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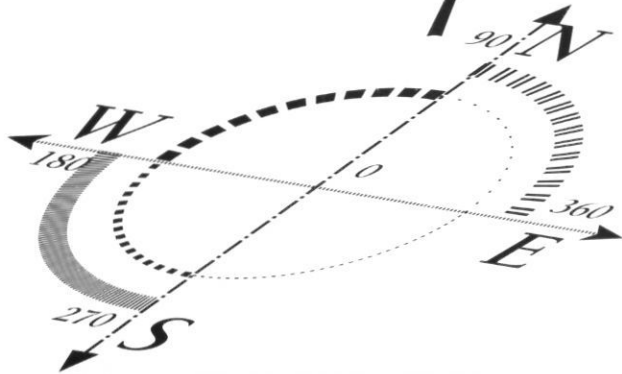
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"Recognizing that the true merit of a profession is determined by the value of its services to society, the California Land Surveyors Association does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social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

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

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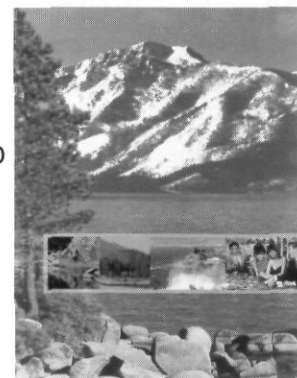
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CLSA Conference 2002

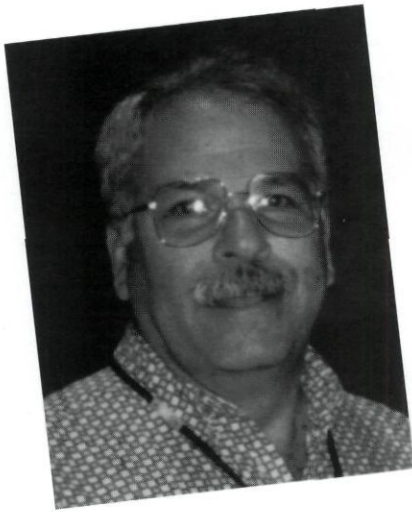
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Hot off the press!



On behalf of *The Profession*, I would like to welcome the newly minted licensees! Thank you for becoming members of the California Land Surveyors Association! I believe because of your involvement, our membership swelled to an all time high - 1190 members! Thank you!

Goin' solo?

For some of you that may decide to strike out on your own - be careful! About eight years after I received my ticket, I decided to hang a shingle. Going solo caused me to become an addict. I became addicted to work! Whether I like it or not! Weekends? No such thing. Must get things ready for next week or do billing. There are times when awaking from of a sweat-filled nightmare, in the middle of the night, I wished I had never become self-employed or a surveyor!

As you all know, I am not the *sharpest* knife in the drawer, but I would like to share some *Smart* Nuggets with our new found licensees which I have gleaned from others as well as my own peccadillos.

Nugget One: Be certain to secure that next survey! Bid low. You can never be *too* low. Besides, why have a client pay lookin' for old monuments that probably aren't there.

Nugget Two: Endeavor to do a survey as quickly as possible. Strive for a three day turn around for ALTA surveys - especially those commercial properties! You will be endeared by your realtor and/or your lender contacts.

Nugget Three: Never listen to competitors. They will just try to steer you the wrong way in an effort to steal your bait. They have also been known to 'share' wisdom of areas so difficult, they claim only a fool would survey there!

Nugget Four: Deny that you've ever erased field notes. This *is* true because *all* of your notes are electronic!

Nugget Five: Omit information on surveys. Drafting a Record of Survey map was never easier - as long as you don't have to show *everything!* Besides, delineating lines of occupation in addition to the

boundary would cause you to draw details up the ying yang. Also, it might not sit well with the neighbor and your client if there are encroachments!

Nugget Six: Vilify the competition. It will make you look good, 'cause you know more than they - you just passed *The* test!

Nugget Seven: Exercise as little as possible. Exercising causes joints to deteriorate prematurely and does nothing for the mind. Some go so far as to suggest - one should 'exercise one's mind' too! Unbelievable! Such a pearl of wisdom could only come from the mouth of a geomatics professor.

Nugget Eight: Reject no client! The quickest way to riches are to build a successful business. One cannot be very successful turning away business!

Now, if you suspect these *Smart* Nuggets may have the value of rabbit pellets - you have become smarter already! (And for those that suspect the editor is employing 'filler' - you'd be correct.)

Just say . . . ?

Hypothetical: A potential client calls to say . . . "I need my *property* lines staked. I know where the *bench mark* is . . . and it shouldn't take you more than an hour - 'cause the lot's clear." (*This could only mean it was a 'clear' day - over his lot, when Mr. Homeowner called.*)

You go out on a limb and ask ". . . why do you need the *boundary* staked?"

He spits, "Because the neighbor's a *jerk*. He's buildin' a fence on my property! . . . not only that - he married my ex-wife . . . she was havin' an affair with him! She thinks he is so 'sensitive'. What the hell does that mean?! He bruises easy?! You know how those kind are . . . One minute he's bakin' a pie and the next he's bakin' your wife! Anyway - she divorced me. She even got custody of my boys, Jeb and Al. And you know how! She mesmerized the judge with her Dupont Wonders - that *I* paid for! On top of all that, the witch had the nerve to hire a therapist to say Jeb 'n Al couldn't live without their dog! Bo is *my* dog 'n huntin' buddy! (*Visual*

id: Christopher Guest's dog in the movie, Best in Show.) That was the last straw! Not long after I was 'sightin'-in' my deer rifle off the back porch, the damned sheriff knocks on the front door of my trailer. She hands me a restraining order that says to stay 'way from my ex and my jerk father! Needless to say, I can't shoot off the back porch anymore! What's happened to America? Well, enough about me . . . The surveyor that lost to you in court suggested I call you. Can ya help me?"

Calls like that, make you want to click your heels, turn back time and not answer the phone! This is one reason some answer their phone from atop a stool with a noose around their neck.

"Huh, Bo. Sounds like another surveyor hung up on me!"


24k gold . . .

Over the years I have found that the estimating-part of surveying is much like fishing. There are times that you get skunked. But a good fisherman can feed his or her family well, if he or she are patient and do not cheapen the bait nor the techniques. Wouldn't you rather have one client that appreciates your product and is willing to pay for quality, than

a hundred lowest-bidder-gets-it clients? The latter being the type that can't seem to find the time to sign a contract, doesn't send a deposit, doesn't pay on time, finds fault with your work and delights at bad-mouthing you.

Don't short-shrift a potential client calling for an estimate. Spend some time with them. It will be an opportunity to educate them . . . and they may sense they are speaking with a professional. Suggest they consult a reputable competitor. Just like them, wouldn't you have more trust and confidence in a doctor or surveyor that suggested you seek a second opinion, rather than one that implied he or she was the only game in town? Trust costs time. So spend some time. You won't regret it.






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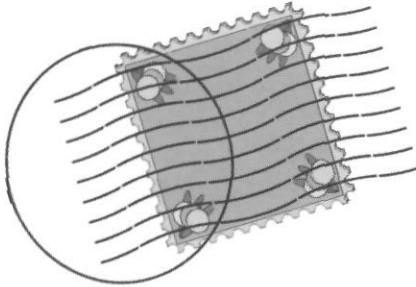


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Letters to the Editor



◆ Errors & Omissions Insurance

If you find yourself in a situation where your work as a Licensed Land Surveyor is being questioned by your client or others who have the ear of your client and you are confident, after review of your work, that you have performed consistent with industry standards, I suggest the following.

Wrap up your file, plans, etc. and take the package to a competitor. The land surveyor you select should be someone you trust to be honest and fair. If you are an active member of CLSA you know many trustworthy competitors. Hand over your package, a check for a reasonable retainer and request, in writing, that he/she reviews your work and submits a letter to your client including a copy of your letter requesting the review, stating the quality of your work and citing any errors you may have made. A copy of the letter should be provided to you, not the original.

When your client receives the letter from your competitor he/she will be relieved to know that your work was consistent with industry standards at the time it was performed, or you will have a defined issue to resolve.

If lawyers were beginning to circle, your position will be drastically improved once the report on the quality of your work is circulated. A claim against you and your firm will be substantially weakened if opposing counsel knows that a Licensed Land Surveyor who is not connected with your client has substantiated the quality of your work. If opposing counsel wishes to attack your work they will now have to find a Licensed Land Surveyor with impeccable credentials who is willing to state that both you and the surveyor who wrote the report on your work are in error. This would be unlikely. You may not have “checkmate” at this point, but you do have your opposition in “check.”

If the report, submitted by the surveyor you hired, cites an error in your work begin immediately to resolve the problem with your client. Do not wait for the problem to result in a claim against you and your firm.

If you have Errors and Omissions insurance, your carrier should be given a copy of the report and your letter requesting the report. If there is an error to resolve, your E & O carrier will be of assistance in resolving the problem. E & O insurance carriers value clients who are pro-active in heading off potential liability.

You know as well as I do that non-surveyors do not understand what we do or how we perform our work. When anything goes wrong on the job, often we are the first to be suspected for having made an error. To avoid damaging, expensive legal problems it is *required of us that we actively pursue reducing our exposure to liability.* Third party land surveyor opinions serve to defuse frivolous lawsuits brought by those who do not understand our profession and assume that their ignorance equates to our negligence.

Recording the location of our set-points in the data collector is not only beneficial in proving that our stakes or monuments are where we intended, the set point coordinates and elevations make it possible for a third party land surveyor to review our work and state with confidence the validity, or magnitude or error in our surveys. Unlike law school utopia, we are assumed to be in error until we prove that we are not in error.

Be thorough. Respect your clients enough to check your work. Stand firm when you are right. Find solutions when you have made a mistake. Seek the support of fellow land surveyors when you are suspected of negligence.

James T. Pilarski, PLS

◆ Interesting Juxtaposition

A GPS unit (2001) atop a pile of rocks purportedly set at the closing corner for Sec 26/27, T28S, R11E, MDM with the southerly line of the Rancho La Asuncion, San Luis Obispo County, Ca. (surveyed in February, 1880).

The iron pin, although old, was an addition by some unknown person.

This is outside Atascadero, Ca., and is some hot, tick infested, steep, nasty country. Hard to believe these original surveyors did such a superlative job in this country for \$5 (or so) per mile.

Take care and keep up your good work.

Robert Reese, PLS

(Thanks for the kind words and picture! - Ed.)



On the Cover Fall 2001

On the cover of the above named issue is a type of chaining apparatus/procedure I have NEVER seen or heard of before. Can you provide more information on the photo, as well as the equipment and procedure being performed? I would very much appreciate it.

Jim Skladany

Bud Uzes replies:

I'm glad you like the cover photograph and expect others will also. It has been a favorite of mine for many years and I decided it was worth sharing. The original snapshot is small - about 2" x 3.5" - but resolution is quite good.

I have never seen this particular taping setup before although it reminds me of old scenes where surveyors are making high-accuracy measurements with sophisticated baseline equipment. This appears to be an individual creation that makes the most out of standard equipment with some makeshift adaptations. What is unusual here is that there does not seem to be any spring balance for measuring tension, although one could be present but not recognizable. Nor is a thermometer readily visible. The closer chainman has what looks like a 100 foot steel tape on a reel that is fastened directly to the vertical

support bar. The far end of the tape appears to be hand held, using the bar solely for steadying under tension. How about the leather puttees? Also note that Melvin Thornton is wearing a necktie. I wish I could shed more light on the subject.

(Don't forget to check out Uzes website, you will love it! www.uzes.net/transits.htm Thanks for everything Bud! - Ed)



2002 SMA with Index!

2002 SMA now includes an index.
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President's Message



It is my sincere hope that each of you with professional careers in Land Surveying will become a mentor to someone else, somewhere during the course of your own career. Consider for a moment the number of people that have influenced you along the way. From the negative to the positive we can all learn something from each encounter we share with others. I was reflecting on how many people helped me out during this past year as the president of the California Land Surveyors Association. The more I thought about it the longer this list of mentors grew. I thought back to my very first job my as a delivery boy, my first experience as a party chief, the first time I managed a project and the great people I work with today at RBF Consulting. Each person I have met along this path has helped to shape the person I am today.

To paraphrase the philosopher Immanuel Kant, "The mistake of one Surveyor diminishes all Surveyors since we are all caught up in the same profession."

Our profession is very dynamic, it requires continuous technical study to master the opportunities brought about by the constant evolution of applied science. The unique tools we Surveyors use, the solutions we seek for the benefit of our clients and the people we work with are all caught up in a constant process of technological change.

Still, there are certain professional principles which do not change over time. Offering quality service to one's client is an example. In the same vein, all knowledgeable surveyors will perform a good deal of research before attempting a boundary survey in the field. One Surveyor may utilize the tool of the internet to perform such research, another may elect to search local agency offices for the same data. The individual methodology may differ but the results will be very much the same. In order to make the judgements necessary for determining the best course of action we will rely heavily on our own experiences and on what we have learned from the experiences of colleagues who have taken the time to mentor us.

All experienced professional land surveyors should aspire to achieve this sort of a leadership role sometime in their careers. Teach what you have experienced and experience what others can teach. Perhaps you can learn word processing from your secretary, brush up on your vector analysis by having lunch with the office G.P.S. expert, seek help in a deed interpretation by running it by the local guru of legal descriptions or take the time to call a vendor to better understand the latest field instrument. We can always find simple ways to learn more and to teach more. I can not believe how fortunate I have been in having the opportunity to learn so much from the many brilliant professionals I have met along the way.

I have also learned a lot from people who were not so brilliant. They served as good examples of a bad example. I think of circumstances when just changing a few words or altering the tone of a statement would result in an entirely different outcome. I am glad that I have met mentors who gave me the chance to learn from my errors and their experience.

I use to take some measure of consolation when a Surveyor mistake was made and publicized that at least I was not the one who made it. I now realize that members of the public tend to generalize. We are all Surveyors. To paraphrase the philosopher Immanuel Kant, "The mistake of one Surveyor diminishes all Surveyors since we are all caught up in the same profession."

Thank you for the time spent helping me and our association. Each day I will continue to learn. Each day I will continue to lead. Each day I wish the best for each of you.

George Abbot, LS 2297

George Abbott who lived the last thirty years of his lifetime in Sonoma County was an outstanding example of a surveyor's surveyor, and made indelible memories on the lives of many who knew him. This is his story, which in part has been told before (see "Astronomical Bearings and Tobacco Juice," by Dennis Morelli and Phil Graf published in the April-May 1988 edition of P.O.B.) It is designed to revive memories of George, from the perspective of not only how his employees saw him, but also a contemporary. Dennis Morelli has consented to the use of some of his material.

George Abbot (L.S. 2297) was a very special man, a surveyor's surveyor. In July of 1964 George wrote thus to the Christian Science Monitor to cancel his lifelong subscription "Will shortly be 90 years old, and my eyesight is failing to such an extent that am not able to read the fine print." Short and to the point (note; Typically he wrote without use of the personal pronoun) it was a characteristic of the bespectacled, barrel-shaped, quiet man who lived and worked in Western Sonoma County for more than thirty three years. He lived in a small clapboard cottage in Camp Meeker

George's territory was Bodega Ranch in the Russian River area and he had a forty-year old, carefully compiled, "survey records" library. He was a generous man to other surveyors and would share without reservation his surveys (which were mostly unrecorded.) Nearly all his survey plats had a "True" basis of bearing obtained from either a Polaris or a Sun shot, and they were meticulously organized, each to a class of accuracy.

George never married, and in a shy manner, after a glass or two, might show you faded 1920 photographs of him and a Philippine girl in a grass skirt. He was partial to Korbel brandy and enjoyed the company of a younger surveyor, wherein he might expound his view in general of the slackness of the current surveying standards. When I knew him in the late fifties and sixties, George wore a khaki shirt and trousers, he was about 5'10", and most of his broad chest had slipped south, as Dennis Morelli put it.

From an old habit of working in the woods with its fire dangers, he said, "I never smoked, but chewed tobacco most of my life." In nearly every room of his small house was coffee cans where he spit rather frequently, (sometimes in the cans.) George died in 1963, at the grand age of ninety, with services attended by a few friends and some of the young surveyors, such as Dennis and John Morelli who worked for him.

Continued on page 12



(near Occidental), a single man who never owned or drove a car. To those who knew him slightly, he was crusty, opinionated, and when his idea's were challenged might rear back and roar in a loud voice, "**No goddamn it, No!**" When you got to know him, you found him a gentle, and quite polite, shy individual.

Camp Meeker for those unfamiliar with Sonoma County, is a tiny hillside community deep in the Bodega Rancho redwoods. The streets are narrow and steep, the houses were mostly rebuilt 1900's cottages, and it lies between the community of Occidental and Monte Rio on the Russian River. This unincorporated little berg grew out of a timbering operation, started in the 1890's. Then it was a redwood lumbering camp owned by an early day operator, Meeker, and lasts today as a quiet summer vacation community with many year-around residents.

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Within an old grimy file, given to me by Dennis Morelli, I found an aged, typed, three page letter. The title was "Autobiography of George Stanley Abbott, dated Nov. 15, 1950", and the past came to life as I read it and remembered George. Some of the interesting highlights following are direct quotes, (any gaps are this author's choices.)

"I was born on a ranch some three miles south of Salinas, Monterey County, On November 10th, 1875. When about eight years old, my father donated an acre of land for school purposes, and the Llano School district was formed (and I attended it). Moved to Salinas, finished grammar school and through high school in 1895; then entered Stanford. Between 1895 and 1902 got in about two ° years, in Civil Engineering courses. In the periods was not able to attend the University, worked on ranches, and about 1895 worked (with a grading crew) for the Spreckels people, preparing their lands for irrigation and the sugar beet industry. In 1902, June if remember correctly, went to work for the Southern Pacific as a Rod-man on the Coast Division . . . At the time was getting \$80 per month, with expenses when away from San Francisco . . . Just after the 1906 Quake, and went to work for the Location Department. Was transitman on preliminary and location surveys from 1906 to 1914 . . . In the spring of 1914 had a run in with the Asst. Chief Engineer, and was fired. So enlisted in the 3rd Engineers for service in the Philippine Islands. In 1915 and was immediately put in charge of a party making a contour map of Corregidor . . . During this period, from arrival in the Islands to the date of our entry into the First World War, went from buck private to Sargent, and was given a temporary

Commission as Second Lieutenant in the Infantry . . . Then went with the 31st. Infantry to Siberia at Vladivostok, where authorized to spend any money necessary to provide winter quarters of troops in Siberia . . . Was discharged as First Lieutenant on May 27th, 1919 in San Francisco . . . Was offered a job as resident engineer on construction with the Alaskan Railroad Commission, was foolish enough to accept . . . Don't know which was the worst, the cold and wind during the winter, or the mosquitos and gnats during the summer and fall. Back in San Francisco, landed a job with the S.P. Co. worked partly in the field and then a couple of years as Office Engineer. As usual, got in a row with the Asst. to the Division, and stayed until the spring of 1930 when got sick of the way things were going, and . . . walked off the job . . . In the winter of 1930-31 went to work for the Meekers at Camp Meeker . . . Stayed with them until 1939, when quit on acc't pay and policy. From that time until the present worked as a private land Surveyor, and the engineering work on some 10 or 12 subdivisions, some four years ago was appointed to the County Planning Commission, and took an active part in all matters affecting subdivisions, roads, and those matters requiring an engineering background, until this year (1950), my health was not too good, and had to slack up."

This provides a verbal picture of George Abbott, as he saw himself, I was amused as I copied this data, noticing again the lack of use of personal pronouns such as "I or me." George was a shy man essentially, and yet, never refused to call a spade a spade when he was upset.

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Dennis Morelli wrote in his 1998 P.O.B. publication a remembrance of George that he started to work for him in 1954, while still a student in Sebastopol's Anly High School. He wrote the following remarks and I quote them to let you see George from an employee point of view.

"By the mid-fifties, when I and some of my high-school friends began to work for him, George was already well into his seventies. George's intellect and knowledge of surveying were intact, but getting out on the actual surveys was beginning to be difficult for him . . . George was a large man, with a barrel chest which, over the years, had slipped south quite a bit . . . George chewed tobacco constantly. The result of having an ever-present mouthful of Copenhagen was that he often communicated with a sort of close-mouthed, muffled roar in place of normal speech . . . We found this gruff old bachelor to be an irresistibly fascinating character . . . When it came to surveying technique, George set very high standards. He was constantly involved in meetings and correspondence with his contemporaries, and was tireless in his efforts to improve professional standards. He believed strongly that all surveys should be based on true meridian, and was a strong advocate of celestial observations . . ."

I found all of Dennis's comments about George's professional beliefs to be true reading directly from his files. The personal descriptions are Dennis's, but they are consistent with the man I knew as a contemporary and considered a friend.

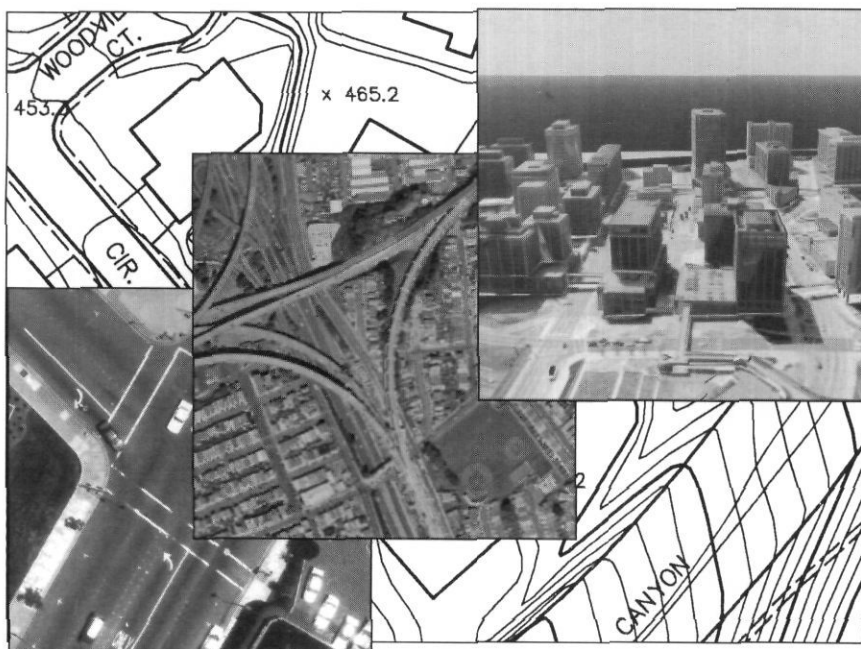
I asked John Ewing, a surveyor, and engineering technician who retired from the Sonoma County Water Agency after thirty years, how well he remembered George Abbott. The following are excerpts from his written response and I think they reflect Dennis Morelli's memories. John wrote, the following "Remembering G.S. Abbott."

"I was born in 1938, when the Ewings were living in Placerville, and dad was an engineer working for the USDA Soil Conservation Service. Work transfers took us to rural western Sonoma County, and I attended Anly High School and Santa Rosa Junior College. I had classes with John and Dennis Morelli, and knew Phil Graf since grammar school. These were the associations that lead to my part-time employment by George Abbott, beginning about 1958, and continuing until 1962. George then in his 80's and had already made his mark as a property surveyor in the area, having lived in Camp Meeker more than 25 years by that time.

His bachelors life, irascible nature and fondness for chewing tobacco, and liquor had long since earned him a reputation as a colorful character among the locals. There was plenty of competition for this status in this provincial community that seemed to prize eccentricity. I can attest to the basin-sized spittoons in his house, the snoose juice in the gray stubble of his chin and the numerous brown spit goobers around the transit which were the banes of any rear chain-man, but I never saw him take a drink. George's work attire was limited to tan khaki pants

Continued on page 14

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Surveyor

and a plaid shirt, and his ever-present shapeless hat. One attribute I recall, was when he was in the field, he completely ignored curious onlookers who might come out to ask questions when our survey crew appeared in the neighborhood. We the junior members of the crew were more cordial, and depending on our perception of their gullibility, might tell them we were surveying for the new freeway, or bank. George also had an odd habit of standing in the roadway, absolutely oblivious to traffic. Perhaps this stemmed from the fact that he never owned a car, but it amazed me that he was never run over. I agree with others who have known George as an employer, or colleague, that beneath the gruff exterior was basically a shy soul, a gentleman, and a man passionate for this profession. He could be very stubborn about getting the job done right. George had no patience with incompetence, and was a tireless advocate for practical and attainable survey standards. He paid fair wages and always on time. I doubt he ever stiffed a client. Some times he would spend days in his office on some vexing aspect of a job, without charging extra. When he encountered clients who failed to pay him, he simply refused to ever work for them again. The things I learned from George were simple and practical. How to pull a 200-foot steel tape through the woods all day without snagging or kinking it; how to set up the transit quickly and safely in steep terrain along with the right way to pound a stake, and the value of double-chaining, doubled angles, and checking your figures."

(John Ewing served in the USACE, as a construction surveyor, and retired from the Sonoma County Water Agency in 1991 after 30 years service as an engineering technician.)

From the perspective of a contemporary licensed surveyor, who on occasion would seek out George Abbott requesting background on a survey, or a plat copy of his work he was a delight to know. We enjoyed each other's company on occasions, I would call, arrange an appointment convenient to him, and I usually brought a half pint of brandy. He seemed to love company, and after helping me would settle back for a little jawing in that sparse bachelor's cottage of his. His usual gruff, yet gentlemanly attitude toward other practicing surveyors, and his story telling was fun and instructive. But woe to the person who made a statement contradictory to his views on surveying, George would rear back, blinking behind his round glasses and roar out nearly shouting "No, Goddam it No! Despite his firm stances and strong convictions, even when pressed by the County Surveyor to resolve a boundary issue, he would not take a position, favoring one against the other.

In 1962 George wrote to the Sonoma, Lake and Mendocino Engineers and Surveying Association (predecessor to the California Land Surveyors Association) and resigned his membership. He said that the purpose of the group as stated, was to pool ideas, and practices in field and office work . . . To



standardize procedures . . . and that having attended most of the meetings, he felt that the majority seemed to favor a social get-together on the Friday night end-of-the work week. And thus to hell with any joint efforts . . . , and he concluded that most of his fellow members could stand a lot of improvement in practices and accuracy. But then George closed with "But on the anniversary of my eighty-second birthday, may your elbows never fail in hoisting one to good fellowship."

Was this a real picture of a bright, interesting man, a Surveyor's Surveyor. For me it was. There are not too many people living who remember the man. A majority of the new breed don't even care, even if they know his name. Yet there is a haunting phrase that reads, "those who don't care about history, are doomed to repeat it," perhaps that is the way it should be.



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Surveyor

Rules For Land Surveyors

Rule One

To avoid liability, the surveyor should err on the side of safety. Always try to do a little more than an ordinarily prudent surveyor would do under the circumstances.

Rule Two

It is the land surveyor's duty to correctly locate and mark property lines as described in a deed furnished him, and to relate line of possession to title lines. The surveyor cannot and does not assume the responsibility of proving that a given deed is correct and legal; that is a function of an attorney or court of law.

Rule Three

Search and search well! If it is there, find it! If it isn't, be able to say with certainty that it isn't there.

Rule Four

Liability results when the surveyor fails to do correctly the thing that he purports to do.

Rule Five

The surveyor is a fact finder. He goes upon the land armed with all the documentary evidence that is available and searches for markers, monuments, and other facts. After all the evidence, facts, measurements, and observations are assembled, the surveyor must come to a conclusion from the facts.

Rule Six

Never set a corner in disagreement with improvements without first satisfying yourself that you are not only right, but that your "right" will prevail in court, if necessary.

Rule Seven

Discovery of a county surveyor's monument does not relieve the surveyor of the obligation to look further. The County monument is only proof in the event that Rule superior evidence cannot be discovered.

Continued on page 29

The Maker's Mark

Once upon a time, a young professional was struggling with the thought that he might leave no lasting mark in the world. He decided to enter the furniture making business.

The fine wooden items he made would bear his mark, on the underside, just out of sight, but there to see for anyone who cared to look. His single minded efforts caused him to mostly ignore his family and friends, while his furniture business prospered. As time went by the true cost to his family of building his business was made plain. Along the way, he saw his furniture burned as fuel and used as mere support for mundane objects. He was fortunate that, despite his neglect, his children grew up to be fine citizens of whom he was proud. It was obvious that the only lasting mark he could leave on this Earth was his influence on those closest to him. They in turn would influence their children, and so it would go into the future. The mark he decided to make in his community would be like that he had made on his furniture, out of sight, yet evident to those who'd care to look closely. He resolved that this was to be his Maker's Mark on the world.

I hope that all of you will consider what lasting positive effect you are having on those around you.

(Originally published in the August 2001 issue of the Minnesota Surveyor. Reprinted by permission.)



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Brandt v. Johnson-Reiland Construction, Inc.

Unreported, (Minn.App. 001)

In early 1994, Johnson-Reiland Construction, Inc. hired Brandt, a surveyor and civil engineer, as a project engineer for a multi-family housing development. Brandt was responsible for surveying and platting the lots as well as engineering design work. Johnson-Reiland gave Brandt various floor plans for the housing development. Johnson-Reiland asserts that Brandt received all floor plans prior to platting. Brandt claims he did not receive the largest floor plan until after he finished platting. As a consequence, part of the development had to be replatted. Johnson-Reiland asserted the replatting was required because Brandt did not use the correct building setback requirements.

By mid-1998 the dispute had spoiled the working relationship. Subsequently, Johnson-Reiland hired James R. Hill, Inc. to continue with the platting. James R. Hill replatted more of the original plats for the stated reason that Brandt did not correctly establish the ordinary high water mark for the lake next to the development and the plats were improperly drawn.

Johnson-Reiland refused to pay Brandt for replatting. As a consequence, in early 1999, Brandt foreclosed his mechanic's lien against the development seeking \$3,368.24. Johnson-Reiland counterclaimed that Brandt negligently performed engineering and surveying work. In early 2000, a bench trial was conducted. At its conclusion, the court awarded Brandt \$3,368.24 (his fee), \$369.58 in interest, \$522.98 in costs and disbursements, and \$5,317.55 in attorney fees. The court dismissed Johnson-Reiland's counterclaim. The decision was upheld on appeal.

Several important points can be drawn from this case.

Litigation Costs Exceed Damages Sought:


As is so often the case with litigation, the costs incurred as part of the litigation exceeded the amount sought. In this case, the attorney fees were \$5,317.55. The amount of damages were \$3,368.24. The attorney fees exceeded the amount that was sought. (As a result, Johnson-Reiland probably paid in excess of \$10,000 in order to avoid paying \$3,368.24.) Furthermore, experience suggests that the court awarded Brandt far less than the actual attorney fees. No fees were awarded for appeal. As a result, both sides found that justice is often obscured by the weight of the money used to obtain it. Also, it took over six years to obtain payment for the services completed.

Mechanics Lien:


This case shows the power and usefulness of a mechanics lien in forcing payment. The mechanic's lien made the surveyor a secured creditor. The security was the property. Many developers do not have assets in their corporate names other than the property that is being developed. Without the ability to secure the property, the surveyor would be without recourse to obtain the money owed from a developer.

Time Sheets

The trial court was impressed with the detailed time sheets that Brandt kept and presented as evidence to support the fee he sought. Johnson-Reiland attempted to show that \$1,250 was a more appropriate and reasonable fee. This was rejected with the court finding that \$85 per hour to be reasonable. This case illustrates the usefulness of keeping detailed and complete records of the time and cost required for the services rendered.



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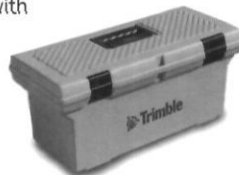
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Mapping Scales v. Plotting Scales

It is important to understand that there is a significant difference between plotting a map at 1"=20', and 20 scale mapping. When an engineer or surveyor hires a photogrammetrist to produce a topo at "20 scale", it is important for the photogrammetrist to make sure he/she understands what exactly the client is asking for. Is the client simply asking for a plot at 1" =20' because that's a convenient size to fit on a standard sheet? Is the client intending to get a product of greater accuracy than 1" =40' map?

Plotting Scale

Plotting scale simply refers to the final hard-copy scale of a map. It is not a function or indication of the precision or accuracy of the linework. A 1" =40' scale "digital" file can be plotted to a hard-copy at 1" = 20', but there is no difference in precision or accuracy between the two plots. Plotting scale affects little more than choice of text size, ability to discern detail, sheet size and sheet layout.

Mapping Scale

Choosing a mapping scale, on the other hand, is considerably more complicated. Mapping scale is a function of the amount of desired planimetric details, the required horizontal and vertical accuracy, and the available budget.

The most widely accepted standards for photogrammetric mapping in the United States are the National Map Accuracy Standards (NMAS), as stated by the Office of Management and Budget. There are other, more stringent standards being used, but this paper will refer to NMAS. There are four standards within the NMAS that are of particular importance to us in the planning of a mapping scale:

1. Horizontal Accuracy of Planimetric Features

The horizontal accuracy of 90% of the finite cultural features (those features which are clearly visible and definable in the stereo photography) shall be better than 1/30th of an inch at the mapping scale. This means that at a mapping scale of 1" =40', a clearly visible wall corner should be plotted to within 1.3' of its true position relative to the survey photo control. The same feature plotted at a 1" =20' mapping scale should be accurate to within 0.7'. Experience has shown that photogrammetrists can routinely achieve better accuracies than these. The point here is that if it is essential that planimetric features must be plotted with a greater horizontal accuracy than 1', you may need to order mapping with a scale of 1" = 30' or larger.

Note: The Federal Highway Administration published a separate set of standards in their "Reference Guide Outline". This standard states, in brief, that 90% of well defined planimetric features shall be within 1/40th of an inch at mapping scale.

2. Contour Accuracies

Ninety percent of contours should be accurate to within one half a contour interval. This means that if you send a survey crew out to field verify the contours of a map done to NMAS, you should find that most of the contours on a 1' contour interval map are within 0.5' of the correct elevation. Again, modern analytical photogrammetric equipment can consistently achieve better accuracies than these. You may have a situation where you have a site with a considerable amount of terrain relief in it. You may decide that having a 1' contour interval will make your map too crowded and therefore, you only want 2' contours. If you simply ask the photogrammetrist for a 2' contour interval map, he/she will probably compile a map to NMAS for 2' contours (90% of contours will be within 1'). If what you really want is 1' contour interval accuracy, but with only the 2' contours plotted, be sure to specify this when you order the map. If you don't specify ahead of time, chances are the photogrammetrist will have flown and photographed the site at a photo scale that will not allow for 1' contour interval accuracies.

3. Spot Elevation Accuracies

Per the Federal Highway Administration "Reference Guide Outline", *Ninety percent of plotted spot elevations should be accurate to within one fourth of the contour interval.*

The same principals and ideas apply to spot elevations as discussed under Contour Accuracies above.

4. Mapping Scale to Photo Scale Relationship

The maximum recommended enlargement factor from photo scale to map scale for an analytical plotter is 7.5 times. For example: If the desired mapping scale is 1" =40'; then the maximum recommended photo scale is 40 X 7.5, or, 1" =300'. The recommended photo scale for 1" =20' mapping would be 1" =150'. Photo scale is directly related to camera focal length and flying height. Most large scale mapping photography is accomplished with a camera having a 6" focal length. Flying height can be calculated by multiplying focal length X photo scale. For 1" =150' photo scale, the flying height would be 6 X150= 900 feet above the terrain. The FAA requires a minimum allowable flying height

above populated areas of 1000' above terrain. Wouldn't this technically make 1"=20' mapping impossible to achieve within NMAS? Again, because these standards were written prior to some technical breakthroughs, experience has shown that a photogrammetrist using an analytical stereoplotter may be able to use a photo to map scale enlargement factor of greater than 7.5X to achieve 1"=20' mapping.

There is also a direct relationship between mapping scale and mapping costs. As explained above, higher accuracies require lower flying heights. Obviously, the lower you fly, the smaller the area that will be covered by a single photograph. Increasing the number of photographs also increases the amount of survey ground control that is necessary. For example, a 10,000' X 10,000' parcel mapped with 1"=300' photography (for 1"=40' mapping) would require about 20 survey control points (using a conservative, text book control layout). The same parcel mapped with 1"=150' photography (for 1"=20' mapping accuracy) would require about 80 survey control points. Increasing the number of photographs also increases the cost from the photogrammetrist.

Whether a client insists on 1"=40' mapping or any other scale, it is a good policy to field locate, by ground survey methods, any "hard surfaced" areas where engineering requires accuracies greater than can be achieved by photogrammetric mapping. This is very important to keep in mind. These "hard surface" features may be the only items that need to be located to a high degree of accuracy. Keep this in mind when coaching your client on map scale decisions. Avoid committing to "20 scale" mapping accuracies when they are not necessary. Make sure your client understands that he/she may be getting very little accuracy vs. cost benefit when ordering a "20 scale" map over a "40 scale" map.

References: Manual of Photogrammetry 1980
Elements of Photogrammetry: Wolf 1974
Aerial Mapping – Methods and Applications: Falkner 1995

Steve Shambeck is a Vice President and Principal with Hall & Foreman, Inc.(HFI), a Civil Engineering and Land Surveying firm with three offices in Southern California. Steve is the Principal-in-Charge of HFI's Upland office which serves the Inland Empire area of Southern California. He is a Licensed Land Surveyor and is responsible for overseeing the surveying and mapping departments for HFI. Steve has a Bachelor of Science in Surveying and Photogrammetry from California State University Fresno and a Diploma from the Swiss School for Photogrammetry Operators. He is the current Vice President and President Elect of the Orange County Chapter of CLSA.



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The \$1.7 Million Manhole

A Court Case Hinges on Interpretation of the ALTA/ACSM Standards

In February 2000, a complaint was filed in a United States District Court for breach of contract and professional negligence against a surveying firm for a survey and plat that failed to note the existence of a 54-inch combination sewer for which there was no recorded easement.¹ The Federal Court had jurisdiction over the case since the parties were citizens of different states.

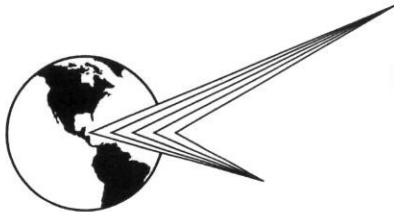
At issue in the complaint was simply whether or not the surveyor had performed his survey in accordance with the 1997 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys.

¹Note: Certain non-essential facts related to this case, such as names and location, have been eliminated or altered to protect the parties involved.

Attorneys for both the plaintiff and the defendant contacted the author in April 2000 regarding his opinion on the matter. After several discussions, he was hired by the plaintiff's attorney to provide an expert report with the potential to be subsequently deposed or called as an expert witness at the trial.

The purchaser/developer (plaintiff) had contracted with the surveying and engineering firm in April 1998 to provide an ALTA/ACSM Land Title Survey. The contract specifically noted that the surveyor would "Reconnoiter site to check for any changes to site improvements from our 1986 survey and remark or reestablish lot corners"; "Prepare a Boundary and Improvement/A.L.T.A. Survey Plat" and "Examine title report and locate easements described on the site." The contract was on an hourly basis and did not make any mention of optional Table A items.

The survey was completed and delivered the following month. A certification on the face of the survey stated that it had been made in accordance with "minimum standard detail requirements for ALTA/ACSM land title surveys" adopted in 1997. In addition, a note on the survey stated, "No certification is made as to the locations of underground utilities such as, but not limited to, electric, telephone, cable TV, gas, water, sanitary and storm sewers. Only above-



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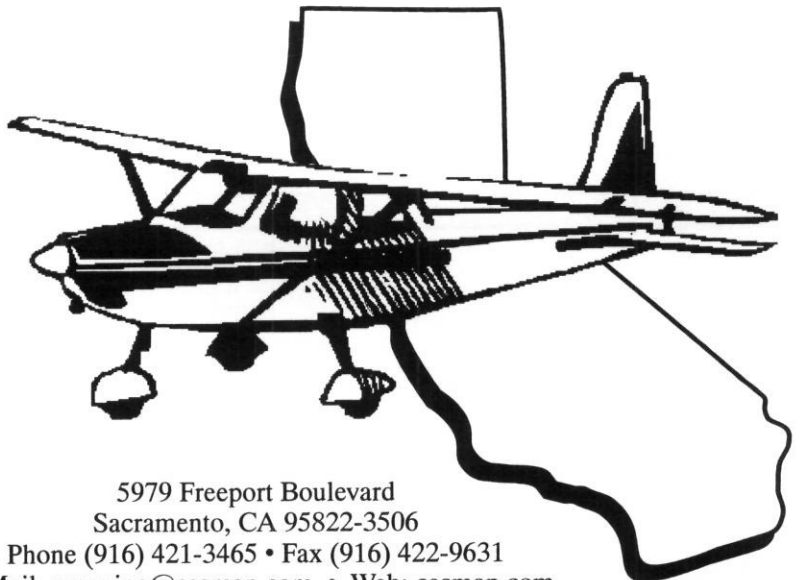
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ground visible features are shown. Other utilities may exist of which [surveyor] has no knowledge.” The buyer and title company relied on the survey in completing the closing.

After purchasing the property, the developer hired another engineering firm to conduct a topographic survey of the site in preparation for a design of a new office complex. The August 1998 site survey showed a 54-inch combination sewer running directly under where one of the new buildings was to be placed. The sewer entered the property on the south, ran north through the real estate and exited at the north line of the property.

A search by the title company confirmed that there was no recorded easement for this sewer and, since the Land Title Survey had not shown evidence of it, the title policy contained no exception for it in Schedule B2. The title company’s policy provided that it would either correct the deficiency or pay damages, but only if same could not be obtained from the surveyor who had prepared the Land Title Survey on which the policy was based. Thus, action was filed against the surveyor and his errors and omissions insurance company was thereby pulled into the case.

There was no disagreement that the manhole was visible at the time of the survey (it fell in the middle of an entrance drive). There was no vehicle parked over it nor was there any snow on the ground. No reasons were offered to the author as to why the manhole was

not shown on the survey plat. There could be several excuses. Perhaps the field crew was untrained and did not know that locating the manhole was important. Perhaps the field crew just “missed it.” Perhaps the crew in fact did locate the manhole in their notes and the draftsman made a decision to not show it—not recognizing its importance. Or, perhaps, the registrant made the decision. In any case, the reason the manhole was not shown is irrelevant.

The first count of the complaint alleged that the defendant surveyor had “negligently performed the survey and/or negligently prepared the survey plat by failing to locate and note observable evidence of easements and/or servitudes, such as the above referenced sewer line,” and by failing to “locate easements and/or servitudes on the site.” In essence, the claim was that the visible manhole was a surface indication of an underground easement and that as such, it was required to have been shown on the survey.

The second count alleged that the defendant had breached the contract by performing a survey and providing a survey plat that were not in accordance with the 1997 ALTA/ACSM requirements.

The complaint claimed \$1.7 million in damages resulting from the costs for designing and relocating the sewer, and to recover value paid for the real estate in excess of its worth due to the sewer’s existence.

Continued on page 27

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The plaintiff's complaint relied on paragraph 5h of the 1997 ALTA/ACSM Minimum Standards which states "Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted."

The defendant's response was that since Table A item 11 was not contracted nor certified to there was no obligation to show the manhole. Item 11 of Table A in the 1997 standards states, "Location of utilities serving or existing on the property as evidenced by on-site observation or as determined by records provided by client, utility companies and other appropriate sources (with reference as to the source of information) (for example): (a) railroad tracks and sidings; (b) manholes, catch basins, valve vaults or other surface indications of subterranean uses; (c) wires and cables (including their function) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all crosswires or overhangs affecting the surveyed premises; and (d) utility company installations on the surveyed premises."

The defendant's claim was (apparently) relying on the fact that "manholes" are specifically mentioned in Item 11, but not in paragraph 5h.

After being qualified as an expert witness under Rule 26 of the Federal Rules of Evidence, the author submitted a written report summarizing paragraph 5h and Table A item 11 in the ALTA/ACSM Minimum Standards and how they related to the claim.

The primary emphasis of the report was to explore the defendant's claim that since the location of utilities under Table A item 11 was not requested nor certified to, depicting the manhole on the survey plat was not required.

The fact that Table A item 11 was not addressed (and that there was a note on the survey regarding the location of underground utilities) does not dismiss the burden on the surveyor under paragraph 5h to show the manhole. Paragraph 5h and Table A item 11 address two entirely different issues.

Under 5h, a manhole is clearly "observable evidence of an easement and/or servitude" unless further investigations were to reveal that it was not. For example, a manhole for a storm sewer that drains a parking lot to on-site detention might very well not be evidence of an easement.

It is an aside that as *evidence of a sewer*, the manhole did not have to be shown on the survey because Table A item 11 was not included. But as *observable evidence of an easement* under paragraph 5h, it did have to be shown.

The case was settled out of court.

Gary Kent, Director of Surveying with the Schneider Corporation in Indianapolis, Indiana, is the President Elect of the American Congress in Surveying and Mapping and will serve as President from March 2001 - March 2002.



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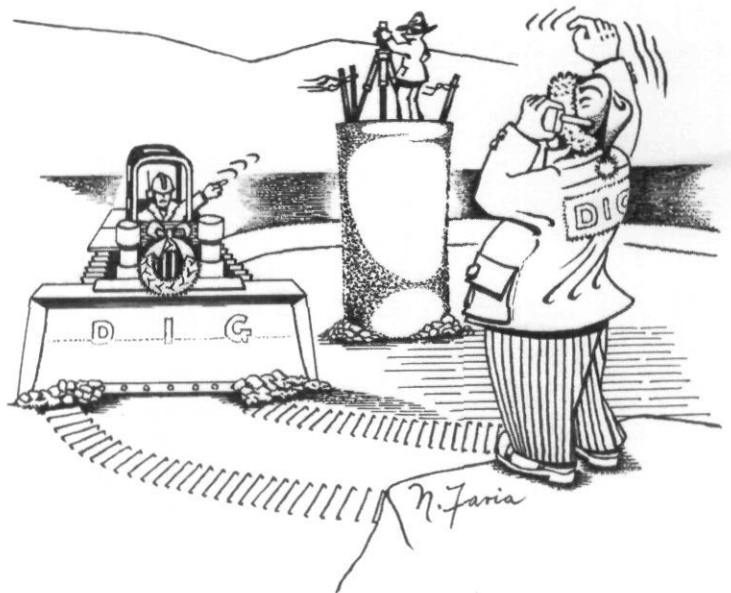
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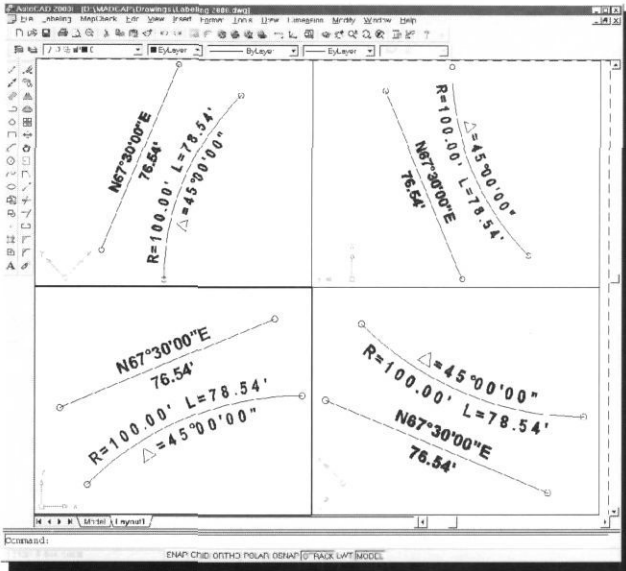
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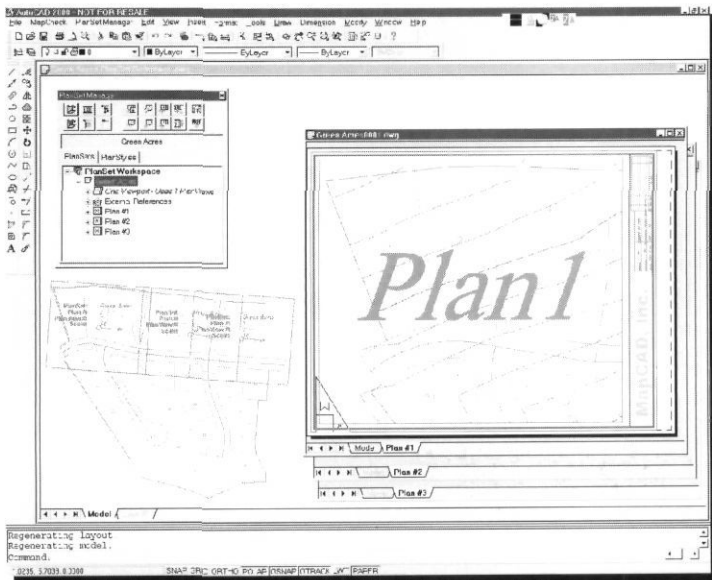
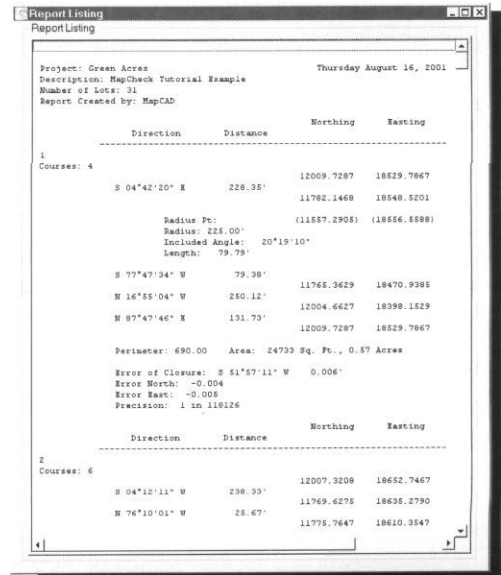
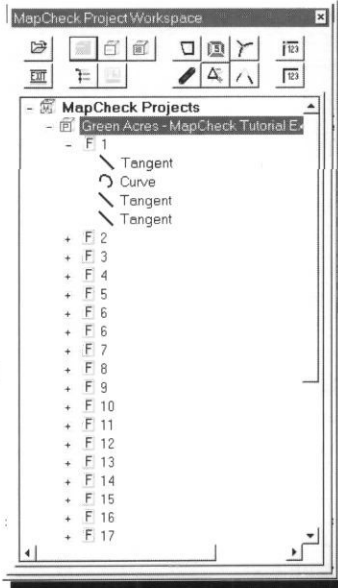
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Rule Seven cont.

Therefore, the surveyor must seek all other evidence and use the official monuments as though they were the last resort.

Rule Eight

The conclusions that flow from the evidence may produce proof. Evidence in itself is not proof of a fact; a conclusion or inference that may be drawn from evidence is the proof. In coming to conclusions from evidence, the most important need of the surveyor is the ability to recognize and know what is the best evidence.

Rule Nine

The best evidence of a monument's original position is a continuous history by acceptable records, dating back to the time of the original monumentation. A found monument without a background history is of little value as evidence, and a set monument is worthless if unidentifiable in the future.

Rule Ten

In civil cases having to do with land surveying and real property, it is only necessary to prove a preponderance of evidence; it is not necessary to prove "beyond a reasonable doubt" as in criminal cases.

Rule Eleven

It is of the utmost importance that a surveyor seek and find all of the evidence at the time of the initial survey, and this must be done irrespective of costs, the major cause of disagreements.

Rule Twelve

A surveyor may be able to compute, make drawings, use instruments, and stake engineering projects, but until he understands property line law and the law of evidence, he is not qualified to make property location.

Reprinted from the Oregon Surveyor, April/May 2001



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Established _____ (YR) Business entity is: Individual, Partnership, Corporation, Other (Detail) _____
Services: Are you engaged in any business other than land surveying? Yes No If so, a separate application must be submitted. Contact our office. Projects: Indicate % of receipts from each of the following: Condos _____ %
Residential Developments/Tract Homes _____ % Oil or Gas Pipelines _____ % Dams _____ %
Bridges _____ % Tunnels _____ % Other (describe) _____ (Total should equal 100%)
Total billings for land surveying services: Past Year _____ Current Year _____
No. of employed staff: Surveyors _____ Draftsmen _____ Chainmen _____ Clerical _____
Are subcontractors used? Yes No If yes, are certificates of insurance obtained? Yes No What % of your work is done by subcontractors? _____ %
Current Carrier _____ Past year's premium _____
Policy expiration date _____ Retroactive date (original claims-made inception date) _____
Professional Liability claims past 5 years Yes No If yes, send a sheet with claim details

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Here's Some Important Information About CLSA

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

Representation

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

Educational Opportunities

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

Business and Professional Services

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

JOIN CLSA TODAY!

- **CORPORATE MEMBER** *\$159.00 + Entrance Fee. Shall have a valid CA Professional Land Surveyor or Photogrammetric license.
- **CE CORPORATE MEMBER** *\$159.00 + Entrance Fee. Any California registered Civil Engineer who is authorized to practice land surveying pursuant to Article 3, Section 8731 of the PLS Act and must be actively practicing land surveying and show sufficient proof thereof. CE Corporate membership must be approved by the Board of Directors.
- **AFFILIATE MEMBER** *\$79.50 + Entrance Fee. Any person who, in their profession or vocation, relies upon the fundamentals of land surveying.
- **ASSOCIATE MEMBER GRADE** *\$79.50 + Entrance Fee. Any person who holds a valid certificate as a Land Surveyor-in-Training.
- **OUT-OF-STATE CORPORATE MEMBER GRADE** *\$79.50 + Entrance Fee. Any person who resides in a state other than CA, who is a member of the other state's Association, and meets the requirements of Corporate Member.
- **STUDENT MEMBER GRADE** *\$15.90. A student in a college or university actively pursuing a surveying education.
- **SUSTAINING MEMBER GRADE** *Annual Dues \$318.00 + Entrance Fee. Any individual, company or corporation who, by their interest in the land surveying profession, is desirous of supporting the purposes and objectives of this corporation.

1. Member Grade Applying for _____ Date _____

2. Name (Full) _____
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CITY STATE ZIP

4. Mailing Address is: Business Residence 5. Bus. Phone _____

6. Res. Phone _____ 7. Fax _____ 8. E-mail _____

9. Name of Firm, Agency or College _____

10. California License Number PLS# _____ LSIT# _____ RCE# _____ EIT# _____

11. Have you previously been a member of the State Association? Yes No Year _____

12. Signature of Applicant _____

Mail your completed application to:

CLSA Central Office
 PO Box 9098
 Santa Rosa, CA 95405

Questions?
 Phone: (707)578-6016
 Fax: (707)578-4406
 clsa@ca-surveyors.org

*First Year Dues are to be prorated from date of application

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SUSTAINING MEMBERSHIP

Membership in the California Land Surveyors Association, Inc. 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 CLSA Central Office, P.O. Box 9098, Santa Rosa, CA 95405. Tel: (707) 578-6016 Fax: (707) 578-4406

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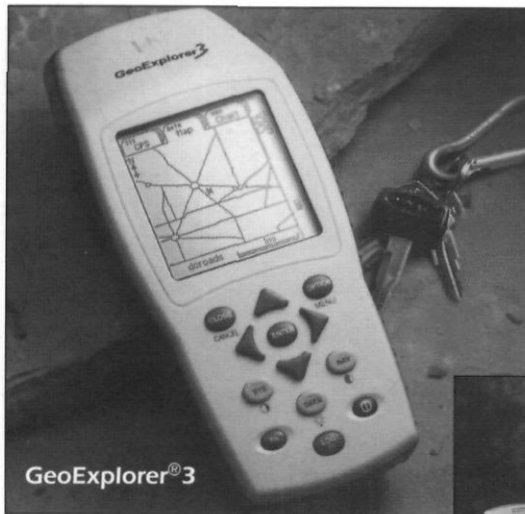
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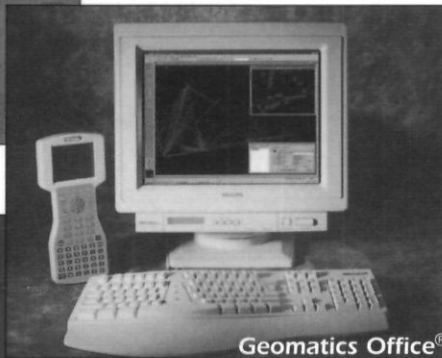
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