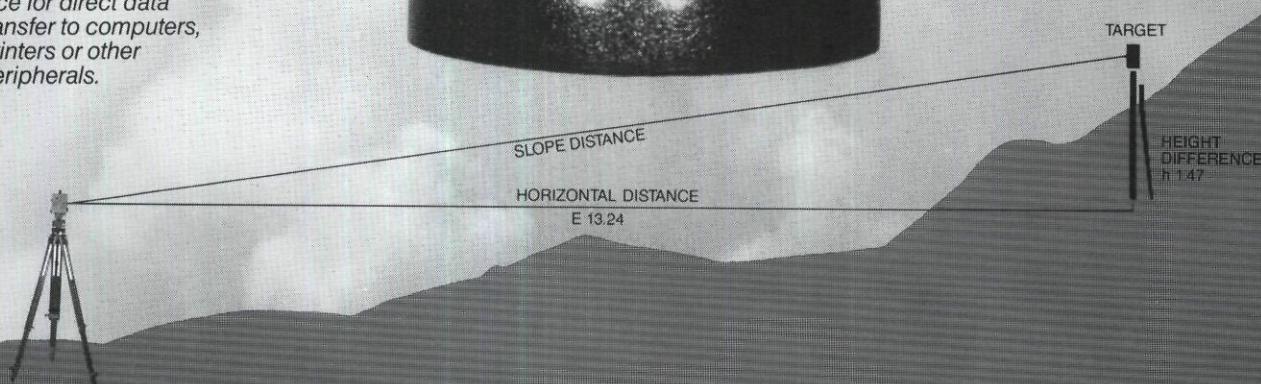
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(Continued from page 8)

**Changes Made to the Land Surveyors Act by SB 1837**

SEC. 1. Section 8762 of the Business and Professions Code is amended to read:

8762. After making a survey in conformity with the practice of land surveying, the surveyor or civil engineer may file with the county surveyor in the county in which the survey was made, a record of such survey.

After making a survey in conformity with the practice of land surveying, Within 90 days after the establishment of points or lines, the licensed land surveyor or registered civil engineer shall file with the county surveyor in the county in which the survey was made, a record of such the survey relating to land boundaries or property lines, which if the survey discloses any of the following:

(a) Material evidence of physical change, which in whole or in part does not appear on any subdivision map, official map, or record of survey previously recorded or filed in the office of the county recorder, county clerk, municipal or county

surveying department, in the records of or map or survey record maintained by the Bureau of Land Management of the United States.

(b) A material discrepancy with such record the information contained in any subdivision map, official map or record of survey previously recorded or filed in the office of the county recorder, or the county Surveying department, or any map or survey record maintained by the Bureau of Land Management of the United States. For purposes of this subdivision, "a material discrepancy" is limited to a material discrepancy in the position of points or lines, or in dimensions.

(c) Evidence that, by reasonable analysis, might result in materially alternate positions of lines or points, shown on any subdivision map, official map, or record of survey previously recorded or filed in the office of the county recorder, or the county surveying department, or any map or survey record maintained by the Bureau of Land Management of the United States.

(d) The establishment of one or more points or lines not shown on

any such map subdivision map, official map, or record of survey, the positions of which are not ascertainable from an inspection of such map the subdivision map, official map, or record of survey without trigonometric calculations.

(e) Points or lines set during the 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.

The record of survey required to be filed pursuant to this section shall be filed within 90 days after the setting of boundary monuments during the performance of a survey or within 90 days after completion of a survey, whichever occurs first. If the 90-day time limit contained in this section cannot be complied with for reasons beyond the control of the licensed land surveyor or registered civil engineer, the 90-day time period shall be extended until such time as the reasons for delay are eliminated. If the licensed land surveyor or registered civil engineer cannot comply with the 90 day time limit, he or she shall, prior to the expiration of the 90-day time limit, provide the county surveyor with a letter stating that he or she is unable to comply. The letter shall provide an estimate of the date for completion of the record of survey, the reasons for the delay, and a general statement as to the location of survey, including assessors parcel number or numbers. The licensed surveyor or registered civil engineer shall not initially be required to provide specific details of the survey. However, if other surveys at the same location are performed by others which may effect or be effected by the survey, the licensed land surveyor or registered civil engineer shall then provide information requested by the county surveyor without unreasonable delay.

Any record of survey filed with the county surveyor shall after being examined by him or her be filed with the county recorder.

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# News Briefs

## "SURVEY OPTION" STATUS, CAL POLY, POMONA January 25, 1985

For the most part, educational institutions in this country are some of the finest in the world. Your interest and support can help to keep them that way. The California Foundation for Land Surveying Education is attempting to help improve the offering of survey education for you, by trying to establish a "survey option" to the civil engineering curriculum at Cal Poly, Pomona. We have every reason to believe that the program will be approved, and in place, by the fall quarter of 1985.

However, in order to take advantage of the opportunity of an excellent education in land surveying, you must first perceive a need for such an education, and a desire to expend the effort to pursue it. One usually never gets something for nothing! If you think you need it, and want it, you'll have to get it, if we may paraphrase the actor, John Houseman, "the old-fashioned way, you'll have to earn it"! From one who has more years of experience in this business than I care to reveal, let me assure you that we all *need* the best education possible.

For those of you early in your career, don't let anyone convince you that a full formal education is anything other than absolutely imperative (that is if you have any notion of trying to advance in your career).

For those of you well established in your career, and station in life, it is *never, ever* too late to improve and advance.

For those of you interested in taking that difficult first step of deciding to investigate the possibility of your pursuit of higher education, the Foundation can possibly help. If necessary, the Foundation can assist you in making an appointment with a counselor of the University to evaluate your current unit-credit value, your starting position in the program, and make application for admission. Remember that nobody gets something for nothing. However, the University is committed to assisting you in every way they can. Admission to the university allows you to establish yourself as a full-time, or regular

part-time student. Part-time students are required to take a minimum of eight units per school year, thereby, allowing an individual to work and gain experience in his/her career, and obtain an education at the same time.

Obviously this endeavor can take a good deal of time and effort, and may or may not be for you. Again, you must perceive the need and have the desire to expend the effort to achieve success, but the end result is more than worth it. If you relate this endeavor to the long-term aspects of your career, say 10, 20 or 30 years from now, where will you be "X" years from now if you don't attempt to improve your lot today. Same place? Or getting your fair share of respect and advancement in your career?

Contact any of the directors of the Board of the Foundation for further assistance and information.

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

## ANNOUNCEMENT: THE 1985 W.F.P.L.S. FALL CONFERENCE WILL HAVE AN ADJOURNED MEETING ABOARD THE ROYAL PRINCESS ON A CRUISE TO ALASKA.

The Modern Royal Princess is the future of cruising, just having sailed on it's inaugural cruise November 29, 1984. It is unequaled in elegance and comfort. The ship will depart Vancouver on September 26, 1985, and will return to San Francisco on October 3, 1985. Several meetings are being planned to be held aboard the ship, along with a session, with the BLM in Juneau.

The price per person includes air fare from Portland to Vancouver, lodging, and gourmet meals aboard the Royal Princess. Prices range from \$1790 to \$2630 per person, (depending on what cabin category you choose). A \$50 per person deposit will hold your reservations until July 15, 1985.

*Make your plans NOW to attend the first adjourned meeting!*

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## WFPLS SPEAKERS BUREAU

Western Federation of Professional Land Surveyors is establishing a Speakers Bureau for State and Regional continuing education seminars. Persons interested in conducting seminars through the WFPLS Speakers Bureau, please contact: Charles A. Wright, 3657 East Side Highway, Stevensville, MT 59870

Letters of interest should include name, address, telephone, subject matter, and previous seminar teaching experience.

## WESTFED NEWS

Mark September 22-26— **West Fed, Portland** in your 1985 appointment book. The conference committee is a joint venture of the Professional Land Surveyors of Oregon (PLSO) and the Land Surveyors Association of Washington (LSAW) for the Western Federation of Professional Land Surveyors (West Fed).

Every two years since 1979, a joint conference of Land Surveyors in the west has provided a unique opportunity for members of our profession to meet each other at the **best seminar in the west**. Under the leadership of Conference Chairman Brian Weigart and Program Chairman Bob Cray, the convention committee reports that all is moving well to make this conference equal to the high standards set by the past conferences.

### Preliminary Program Topics:

- History of the Rectangular Land System
- No-fault Negotiating
- Boundaries and Possession
- Marketing of Services
- Personal Financial Planning
- Effective Communications, Key to Success

(Continued on page 17)





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(Continued from page 14)

- GPS Surveying
- The Surveyor and the Right-of-way Agent
- Calibration Baselines and How to Use Them
- Federal Contracting
- Photogrammetric Applications to Surveying
- Land Data Systems
- Effective Survey Research
- Survey Standards and Their Legal Implications
- The Surveyors Relationship with Other Related Professions
- Astronomic Azimuth Determination
- Positional Tolerance

The conference will be held at the Lloyd Center, Red Lion Inn in Portland, Oregon, which has excellent facilities, is convenient to shopping, downtown and the airport. An interesting program of social activities is planned with a Western Bar-B-Q being the highlight. There is even a preliminary plan for an adjourned session to Alaska via a cruise ship up the Inland Passage.

The Exhibitors are planning an equipment show that will be the best west of the Mississippi. It will run throughout the conference leaving you plenty of time to ask questions and compare.

The registration package is planned for mailing the end of June and two more news releases through your state's newsletter are planned between now and then as updates. However, if you want further information or don't receive a registration package, contact: WFPLS, P.O. Box 2722, Santa Rosa, CA 95405, (707) 578-6016.

Darrell Sorenson  
Publicity Chairman □

### MULTIPLE CITY TAXATION

The following California Court of Appeal decision has been brought to our attention. It should be of benefit to any business that has been requested to pay business taxes in cities other than the city in which their office is located.

[Civ. No. 48964. First Dist., Div. One. May 6, 1982.]

CITY OF SAN JOSE, Plaintiff and Respondent, v.  
RUTHROFF & ENGLEKIRK  
CONSULTING STRUCTURAL

ENGINEERS, INC., Defendant  
and Appellant.

### Summary

The trial court held that a minimum annual city business license tax was properly levied upon a firm of consulting engineers which had all of its offices outside the levying city and whose employees had spent a total of about 12 hours during the taxable year working in the city. The case was certified for transfer to the Court of Appeal to secure uniformity of decision and to settle an important question of law. (Superior Court of Santa Clara County, No. 431438, Robert P. Aguilar, Judge.)

The Court of Appeal reversed, holding that the tax was improperly levied. The court held that the amount of the tax in such situations was of little, if any, significance and that such taxes tend to encourage unconstitutional multiple burdens of taxation on those engaged in intercity business with the state. The court also held that, even taking into the consideration the practical cost problems often attending apportionment and collection of business license taxes where the proportion of the taxed activity actually taking place within the taxing jurisdiction is small, it is reasonable to treat the matter as de minimis, rather than to unfairly discriminate against intercity businesses by subjecting them to a measure of taxation which is not fairly apportioned to the quantum of business actually done in the taxing jurisdiction.

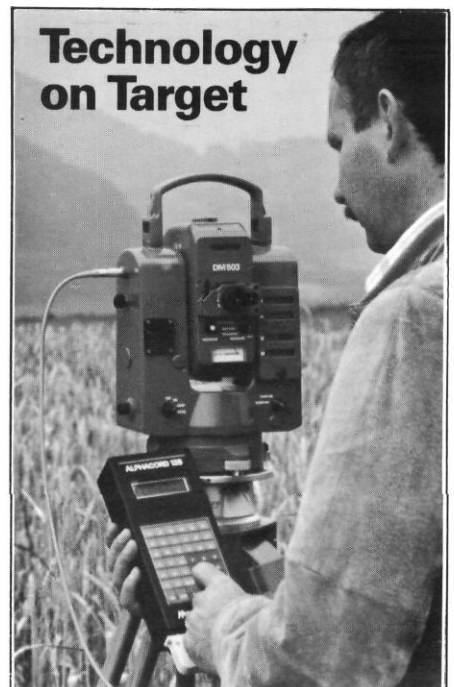
### Headnotes

Classified to California Digest of Official Reports, 3d Series

1) Business and Occupational Licenses § 3—Territorial Limitations—Minimum Annual Business License Tax.—A City minimum annual business license tax was improperly levied upon a firm of consulting engineers which had all of its offices outside the taxing city and whose employees spent a total of 12 hours working in the city during the taxable year. Such business license taxes tend to encourage unconstitutional multiple burdens of taxation on those engaged in intercity business within the state. The amount of the tax is of little significance, and, even taking into consideration the practical cost problems often

(Continued on page 18)

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IN QUALITY**



(Continued from page 17)

attending apportionment and collection of business license taxes where the proportion of the taxed activity actually taking place within the taxing jurisdiction is small, it is reasonable to treat the matter as de minimis rather than to unfairly discriminate against intercity businesses by subjecting them to a measure of taxation which is not fairly apportioned to the quantum of business actually done in the taxing jurisdiction.

[See Cal.Jur.3d, Business and Occupation Licenses, § 30; AmJur.2d, Licenses and Permits, § 120.] □

**THE 900-410-TIME NUMBER**

**Some Words of Caution**

The telephone number (900-410-TIME) for the U.S. Naval Observatory's (USNO) "Master Clock" has been circulated widely in recent months. A clarification and warning is necessary for surveyors who rely on the number for accurate time. Although the USNO's voice announces "Universal Time," the time broadcast is actually "Coordinated Universal Time" (UTC). So what's the difference? Up to seven

tenths of a second. Is that significant? It could be. Some celestial observation methods for accurate azimuth determination require very accurate time. The hour angle method on the sun is such a method. (Time is not as critical for the hour angle method on Polaris since Polaris moves so slowly.)

The kind of time which should be used for celestial observations when time is very critical is UT1 time, or Universal Time. This time differs by up to 0.7 second (plus or minus) from the uniform time, "Coordinated Universal Time" (UTC). The difference between these two is called DUT (UT1=UTC+DUT). This is a varying quantity which is currently changing at the rate of 0.1 second approximately every seven weeks. The DUT correction can have a significant effect on an azimuth determination. For example: An observation on the sun made at 30° North latitude on the first day of summer at two hours from local noon. If the DUT correction were at its maximum of 0.7 second of time, the resulting azimuth error would be 12 arc-seconds. For the same conditions on the first day of

winter, the resulting azimuth error would be 10 arc-seconds.

Radio station WWV, like USNO, broadcasts UTC time. WWV, unlike USNO, also broadcasts the DUT correction. DUT is obtained by counting the number of double ticks following each minute tone. Each double tick represents a tenth of a second correction and is positive for the first seven seconds (ticks). Beginning with the ninth second, each double tick is a negative correction. The WWV broadcast can be obtained by calling (303) 499-7111. The USNO and WWV telephone systems use dedicated landlines, and should not have delays of more than 30 milliseconds.

Surveyors are experts at measuring angles to arc-seconds and distances to millimeters. With practice, we should have no trouble obtaining, correcting, and using UT1 time to an accuracy of a few tenths of second. For additional information concerning time and celestial observations for azimuth see the "1985 Celestial Observation Handbook and Ephemeris," available from your local authorized Lietz dealer. □

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(Continued from page 12)

SEC. 2. Section 8764 of the Business and Professions Code is amended to read:

8764. The record of survey shall show the applicable provisions of the following consistent with the purpose of the survey:

(a) All monuments found, set, reset, replaced or removed, describing their kind, size and location, and giving other data relating thereto.

(b) Bearing or witness monuments, basis of bearings, bearing and length of lines, and scale of map, and north arrow.

(c) Name and legal designation of tract or grant in the property in which the survey is located and ties to adjoining tracts, and the date or time period of the survey.

(d) The relationship to those portions of adjacent tracts, streets or senior conveyances which have common lines with the survey.

(d)(e) Memorandum of oaths.

(e)(f) Certificates and statements required by Section 8764.5.

(f)(g) Any other data necessary for the intelligent interpretation of the various items and locations of the points, lines and areas shown, or

convenient for the identification of the survey or surveyor, as may be determined by the civil engineer or land surveyor filing the record of survey.

The record of survey shall also show, either graphically or by note, the reason or reasons, if any, why the mandatory filing provisions of subdivisions (a) to (e) inclusive, of Section 8762 apply.

The record of survey need not consist of a survey of an entire property.

SEC. 3. Section 8764.5 of the Business and Professions Code is amended to read:

8764.5 Certificates and statements shall appear on the map as follows:

**SURVEYOR'S CERTIFICATE STATEMENT**

This map correctly represents a survey made by me or under my direction in conformance with the requirements of the Land Surveyor's Act at the request of \_\_\_\_\_  
Name of Person Authorizing Survey

in \_\_\_\_\_, 19\_\_\_\_.

(Signed and sealed) \_\_\_\_\_ L.S. (or R.C.E.) No. \_\_\_\_\_

**COUNTY SURVEYOR'S CERTIFICATE STATEMENT**

This map has been examined for conformance with the requirements in accordance with Section 8766 of the Land Surveyor's Act this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

(Signed and sealed) \_\_\_\_\_

County Surveyor \_\_\_\_\_ L.S. (or R.C.E.) No. \_\_\_\_\_

**RECORDER'S CERTIFICATE**

Filed this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, at \_\_\_\_\_ m. in Book \_\_\_\_\_ of \_\_\_\_\_ at page \_\_\_\_\_, at the request of \_\_\_\_\_ (Signed) \_\_\_\_\_ County Recorder

No other certificates or statements shall ~~may~~ appear on the face of the map except those required or authorized by this article. ~~of a technical nature affecting the locations of the survey lines or monuments represented on the map.~~

SEC. 4. Section 8765 of the Business and Professions Code is amended to read:

8765. A record of survey is not required of any survey:

(a) When it has been made by a public officer in his or her official capacity and a reproducible copy thereof, showing all data required by Section 8764, except the recorder's certificate, has been filed with the county surveyor of the county in which the land is located. Any map so filed shall be indexed and kept available for public inspection.

(b) Made by the United States Bureau of Land Management.

(Continued on page 39)



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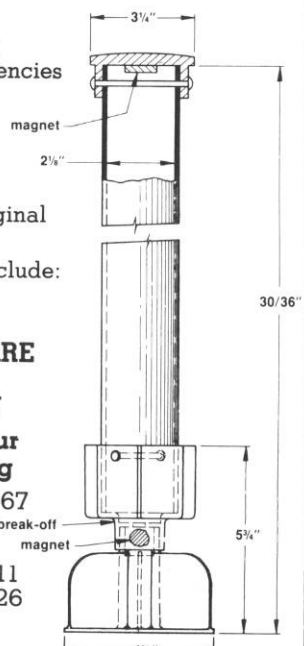



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# Letter to the Editor

This letter is in response to Keith Houseman's article regarding usage of the HP41CV/41CX calculators as cost-efficient "data collectors."

While the HP41 series have proven to be quite valuable as computing systems for surveyors, The Lietz Company does not share Mr. Houseman's viewpoint as to their adaptability as "data collectors."

The Lietz Company has invested a great deal of time, manpower, and hard U.S. currency in trying to utilize the 41CV as a "data collector." We developed an interface (the IF-1, Lietz Number 5275-01) that allows our electronic distance meters and tacheometers (Total Stations) to "dump" data directly into the memory stack of the 41CV. But, due to the *limited* amount of storage available in the 41CV, less than seventy (70) points (i.e. point number, slope distance-zenith angle-horizontal angle and/or Northing coordinates—Easting coordinates—elevation) could be stored at any one time in the calculator's memory. While this *may* be enough storage for a small traverse, it would hardly be enough

for any good size survey project. (We have interviewed surveyors that have collected up to one-thousand (1,000) points in a single day!)

Another major obstacle we encountered with the 41CV data collector was communication compatibility. Right or wrong, the standard serial communication parameter throughout the world is RS232C. The HP41CV is HP1C compatible, which means, to communicate with other electronic devices such as Total Stations, Printers, Computers, etc., we were faced with manufacturing IL to RS232C interfaces. (Note: HP recently released their own IL to RS232C interface, but this was not available at the time of our testing.)

So, in 1981, faced with these facts, we started the development of the SDR1 Electronic Field Book. Our primary objective was to offer a device that would electronically collect and store *vast* amounts of survey data taken from our instruments. A secondary goal was to combine the data collector with a state-of-the-art field computer that

would calculate field coordinates (N,E, & ELV), reduce slope distance to the horizontal/vertical, inverse between coordinate pairs, compute resection problems as well as perform a multitude of other survey calculations faced by the land surveyor each day.

Mr. Houseman does raise some very good points in his article, but Lietz feels that his conclusion regarding the HP41CV data collector limits the surveyor in reaching the optimum in field and office productivity in the processing of survey information. Therefore we have introduced the SDR2, which is designed specifically for the North American surveyor.

Robert H. Martin  
Vice President, Products  
The Lietz Company

## PHOTOS WANTED

The California Surveyor is requesting cover photos from its readership. Photos should be 8x10" glossy-for-repro. Information regarding the subject of the photo plus the photographer/contributor should be sent to the Editor along with the photo and a letter giving The California Surveyor permission to publish the material.



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# New Products

## NEW FROM LIETZ

—Lietz announces the new SDR2 Electronic Field Book, specially designed for the U.S. surveying market and backed by the Lietz System S3 Support group.

It increases productivity of any operation—from simple construction site calculations to the most complex traverse. The SDR2 is designed to complement an Electronic Total Station (i.e. Lietz SET10, SDM3ER, SDM3E) or adapt to any configuration used by the surveyor.

There are no command codes or program steps to memorize. An internal time clock produces an automatic date and time stamp which is valuable in legitimizing documents for courts of law. Field data is entered with the touch of the "Auto" button, manually, or by a combination of both.

Ten resident programs include resection with a least squares adjustment for determining the position of the instrument station, stakeout using coordinates loaded in from a computer and a traverse routine

which will calculate the angle and distance missclose in the field.

Data from the SDR2 may be printed or plotted. Output is printed in a readable format—no deciphering necessary. The SDR2 is compatible with any computer or printer that supports RS232 transmission. □

—The Lietz Company announces a "Y" Interface, designed to combine the data outputs of our RED line of electronic distance meters with our DT20E Electronic Theodolite. Owning a Lietz RED line EDM or DT20E is one step toward owning a total station. Add the SDR2 Electronic Field Book and you have a totally integrated surveying system.

A "Y" Interface permits the SDR2 Electronic Field Book to automatically collect data simultaneously from a RED line EDM and DT20E Electronic Theodolite. With it a surveyor can build his own modular surveying system. □

—The Lietz Company has published the 1985 *Celestial Observation Handbook and Ephemeris*. The

pocket-size handbook contains sections on the basics of surveying astronomy; recommended field procedures for observations on the Sun and Polaris; accuracies of observations on the Sun and Polaris; example fieldnotes; example calculations; and the use of selected other stars for azimuth determinations. It also includes listings of basic and advanced HP41CV/CX programs for calculating an azimuth from observations on the Sun, Polaris, and selected other stars. The ephemeris tables provided are simple and easy to use.

The 1985 *Celestial Observation Handbook and Ephemeris* is co-authored by Drs. Richard L. Elgin and David R. Knowles of Elgin & Knowles Surveying Consultants, Inc., Fayetteville, Arkansas, and Dr. Joseph H. Senne, Professor of Civil Engineering, University of Missouri-Rolla, Rolla, Missouri.

Single copies may be obtained for \$5 each from any Lietz Authorized Distributor or Landmark Enterprises. For more information, con-

(Continued on page 23)

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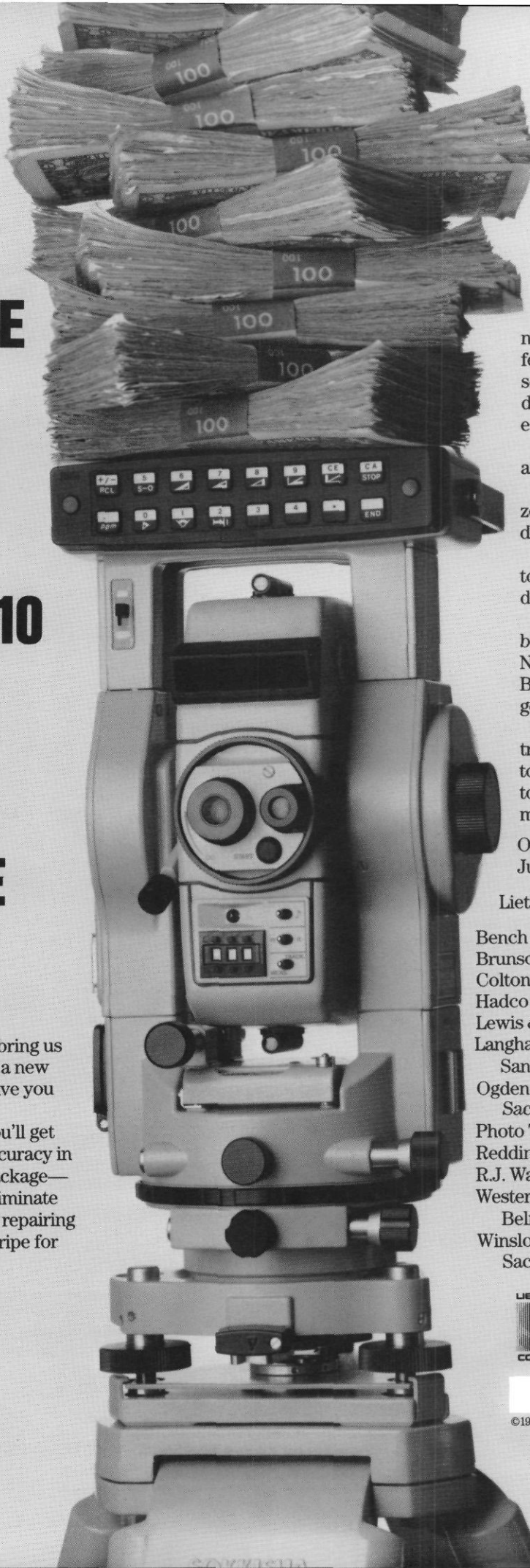


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## New Products (continued)

tact Robert H. Martin, The Lietz Company, Box 2834, Overland Park, KS 66201. □

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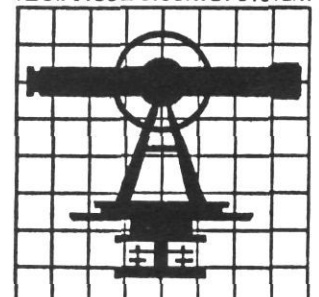
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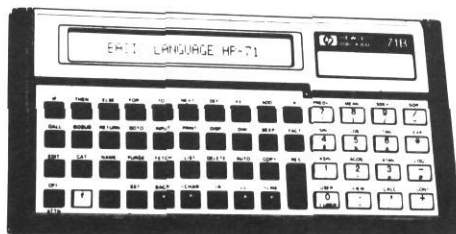
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# Of Interest

## ACSM OFFICERS, DIRECTORS FOR 1985-86 ELECTED

The American Congress on Surveying and Mapping today announced the results of its members election of officers and directors for 1985-86.

RADM John D. Bossler, of Olney, MD, was unopposed for succession to the office of President. He is Director of the Office of Charting and Geodetic Service, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce and previously served as ACSM President-Elect.

Donald E. Bender, of Sherman Oaks, CA, was elected to the office of President-Elect. He is Survey Supervisor for the City of Los Angeles, Department of Water and Power and previously served as ACSM Vice President.

Elected to the Office of Vice President was Alberta Auringer Wood. Mrs. Wood is a native of Detroit, MI and currently serves as Map Librarian, Memorial University of Newfoundland, St. John's, Newfoundland, Canada.

Three practicing surveyors were elected to three-year terms as members of the ACSM Board of Direction. They are P. Porcher Gregg, of Virginia Beach, VA, former President and currently consultant to Baldwin & Gregg Ltd, Norfolk, VA; William G. Wallace, Jr., of West Palm Beach, FL, Chairman of the Board of Gee and Jenson, Architects, Engineers and Planners in West Palm Beach, and James P. Weidener, Partner in the firm of Hirth-Weidener and Associates, Wayne, NJ. Mr. Wallace was re-elected to a second term on the Board.

ACSM's three Member Organizations, serving professional disciplines, also elected officers and directors. The National Society of Professional Surveyors (NSPS) selected John L. Thalacker of Friday Harbor, WA, as President, John R. Stock of Colorado Springs, CO, as Vice President, and David L. Ingram of Mt. Crawford, VA, as Secretary-Treasurer. Elected as directors were Paul M. Durgin, Rochester, NH; Ron A. Carrouth, Richmond,

VA; John E. Dailey, Cleveland, OH; Arthur W. Hipp, Arvada, CO; and Paul W. Lamoreaux, South San Francisco, CA.

The American Cartographic Association (ACA) elected Patricia Caldwell Lindgren of Mill Valley, CA, as President and Steven J. Vogel of Falls Church, VA, as Vice President. Elected as ACA Directors were Marshall B. Faintich of Chesterfield, MO, and Susan L. Nelson of Takoma Park, MD.

The American Association for Geodetic Surveying (AAGS) elected Robert F. Packard of La Habra, CA as Director.

The American Congress on Surveying and Mapping is a national professional society with more than 10,000 individual surveyors and mapping scientists as members. Its members are in private practice, government service and academic instruction. All ACSM and Member Organization officers and directors took office at the society's national convention March 11-15 at the Washington Hilton. □

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**SURVEY RESULTS**

The following surveys in California have been accepted in the first quarter of FY 85 (October 1-December 31, 1984). 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. 12 N., R. 6 E.	Humboldt	12-12-84
T. 15 S., R. 4E.	San Bernardino	12-13-84
T. 2 S., R. 5 E.	Humboldt	12-18-84
T. 1 S., R. 5 E.	Humboldt	12-18-84

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

Township & Range	Meridian	Date
T. 12 N., R. 6 E.	Humboldt	12-12-84
T. 15 S., R. 4 E.	San Bernardino	12-13-84
T. 2 S., R. 5 E.	Humboldt	12-18-84
T. 1 S., R. 5 E.	Humboldt	12-18-84

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

Township & Range	Meridian	Date
T. 15 S., R. 12 E.	San Bernardino	10-2-84
T. 3 N., R. 13 E.	Mount Diablo	10-9-84

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

**NSPS  
SURVEY FILM**

The C.L.S.A. Board of Directors has been approached by the National Society of Professional Surveyors in order to request financial assistance for the production of a 30 minute film on surveying.

Unfortunately, our 1985 budget did not anticipate this item and at this time we are unable to pledge a specific amount. From the information I have gathered, this is an admirable project and would be beneficial to all surveyors in California, as well as, the rest of the country. Following is information explaining the project in greater detail.

It is my hope that our individual members and chapters will be able to contribute a sufficient amount at this time to assist NSPS in the start up costs and demonstrate California's interest in promoting our profession.

If you are interested in contributing to this fund, please direct your responses or questions to me, Susan Anne Jensen, C.L.S.A. Treasurer.

*(Continued on page 28)*

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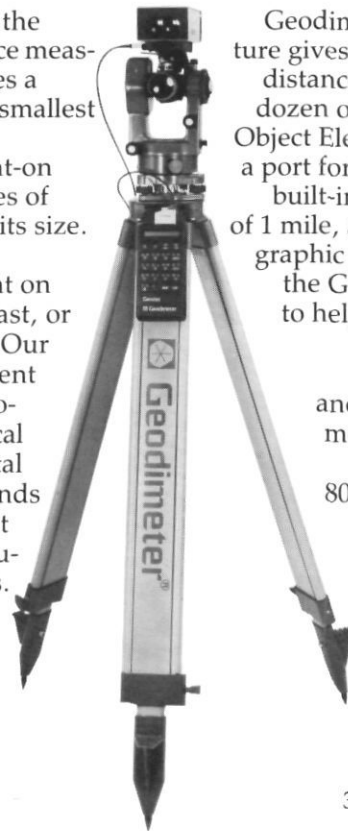


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## Of Interest (continued)

(Continued from page 25)

The NSPS Image Enhancement Media Development Committee under the chairmanship of Robert Todd presented a synopsis of the script which has been written about Surveying and related disciplines. The script, written by Marc Bockmon, (who also wrote the script for the "Texas film") will be used to make video cassette tapes, films and slides. The major task ahead of the committee is to find funding for the production of the script into its final form on film. A plea has been made to the NSPS Board of Governors to go to their State Affiliate meetings asking for financial support. The first donation, \$2000 from the state of New Jersey, has been received.

In brief, the story is set in the Smithsonian area displaying surveying instruments and the history of surveying. As night approaches, a magical transformation takes place and the figures in the diorama come to life. Through the eyes of Andrew Ellicott and Benjamin Ban-

neker we look back at the history of surveying, progress through modern times and even speculate on what the future might bring. Ellicott and Banneker marvel at the changes in surveying. They remember the days when they carried massive pieces of fragile equipment through the brush and swamps of what would become the city of Washington, DC. They look at the professionals of today who spend their time managing crews and well trained staffs; participating in proposal writing, project planning and other aspects of modern business. At the film's end we see the dawning of a new day.

A new day is also upon the profession of surveying. The most frequently mentioned goal of the officers and members of our national association is that of enhancing the image of the Professional. With projects like this and the development of a plan for a public relations program, those requests are being met. Please support these programs when the opportunity arises. □

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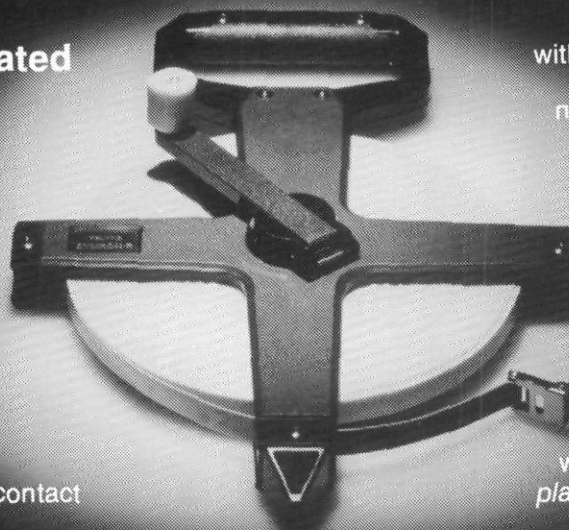
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**FIELD NOTES—ACSM**

**December, 1984—Draft Federal Procurement Study Called Contrary to Congressional Intent**

A draft report of the Office of Management and Budget (Office of Federal Procurement Policy) on an alternative method of procurement for professional services provides "neither alternatives nor consistency with the intent of Congress," according to comments submitted to the agency by ACSM-ASP. The recently enacted Competition in Contracting Act mandated the procurement study to develop an alternative to bidding in which "technical factors, qualifications, quality and other factors" are used to select contractors. In its draft report OFPP suggests a "continuum" approach ranging from selection based on price only (no technical evaluation) for "routine, standard, simple" services to technical prequalification and bidding between the top two firms for "exceedingly complex" services. The continuum would be tested on all professional services, including A/E services, if

Congressional committees grant a waiver of the Brooks Act. The plan and waiver of existing law, must be granted by Congress before OFPP can order its testing by Federal agencies.

**Justice Department Case Against Mississippi Bidding Ban Dismissed.**

A Federal District Court has dismissed the U.S. Department of Justice's suit which claimed the Mississippi State Board of Registration for Professional Engineers and Land Surveyors violated Federal anti-trust laws by prohibiting engineers and surveyors from bidding. The Justice Department asked that the case be withdrawn after the Supreme Court ruled, in an Arizona case involving a local bar association, that a state agency can promulgate standards of practice. The Mississippi attorney general's office argued that state agencies are exempt from the Sherman Anti-Trust Act provisions which are designed to prevent barriers to competition. State officials also argued the "Brooks Bill" method of negotiating contracts is indeed competitive.

**ACSM's Bill Wallace Elected COFPAES Vice-Chairman**

William G. Wallace, Jr., ACSM's delegate to COFPAES since the society was admitted in 1981, was elected Vice-Chairman of the Federal A/E Procurement group at its November meeting. Wallace is past Chairman of ACSM's Governmental Affairs Committee and currently serves on the ACSM Board of Direction and as Chairman of the ACSM/NSPS PAC. He is Chairman of the Board of Gee and Jenson, Architects, Engineers, Surveyor and Planners, in West Palm Beach, FL. In addition to ACSM, other societies in COFPAES are the American Consulting Engineers Council, American Institute of Architects, American Society of Civil Engineers, American Road and Transportation Builders Association, and National Society of Professional Engineers.

**January, 1985—OFPP Submits Procurement Study to Congress**

The Office of Federal Procurement Policy (OFPP) has sent to Congress a report on procurement of professional, technical and mana-

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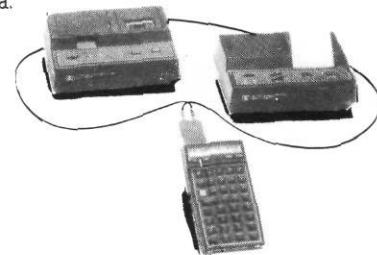
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Also, available in February, is a new Earthwork-Road Design package that reduces and stores cross-section, road template, shrink factor, stripping depth, and grade line data on tape or disc. After all design criteria are stored, cut-fill areas and volumes, including a digital mass are computed. Haul and surfacing quantities as well as slope stake data may be computed. This is as powerful as a package six times the cost!!!



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gerial services, as required by the Competition in Contracting Act (P.L. 98-369). The report recommends a "continuum" of procurement methods, ranging from price as the sole factor in bidding some contracts to prequalification and price competition among the top two ranking firms. The report also seeks to apply the continuum to architect/engineer services through a waiver of the Brooks Act. The authority to test the continuum and any waiver of the A/E selection law must be granted by Congress before OFPP can proceed further. ACSM-ASP will advise key members of Congress of its strong disagreement with the report's findings.

**NOAA Seeks Lead Role in Multipurpose Cadastre**

The National Geodetic Survey, an office within the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), will seek the lead role in the development of a multipurpose cadastre. Rear Admiral John D. Bossler (ACSM President-Elect), Chairman of the Interagency Federal Geodetic Control Commit-

tee (FGCC) and Director of NOAA's Office of Charting and Geodetic Services suggested at a January 15, FGCC meeting four areas in which the committee could lead the cadastre's development—establish policies, participate in demonstration projects, develop standards and review relevant legislation. Bossler also agreed to coordinate his activities with two other federal committees involved in cadastre components, the Integency Cadastrol Coordinating Council (ICCC) and the Interagency Coordinating Committee on Digital Cartography, and seek Office of Management and Budget (OMB) appointment of a lead agency to coordinate all multipurpose cadastre activities.

**ACSM Seeks Revision of FEMA Elevation Certification**

ACSM has submitted to the Federal Emergency Management Agency (FEMA) suggested revisions to its Elevation Certification. The society's comments seek to provide consistency between the Federal form and state registration laws detailing which professionals (architects, engineers and surveyors) can

provide certain services. ACSM also suggested the certification's wording be changed to avoid professional liability difficulties, that definition of the terms "lowest floor" and "average grade," and correct reference to NGVD'29 be provided.

**ACSM-ASP Seeks Clarification of Camera Calibration Specifications**

ACSM-ASP has asked the U.S. Geological Survey to clarify its specifications on contracts requiring aerial photography to require that firms meet its camera calibration standards. A recent USGS Water Resources Division contract in Main was awarded to a firm which had a calibration report, but it was not up to the USGS standard. The contract was successfully protested by a disappointed bidder. In order to prevent future instances of this nature, ACSM-ASP has asked that clarifying instructions be sent to all USGS contracting officers.

**February, 1985—Rep. Brooks Calls OFPP Professional Services Report "Abysmal"**

Congressman Jack Brooks (D-TX), Chairman of the House

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*Tidal Datum Planes*—This publication describes the criteria and characteristics of different types of tide, how tide observations are conducted and how the different tidal datums are derived. \$3.00 ea.

*Shore and Sea Boundaries* (1962) Reprint 1975—Aaron L. Shalowitz, U.S. Department of Commerce Publication No. 10-1

*Vol. II—The Interpretation and Use of U.S. Coast and Geodetic Survey Data* . . . . . \$11.95 ea.

*Restoration of Lost or Obliterated Corners & Subdivision of Sections*—a guide for surveyors—U.S. Department of Interior, Bureau of Land Management—1974 Edition . . . . . \$.75 ea

*Metric Practice Guide for Surveying and Mapping*—American Congress on Surveying and Mapping. This Metric Practice Guide has been prepared to aid those engaged in surveying and mapping in the use of the International System of Units (SI) in accordance with recommendations contained in the Metric Conversion Act of 1975, Public Law 94-168. \$1.50 ea.

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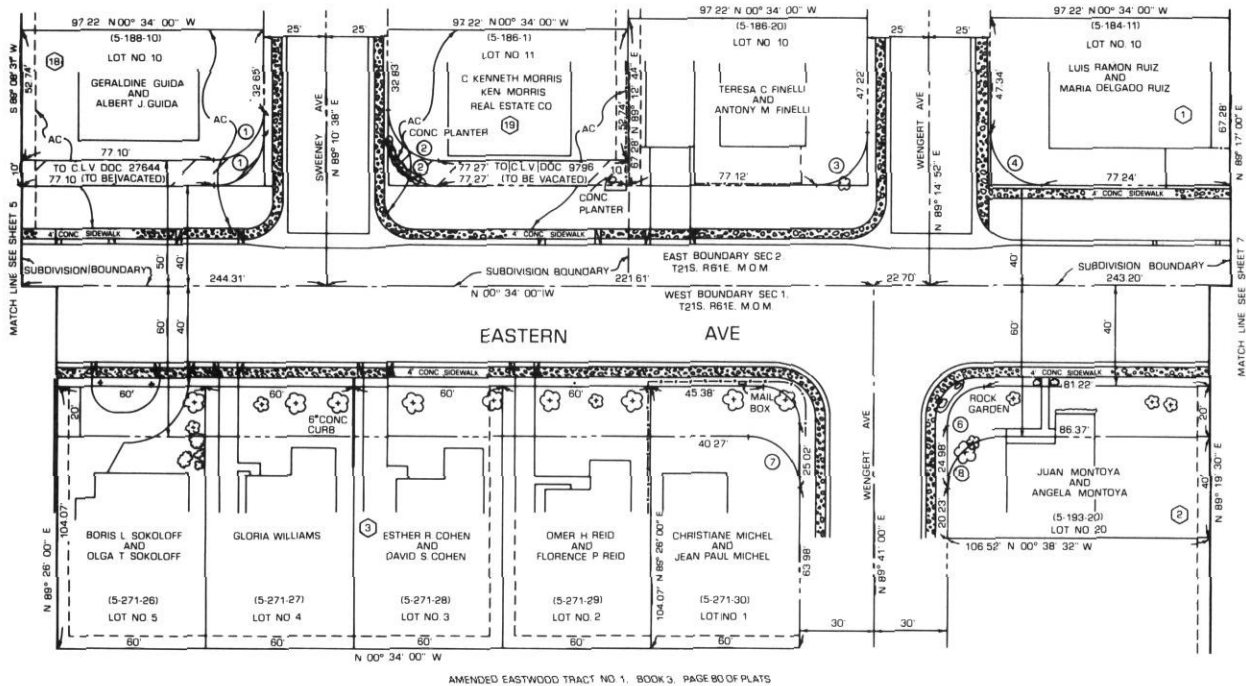
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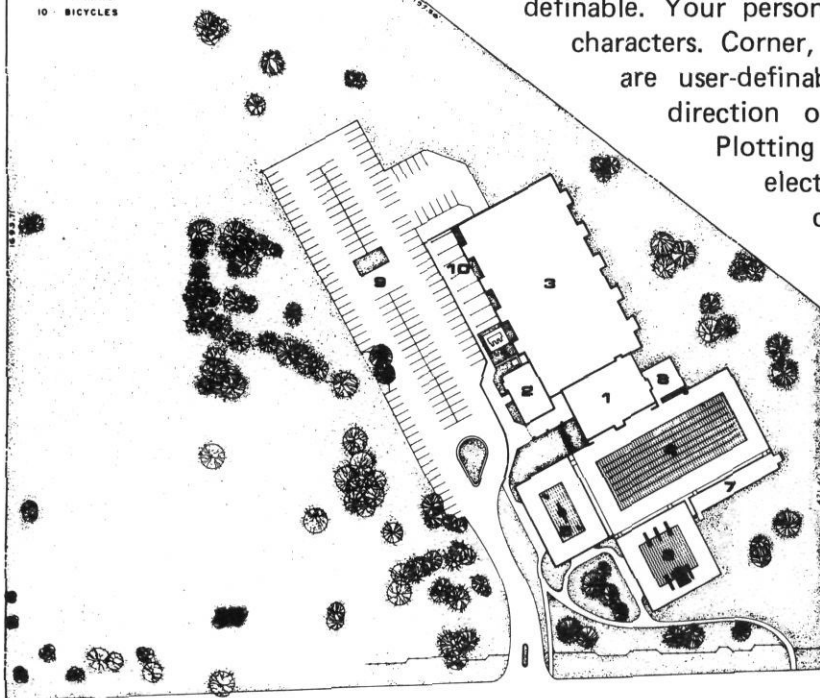
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- 7 ADULT SUN DECK
- 8 CONCESSION DECK
- 9 PARKING
- 10 BICYCLES





(Continued from page 31)

ed under the Brooks Bill by the Corps' St. Louis District and initially be limited to sites in the eastern states. In the meantime, Congress is working on legislation to reauthorize and expand the Superfund program. ACSM-ASP is working with a broad coalition on an amendment to provide Brooks Bill procedures for Federal, State and prime and subcontracts A/E/S/M contracts, open competition to permit selection of the most qualified firm regardless of size or ownership and limits on contractor liability.

**Study Finds Brooks Procedure Costs State Gov't Less Time, Money**

A comparison of A/E selection procedures in the States of Maryland and Florida conducted by The American Institute of Architects has found that Brooks Bill procedures cost government less than bidding. In Maryland, which requires competitive bidding, the A/E portion of total construction costs for its Department of General Services (DGS) (includes design for both general public buildings and

state universities) averages 13 percent. In Florida, which uses the Brooks Bill negotiated contract, total A/E costs average 6.7 percent for the state's Department of General Services and 7.3 percent for the State University System. In the ten years since Maryland went to bidding, DGS personnel increased by 11.6 percent and its budget by 17.9 percent, while Florida awarded more contracts with less staff during the same time period. The A/E selection process averages 5.5 months in the two Florida agencies, while bidding requires 11 months in Maryland.

**Corps of Engineers Water Projects Bill Reintroduced in House**

Congressman Jim Howard (D-NJ), Chairman of the House Committee on Public Works and Transportation has introduced H.R. 6, a bill to authorize new Corps of Engineers water resource projects. Included in the bill are provisions continuing permanent Brooks Bill procedures for Corps civil works surveying and mapping contracts, a minimum of 30 percent contracting out to the private sector for Corps

design work (including surveying and mapping), and a requirement that reports be submitted to Congress on a quarterly basis outlining contracts awarded to small, large and minority firms by each Corps district for each industry in which contracting occurs. The latter provision is intended to ensure that a disproportionate amount of small, large or minority contracting does not occur in any particular Corps district or industry category. □

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publication *BACKSIGHTS*. This informative periodical covers the Society's activities, recent equipment and map acquisitions, and articles of historical interest about the profession. You are offered the opportunity to participate in Society activities and most important you will be helping to preserve the heritage of surveying and mapping for your children and grandchildren.

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# Board of Directors Meeting

## 1/26/85 BOARD OF DIRECTOR'S MEETING MINUTES

(condensed version)

by Louis E. Rutledge, LS Secretary

The CLSA Board of Director's meeting was held at the Hyatt Burlingame Hotel, 1333 Old Bayshore Hwy, Burlingame. The meeting was called to order by President James Dorsey.

APPROVED: Minutes of the October 20, 1984 meeting.

President Dorsey announced the passing away of Gurdon Wattles.

RESOLUTION 85-1 regarding Gurdon Wattles was passed. President Dorsey gave special recognition to certain individuals for their work in support of CLSA activities in 1984. RESOLUTION 85-2 passed: Establishes guidelines for an Audit Committee.

APPROVED: 1984 Treasurer's Report.

1984 Executive Director's Report passed as follows: Items 1-4 referred to the Bylaws Committee; Item 5 referred to Presidents Committee

for financial analysis and study; support Items 6 & 7.

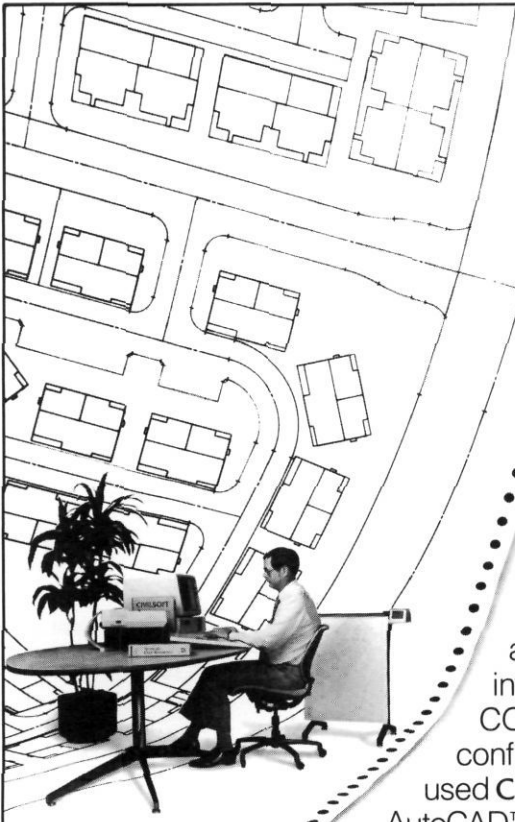
Jim Dorsey passed the gavel to Michael McGee, the 1985 President who presented Jim Dorsey with a certificate of appreciation. RESOLUTION 85-3 passed: awarding life membership in CLSA to Jim Dorsey passed.

DIRECTION from Michael McGee: All Board members shall promote CLSA and be responsive to the needs of the membership.

Review of Bylaws Section 4.04 re Secretary: Motion passed to divide the Secretary's duties by delegating certain duties to the central office in Santa Rosa.

Review of Bylaws Section 4.04 re Treasurer: Motion passed to define the duties of the Treasurer as outlined in the agenda and modified as follows: Treasurer and Central Office to prepare quarterly budget; Central Office to collect and deposit all monies and to prepare and file government tax forms for 1984.

RESOLUTION 85-4 passed to re-



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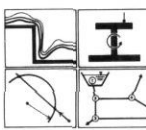
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Kern Instruments	17
Land Innovation	19
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tain Dorothy Calegari as Executive Director.

Postponed until the next meeting as a resolution that Chapter Representative expenses to attend Board meeting be paid by the Association.

The motion passed to approve Standing Committee Appointments.

A motion passed to consider the Administrative Matters (AM) Committee recommendations regarding the duties of officers and organization chart of the Board during the examination of the Bylaws structure. A professional parliamentarian will be engaged for this examination.

Motion passed to adopt the 1, 5 and 10 year goals recommended by the A.M. Comm. as outlined in CLSA news. The responsibility for accomplishing these goals will be delegated to various committees.

The 1985 Conference theme will be "The 200th Anniversary of the Retangular Survey System" on May 22 at the Town and Country Inn, San Diego. The 1986 Conference will be at the Red Lion Inn, Sacramento. Motion passed that the week of May 22 be recognized as Land Surveyor's Week in California; The Legislative Comm. will seek adoption in the appropriate House of Legislature.

Senator Leroy Greene will sponsor our legislation on the Map Act and Senator Cortese will sponsor our legislation on the Land Surveyors Act. There are concerns regarding our legislation on the State Coordinate System. The Board authorized the Legislative Comm. to hold meetings of the statewide mapping and surveying organizations for direction on the State Coordinate System.

Booklets explaining surveying in layman terms are available to order through the Chapter Representatives. Members are needed on the Membership Committee.

Motion passed to formally respond to the use of the word "paraprofessional," in reference to surveyors, by an employee of the City of Coronado.

Motion passed to request the Board of Registration rescind the rule requiring that the executive officer be a registered engineer or licensed land surveyor to facilitate employing a qualified administrator.

Motion passed that CLSA oppose legislation to allow in lieu maps to be filed by a city and to oppose placing the Municipal Engineer in the Land Surveyor's Act in any form.

Motion passed requesting a \$1 donation from each CLSA member towards the production of the film

"A Fascinating Adventure Called Surveying" currently sponsored by NSPS.

The County Surveyors of Alameda and Contra Costa Counties are formulating a Professional Practices Committee to promote compliance with the Land Surveyor's Act.

Motion passed to refer to the Bylaws Committee for a report back a resolution regarding suggested changes in the composition of the Board and to consider suggestions made in their revised bylaws.

Motion passed to refer to the Professional Practices Committee for recommendation a proposed piece of legislation regarding the deletion of setback and seismic lines on recorded maps.



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# New Members

## WELCOME NEW MEMBERS

### CORPORATE MEMBERS

Donald Leroy Hobbs, LS  
Ronald C. Parker, LS  
James L. Meyer, LS  
Lloyd W. Hart, LS  
Eldon C. "Jake" Jacobsen, LS  
Jack T. Krull, LS  
Robert W. Zickwolf, LS  
Alan E. Jacobsen, LS  
Wayne A. McGee, LS  
Alan J. Ladd, LS

Larry Vernon Hazlett, LSIT  
Joel H. Halfhill, LSIT  
Richard P. Ray, LSIT  
Ajay Kurup, LSIT  
Christopher B. Curtis, LSIT  
Theodore M. Krull, LSIT

### AFFILIATE MEMBERS

Paul A. Baragona  
James K. Kammert  
Loren E. Culp  
Julia Glueckauf  
William H. Warner  
David A. Gillette  
Perry Albertson  
James K. Crossfield, Ph.D.

### STUDENT MEMBERS

Gary Perkins  
Brock Bucke

### ASSOCIATE MEMBERS

David G. Fredrickson, LSIT  
Charles F. Hartjen, LSIT  
Chris Johnston, LSIT  
James D. Buxton, LSIT  
John C. Acquistapace, LSIT



# Chapter Reports

## CENTRAL COAST CHAPTER OF C.L.S.A. 1984 ANNUAL REPORT

We are working at updating our chapter records for 1985, however, it appears that we have about 36 dues paying members. 27 corporate, 3 associates, 4 affiliates and 2 others simply interested in attending our meetings.

We normally hold our membership meetings on the second Thursday of each month, September through May excepting December. These are dinner meetings with a program. There is a short business session and reports as required. The bulk of the discussions affecting C.L.S.A. and/or our Chapter are handled through a Technical Committee which meets as required.

We have two annual social events, a Christmas party and summer barbeque. The barbeque is our sole fund raising event. The monies received are used primarily to cover expenses for non-local speakers. Our \$10 annual dues cover the cost of notifying those within our chapter area of upcoming meetings. Our notice is sent to approximately 100 individuals, agencies, and committees, past and future.

We have discussed, but as yet not established, a Map Review or Seminar Committee. As a prelude to the "seminar" we hope this year to have one meeting program that is specifically designed to appeal to the Title and Legal professions. Using this experience and exposure we hope to host a seminar for Realtors in 1986.

We have charged the Immediate Past President with the duties of organizing a speakers bureau and advising the local media of newsworthy events.

After years of discussion we finally got:

1. C.L.S.A. members listing in the yellow pages.
2. Prepared Job Descriptions of Officers and Board Representatives.
3. We continue to monitor local legislative matters.

## MARIN CHAPTER REPORT (Partial)

The February meeting of the Marin Chapter was held at Alexa's in Novato on February 13, 1985 with the meeting being called to order by Chairman Dave Cramer at 7:05 p.m.

**Old Business:** Ed Gardner stated that in talking with title people, it is imperative to send a copy of the checkprint of your parcel map to the title office. Ed also had hats off to the County and Chuck Murphy for great improvements made in map checking. Steve Jacobs gave us an update on the Mill Valley lot line adjustment. The Board wishes to review all their ordinances which might be in conflict with state law so that they could deal with any changes all in one giant swoop. The City is evidently now in the process of researching these conflicts. Anyone who can provide input to the Board is encouraged to do so. A discussion also followed on how to get other cities to follow suit, Sausalito being singled out, in bringing their ordinances in line with state law.

**New Business:** John FitzGerald mentioned the National Society of Professional Surveyors has put together a movie to be shown on public television on the history of surveying. The Society is looking for contributions to help finance the project. John offered that the Chapter might wish to make a contribution. Dale White stated the Board had taken the position to ask for a dollar per member of each

Chapter member. Another money matter involved the scholarship fund. In order to insure the monies be there for the fund, alternative funding sources were discussed, namely the possibility of obtaining Buck funds for a special assesment. This discussion also led to a fireside chat of who pays for the wine at the meetings. Generally, the cost is being pro-rated to all members present at the meeting. In the end John FitzGerald made a motion which was seconded and approved which earmarks \$200 in our account to be set aside for the scholarship fund. Dave Cramer suggested we also might consider raising the amount of the scholarship amount.

Money matters continued and a motion was made by John FitzGerald that Chapter dues be raised and become effective on January 1, 1986 as follows: Corporate \$35, Associate \$25, and Affiliate \$15. Little discussion followed and the motion was seconded and passed with no objections from those present. Steve Jacobs gave us a lively report on the Fresno surveying conference. Douglas Scranton brought up the need to review and update the Chapter by-laws as our current by-laws on file with the State Association are very out dated. The revisions done to our by-laws by George Colson, yet never officially acted upon, are being sent to all members to review and make recommended changes. Also there was expressed interest in conducting a "loose" fee survey, participate if you like, and of course the survey is anonymous. Bud Johnson announced that he had office space available to rent in his office and any interested person should contact Bud. The meeting was finally adjourned at 9:20 p.m.

Douglas J. Scranton, L.S.  
P.O. Box 2157  
Novato, CA 94948 (415) 897-3462

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(Continued from page 19)

(c) When a map is in preparation for recording or shall have been recorded under the provisions of the Subdivision Map Act.

(d) When the survey is a retracement of lines shown on a subdivision map, official map, or a record of survey, ~~or parcel map of record~~ where no material discrepancies with such those records are found and sufficient monumentation is found to establish the precise location of property corners thereon, provided that a corner record is filed for any property corners which are set or reset or found to be of a different character than indicated by prior records, or such survey. For purposes of this subdivision, a "material discrepancy" is limited to a material discrepancy in the position of points or lines, or in dimensions.

SEC. 5. Section 8766 of the Business and Professions Code is amended to read:

Within 20 working days after receiving the record of survey, or within such additional time as may be mutually agreed upon by the land surveyor or civil engineer and the county surveyor, the county surveyor shall examine it with respect to the following:

its accuracy of mathematical and substantial compliance with the information required by the statute. ~~the accuracy of the information as required by Section 8764.~~

~~to conform to other or satisfactory explanation of difference with such other~~

compliance with Sections 8763, 8764.5, 8771.5 and

examination pursuant to this section shall not require the licensed surveyor or registered civil engineer submitting the record of survey to change the methods or procedures utilized or employed in the performance of the survey, nor the examination require a separate examination to verify the data on the record of survey.

In this section shall limit the licensed surveyor from including or expressing opinions regarding the record of survey, or the

methods or procedures utilized or employed in the performance of the survey. The examination pursuant to this section shall be performed by, or under the direct supervision of a licensed land surveyor or registered civil engineer.

~~---(e) Its compliance with the provisions of this chapter.~~

SEC. 6. Section 8766.5 of the Business and Professions Code is amended to read:

8766.5 The County surveyor may charge a reasonable fee, ~~not to exceed the cost of such service,~~ for examining a record of survey pursuant to Section 8766: which shall not exceed the cost of the service or one hundred dollars (\$100), whichever is the lesser. However, this one hundred dollars (\$100) maximum fee may be increased by the Board of Supervisors if such an increase is authorized by a duly adopted ordinance and the ordinance was adopted pursuant to a staff report demonstrating that the cost of providing the examination service actually exceeds one hundred dollars (\$100) per record of survey.

SEC. 7. Section 8767 of the Business and Professions Code is amended to read:

8767. If the county surveyor finds that the record of survey to be satisfactory complies with the examination in Section 8766, the County surveyor he shall indorse a statement on it of his or her examination, and shall present it to the county recorder for filing. Otherwise he the county surveyor shall return it to the person who presented it, together with a written statement of the changes necessary to make it conform to the requirements of ~~this chapter~~ Section 8766. The licensed land surveyor or registered civil engineer submitting the record of survey may then make the agreed changes and note those matters which cannot be agreed upon and resubmit the record of survey pursuant to Section 8768.

SEC. 8. Section 8768 of the Business and Professions Code is amended to read:

8768. If the matters appearing on the record of survey cannot be agreed upon by the licensed land surveyor or the registered civil engineer and the county surveyor within 28 10 working calendar days from the date of submission, after

the licensed land surveyor or registered civil engineer resubmits and requests the record of survey be filed without further change, an explanation of the differences shall be noted on the map and it shall be presented by the county surveyor to the county recorder for filing, and the county recorder shall file the record of survey.

SEC. 8.5 Section 8768. 5 of the Business and Professions Code is added to read:

8768.5 If the county surveyor fails to timely file the record of survey with the county recorder in accordance with Section 8768, the licensed land surveyor or registered civil engineer submitting the map may bring an action pursuant to Section 1085 of the Code of Civil Procedure to compel the filing of the record of survey. After the licensed land surveyor or registered civil engineer resubmits and requests the record of survey to be filed without further change, the filing of the record of survey shall be deemed a ministerial act.

In any action brought pursuant to Section 1085 of the Code of Civil Procedure between a licensed land surveyor or registered civil engineer and the county surveyor of any county, the court may award to the prevailing party costs and other expenses of litigation, including the payment of experts and other witnesses, and reasonable attorneys' fees.

SEC. 9. Section 8772 of the Business and Professions Code is amended to read:

8772. Any monument set by a licensed land surveyor or registered civil engineer to mark or reference a point on a property or land line shall be permanently and visibly marked or tagged with the certificate number of the surveyor or civil engineer setting it, each number to be preceded by the letters "L.S." or "R.C.E.," respectively, as the case may be or, if the monument is set by a public agency, it shall be marked with the name of the agency and the political subdivision it serves.

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



**SUSTAINING MEMBERS (Continued)**

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ADDRESS CORRECTION REQUESTED

## Legislative News (continued)

(Continued from page 19)

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SEC. 5. Section 8766 of the Business and Professions Code is amended to read:

Within 20 working days after receiving the record of survey, or within such additional time as may be mutually agreed upon by the land surveyor or civil engineer and the county surveyor, the county surveyor shall examine it with respect to all of the following:

(a) Its accuracy of mathematical data and substantial compliance with the information required by completeness of information as required in Section 8764.

~~(b) Its conformity to other records or satisfactory explanation of any difference with such other records.~~

(b) Its compliance with Sections 8762.5, 8763, 8764.5, 8771.5 and 8772.

The examination pursuant to this section shall not require the licensed land surveyor or registered civil engineer submitting the record of survey to change the methods or procedures utilized or employed in the performance of the survey, nor shall the examination require a field survey to verify the data shown on the record of survey.

Nothing in this section shall limit the county surveyor from including notes expressing opinions regarding the record of survey, or the

methods or procedures utilized or employed in the performance of the survey. The examination pursuant to this section shall be performed by, or under the direct supervision of a licensed land surveyor or registered civil engineer.

~~---(e) Its compliance with the provisions of this chapter.~~

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