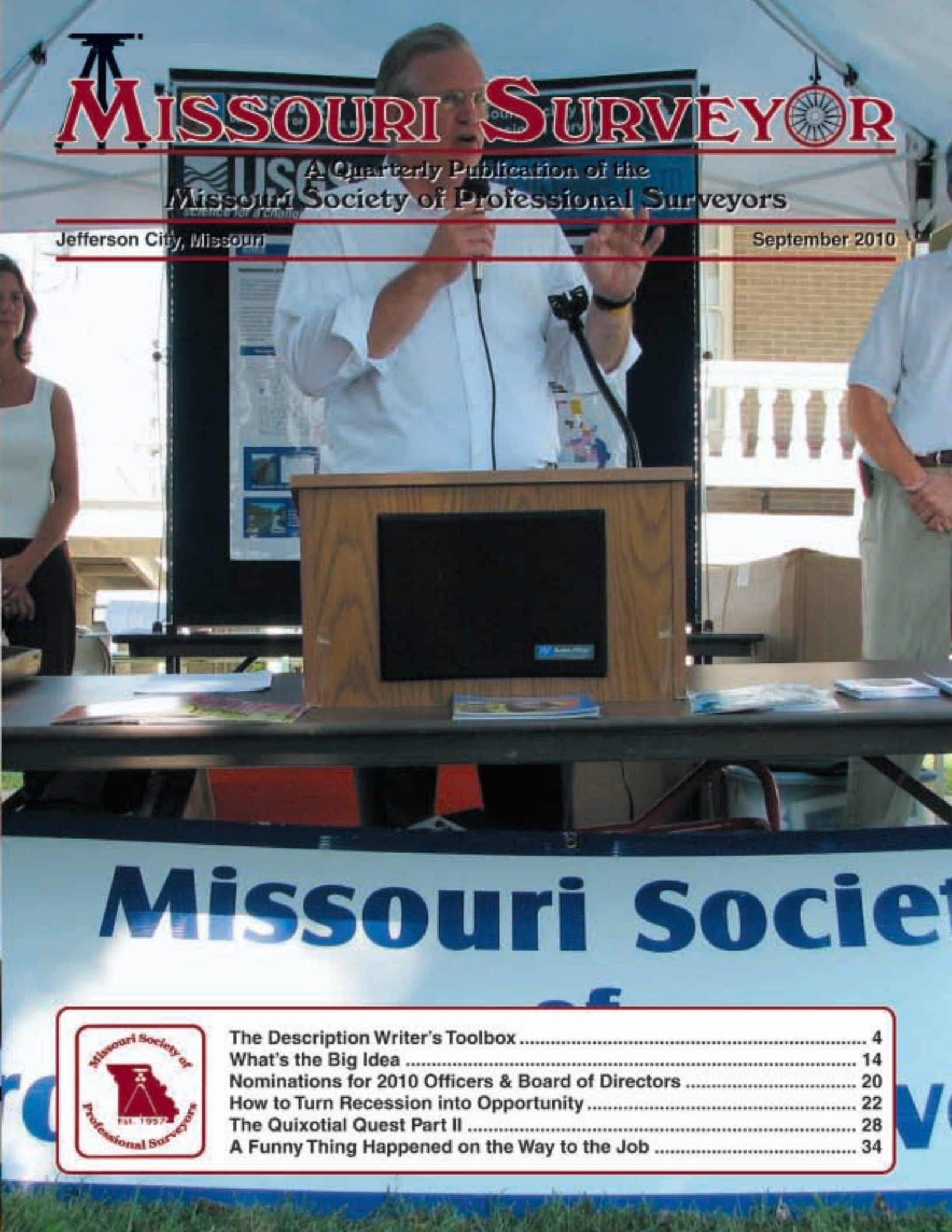

MISSOURI SURVEYOR

CALENDAR OF EVENTS

2010-2011

October 7-9, 2010
53rd Annual Meeting and Convention
Tan-Tar-A Resort
Osage Beach, MO

December 4, 2010
Board Meeting
MSPS Office
Jefferson City, MO

February 16, 2011
Board of Directors Meeting and Capitol Visitation
Capitol Plaza Hotel
Jefferson City, MO

May 5, 2011
Board of Directors Meeting and Golf Tournament
Lodge of Four Seasons
Lake Ozark, MO

May 6-7, 2011
Spring Workshop
Lodge of Four Seasons
Lake Ozark, MO

July 8-9, 2011
Board Meeting, Golf Tournament and Minimum Standards Workshop
Lodge of Four Seasons
Lake Ozark, MO

October 13-15, 2011
54th Annual Meeting and Convention
University Plaza Hotel
Springfield, MO

May 11-12, 2012
Spring Workshop
Lodge of Four Seasons
Lake Ozark, MO

July 14, 2012
Minimum Standards Workshop
Lodge of Four Seasons
Lake Ozark, MO

October 11-13, 2012
55th Annual Meeting and Convention
Hilton St. Louis Frontenac
St. Louis, MO

John Alan Holleck, Editor

Notes from the Editor's Desk

by John Alan Holleck

Here it is annual meeting and election of officer's time of the year. It keeps me wondering if time is passing this quickly for a reason. Although, I have to admit I have no solution for the reason behind such a thought. Speaking of thoughts with no particular solution, how about this reasonably mild summer? In the 'old days,' summer meant 110° in the shade with 90% humidity but I can think of only about a dozen really hot days this summer. Now, I am not complaining—mind you—just wondering out loud. Of particular interest to the editor, me, a surveyor from another state wrote to praise our quarterly publication—*the Missouri Surveyor*. On that positive note on to what is in the September issue.

After my "Notes from the Editor's Desk" and Ralph's President's Message, I found a wonderful article entitled "The Description Writer's Toolbox" by Russ Forsberg, a retired California and educator. The article is well written and illustrated. Chris Wickern graces our pages again, with "What's the Big Idea?" about the second annual MSPS booth at the Missouri State Fair and "Future Surveyors" about the Boy Scout Campout at Central Methodist University in Fayette, Missouri. A group a surveyors represented the profession during the jamboree. The middle of this issue is the nominations for Officers and Board of Directors.

The second half of the issue begins with "How to Turn Recession Into Opportunity" by Wayne Rivers, President of Family Business Institute of New York. Mr. Rivers' company specializes in small business issues. To interject a bit of humor into this issue, please take note of "What is Your Client's Image of You?" on page 26. Not quite the picture of the professionals we all think we are. Stan Emerick follows with "The Quixotial Quest Part II," which is a summary of the recommendations of the Standards Committee on GPS Surveys. I hope Mr. Emerick appreciates the fact that we bumped two articles from this issue to incorporate his late submittal. Next is "A Funny Thing Happened on the Way to the Job…" by John Gargis, a Florida surveyor. Gargis regales us with a few funny stories of things that happened on the job, stories I am sure we could all expound upon that are just as funny. We round out the issue with "Monday, Monday" by Andrew Kellie, practicing surveyor and Professor in the Department of Engineering at Murray State University. Professor Kellie relates how quickly what appears to be an easy day can turn on you.

As a final note, please take notice of the "Notice Notice Notice" on page 17. The Legislative Committee has formed a sub-committee to deal with the issue of Recordation of Plats in our fair State. Recordation has become a 'hot-button' issue within our survey community. The plan is an e-mail survey of how the membership feels about this issue. Please take the few minutes required to respond to the questions and let the committee know your feelings. Thank you in advance for your cooperation. As always, it is a pleasure to act as your editor.

THE MISSOURI SURVEYOR

Published quarterly by the
Missouri Society of Professional Surveyors

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President's Message

by Ralph Riggs

This will be my last Presidents message. It has been an honor and a privilege to hold the position of President of the Missouri Society of Professional Surveyors. I could not have worked with a more dedicated group of people as the board of directors, committee chairs, co-chairs and the committee members. Our executive director also makes any presidents' job easier, so many thanks to Sandy Boeckman for her hard work and dedication and keeping me on-track.

The kick-off of the Height Modernization Survey at the State Fair was a huge success. State Land Surveyor Darrell Pratte and the folks at the Land Survey Program have worked hard to bring this project together. The benefits for the State of Missouri will be far reaching as NAVD88 is fully utilized. The fair event included NGS Director Julianna Blackwell, DNR Director Mark Templeton, Paul Rydlund of USGS along with several members of MSPS. We were honored for Governer Jay Nixon to speak and to push the "start" button on the GPS receiver to start the survey. This session included several occupations of first-order vertical control stations by MoDOT personnel in various parts of the state. A special thanks also goes to Chris Wickern who has spent much time and effort to make the State Fair a great promotional event for MSPS.

I would also like to thank the Recording Statute Revision sub-committee for their efforts in trying to bring together the "ayes" and the "nays" on mandatory recording. I truly feel that there is a middle ground position that the membership can support. The Land Survey Program funding emerged at the top legislative priority followed by recording statute revisions and the definition of surveying.

It has been a busy and rewarding year but I think I'm looking forward to attending the past-presidents breakfast and I hope to see everyone at the Annual Meeting at Tan-Tar-A!

Cover: Governor Jay Nixon kicked off the Height Modernization Survey of Missouri Thursday, Aug. 12, during the Missouri State Fair in Sedalia. The same instant Gov. Nixon pushed the button on a global positioning system data collector, surveyors across the state started their Global Positioning System receivers to collect critical elevation data. On back cover Gov. Jay Nixon is flanked by Darrell Pratte, state land surveyor, Land Survey Program Director, Missouri Department of Natural Resources (left); and Mark N. Templeton, Director of the Missouri Department of Natural Resources.

The Description Writer's Toolbox

by Russ Forsberg, PLS 4213 (Retired)

Russ Forsberg retired from Caltrans in 1985 after thirty years of service. During that time he led squads that prepared right-of-way maps and legal descriptions. In 1987 Caltrans called him back, via Dave Goodman, to prepare materials for, and teach, the Caltrans training course "Surveying for Rights of Way".

Virtually everyone has a toolbox full of many different kinds of tools. Unfortunately, too many of us actually only use the screwdriver and the pliers. There are times when those two tools are the right ones to use, but their use in other situations would make a true craftsman shudder. The same concept applies to writing legal descriptions, such as metes and bounds, rectangular surveys system, map reference, and strip descriptions. There are other, less well-known tools in the toolbox, however, that are designed to meet specific needs. Writers should be acquainted with them and understand clearly when and where they should be used.

Surveyors write descriptions to be interpreted by fellow professionals such as title experts, lawyers, judges, other surveyors, etc. The client is interested in the description as well, of course, but rarely understands it. The intent is to describe the parcel in such a way that each of these professionals will agree as to its exact location. If the description is credible, as judged by these fellow professionals, it will rarely end up in court. If, however, others disagree as to what the description actually conveys, the issue may have to be decided in court. It is much easier, less expensive, and certainly less embarrassing to write it in such a way that leaves no doubt as to its intent. In order to do that, the writer must do the following:

- Understand boundary determination principles. If you can't recognize potential problems, you can't deal with them.

- Understand accepted description writing techniques. Your fellow professionals must understand what you are saying and find it credible.

- Understand the correct, legal meaning of words used. In order to do that you need to use the same dictionary the judge uses.

A good writer will have mastered both the science and the art of surveying. The art of surveying helps us to design innovative ways of writing credible descriptions in problem situations.

Sadly, there are many who cling tenaciously to the one or two "tools" they are familiar with. They have a tendency to start at any handy corner on the subject parcel and write a metes and bounds description clockwise around it. That's an ideal way to do it if the parcel is well-monumented and the monuments have good pedigrees, that is, they can be traced back to their source(s), and there is little or no chance of their positions being successfully challenged. If the property lines are uncertain, however, it follows that the basis of bearings in the description and thus, any new line(s) will also be vague. Line Descriptions are a way to deal with this.

Line Descriptions

Assume in Figure 1 that all of the corner and line locations for the Reed parcel are uncertain, but the west line of Lot 1 is known. The shaded portion of the Reed property can be described using a line description beginning at the secure line on the west, then running across the problem area and tying into another secure line on the east. A line description would read:

That portion of the land described in deed to Reed recorded . . . lying southerly of the following described line:

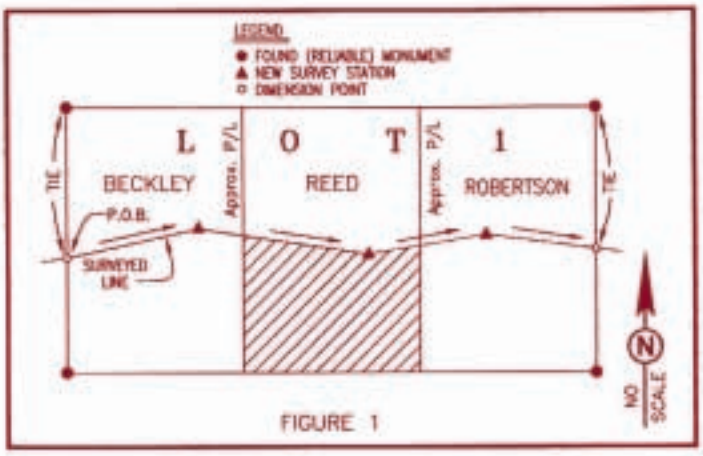


FIGURE 1

Then would follow a description of the new line, beginning at a point on the secure west line of the lot and terminating at a similar point on the east line of the lot. Any portion of the Reed property lying southerly of that line would be conveyed no matter where the east and west property lines happen to be. Angle points in the new line could be monumented with confidence because the line is based on solid evidence. Monuments could not be placed at the intersections of the new line and the uncertain property lines, however, until or unless the true locations of those lines are determined.

Note: If a deed to Reed is cited in the description, make sure it does not include other property that could be interpreted as being southerly of the new line. For instance, the

The Description Writer's Toolbox (continued)

Reed deed may include another parcel a block south of the one in question. In that case, the line description might convey the second parcel as well!

Advantages of Line Descriptions:

1. Great economy if one is writing descriptions for all of the parcels. Once the line is designed and surveyed from one secure line to another, and a traverse calculated to check it for mathematical accuracy, the same line can be used for all of the parcels. Only the preambles of each description would have to be changed.
2. The new line can be located and monumented with confidence, no matter where the property lines happen to be.

Disadvantage Line Descriptions:

1. It does not give a clear word picture of the size and shape of the parcel.
2. In borderline situations where the new "take" line is close to an uncertain property line, it's possible it will convey nothing.

Flexible Metes and Bounds Descriptions

There are times when others insist on a metes and bounds description even though the writer prefers a different type because of uncertain property lines. The answer may be Flexible Metes and Bounds Descriptions, which provide the desired word picture of the area conveyed, yet are still flexible enough so that the new lines can be surveyed. As before, assume in Figure 2 that the corner and line locations for the Reed parcel are uncertain, but the west line of Lot 1 is known. A typical metes and bounds description of the shaded area would create new lines that would be no more certain as to location than the others. However, a conventional metes and bounds description of that area can, just as well, be based on a secure line like the west line of Lot 1, thus:

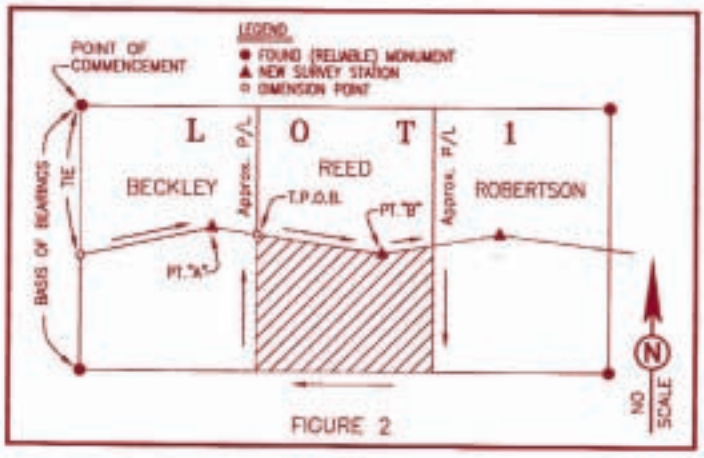


FIGURE 2

The line would commence at the monumented northwest corner of Lot 1 and proceed southerly along the west line of the lot, thus establishing a good basis of bearings. It would then run easterly to the intersection with the west line of the Reed property to the True Point of Beginning (TPOB). That is where the actual conveyance would begin. From there, a conventional metes and bounds description would be written running clockwise around the parcel and closing on the TPOB. If the northerly portion of the Reed property were to be described, the description would be the same up to the intersection with the east line of the Reed property. From there the description would proceed counter-clockwise around the parcel and close to the TPOB. Described in this way, the new line would not be dependent on the location of the existing boundaries.

There is another problem to deal with, however. The TPOB is located on the property line, wherever that is. It follows that the angle point in the new line easterly of the TPOB will "float" with the TPOB unless special language is used to prevent that. One way to prevent that is to use the following language, which begins by describing the new line as it crosses the Beckley parcel:

> *...to a point hereinafter called Point "A"; thence S 85° E, a distance of 25 feet, more or less, to the west line of said Reed property and the True Point of Beginning; thence, continuing S 85° E a distance of 75 feet to a point hereinafter called Point "B", said Point "B" bearing S 85° E a distance of 100 feet from said Point "A"; thence continuing from said Point "B"...*

This technique will set Point "B" at the intended distance from Point "A", yet would allow the TPOB to be placed properly at the intersection with the property line.

Advantages of Flexible Metes and Bounds Descriptions:

1. The client, and others, get a clear word picture of the size and shape of the portion conveyed.
2. The new lines are surveyable, although the points where they intersect property lines cannot be monumented.

Disadvantages of Flexible Metes and Bounds Descriptions:

1. It is difficult to do an adequate mathematical check on the courses, and there may be a number of them, between the Point of Commencement and the True Point of Beginning.

(continued on page 6)

The Description Writer's Toolbox (continued)

Using "Described" versus "Conveyed"

One of the more complex problems confronting surveyors who write descriptions is the question of whether to use "described" or "conveyed" when calling to an existing property line. The resulting locations are sometimes quite different. To illustrate the point, we'll look at a description of the corridor that crosses the Andrus parcel in Figure 3. Looking solely at the vesting deeds would lead one to think that the Wilson parcel has senior rights. In that case both words, described and conveyed, would describe the true east line of Wilson. A look at the chain of title, however, shows that the Andrus parcel is senior. With that in mind, note the effect of the use of the word "conveyed" in the following description:

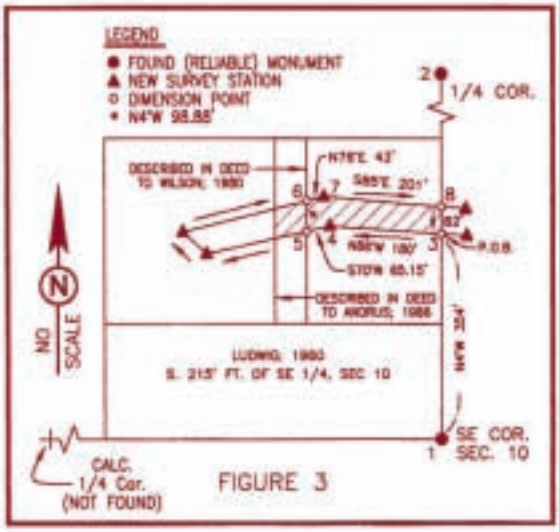


FIGURE 3

That portion of the southeast quarter of the Section 10 described as follows:

Chain of Title
Ludwig Parcel
Acquired - 1960
Andrus Parcel
Acquired by Ludwig - 1960
Ludwig to Spillane - 1970
Spillane to Andrus - 1986
Wilson Parcel
Acquired by Ludwig - 1960
Ludwig to Wilson - 1980

Beginning at a point on the east line of said southeast quarter that bears N 4° W a distance of 354 feet from the southeast corner of said Section 10; thence N 86° W a distance of 180 feet; thence S 70° W a distance of 65.15 feet to the east line of the land conveyed to Wilson by deed recorded - 1980; thence along last said east line, N 4° a distance of 98.88 feet; thence N 76° E a distance of 43 feet; thence S 85° E a distance of 201 feet to said east line of said southeast quarter; thence along last said east line, S 4° E a distance of 82 feet to the Point of Beginning.

The sample description places the POB and the basis of bearings on a line that appears secure, provided that the monuments at Points 1 and 2 have good pedigrees.

The description establishes the location of Points 3 and 4 in a manner that should satisfy everyone, but the rest of the description has problems, and would surely arouse the interest of our fellow professionals. We might imagine the following conversation:

Surveyor: I'm glad the writer put bearings and distances in there so I'll know where to put Points 5 and 6.

Title Expert: I'm glad the winter used calls "to" and "along" that property line just in case the line is really in a different location.

The Judge: That's an interesting thought. The surveyor who wrote it may well be able to tell us what was "described", but I'll decide what was "conveyed". I wonder if the writer really understands the difference.

Surveyor: Now you've got me worried! If there's a question about the true location of Points 5 and 6, we probably can't monument Points 7 and 8 either.

Title Expert and The Judge: That's right. In effect there is a new basis of bearings at 5 - 6.

Surveyor: Great! But, given the nature of the parcel, how could the writer have done it any better?

Good question! It's clear that the Wilson deed "conveyed" to a different line than the one "described". It's also clear that the former is the line to which our sample description would convey, assuming there are no other legal problems. What does this do to the rest of the description? Some may argue that the original basis of bearings would carry through the entire description, and thus, Points 7 and 8 would be placed where intended. However, there is still the question of exactly what portion of the area between the "described" and "conveyed" lines would be conveyed by the sample description. If the description had been written "to and along the described line", the courses that followed would be placed where the writer intended, but it would be unclear exactly what portion of the gap would be conveyed. The description, as written, is capable of more than one interpretation and that is a conclusion that a good writer finds intolerable.

The corridor shown in Figure 3 crosses one or more uncertain property lines on each of the three parcels. Here are some "tools" that will produce corridor boundaries that are surveyable, even though the property lines remain uncertain.

The Description Writer's Toolbox (continued)

Description of the Andrus Parcel by the Inclusive Method

The preamble would read:

That portion of the southeast quarter of Section 10 —, conveyed to Andrus by deed - 1986, included within the following described parcel:

Then would follow a description of the portion designated in Figure 3 by the clockwise arrows, using the southeast corner of Section 10 as the point of the commencement (POC) and the POB as shown in the figure. The description would thereby be based on the secure east line of the section.

Description of the Andrus Parcel by the Exception Method

This is similar to the inclusive method, but worded a little differently. The preamble would say:

That portion of the southeast quarter of Section 10 — described as follows:

As above, then would follow a description of the portion designated in Figure 3 by the clockwise arrows, using the same POC and POB. After that:

EXCEPTING therefrom, that portion conveyed to Wilson by deed—1980.

Both techniques used the word "conveyed" because the intent is to acquire all of the corridor that falls within the Andrus ownership, even though a court may have to decide where the property line is. Note that in the case of the deed to Andrus the "described" and the "conveyed" lines are the same. That is not true of the Wilson parcel.

Description of the Wilson Parcel by the Inclusive Method

Since the south line of the Wilson parcel is, in effect, the north line of the south 215 feet of the southeast quarter, it is dependent on the true location of the south quarter corner of the section, which was not found. The south line of all three parcels would be affected if a later survey discovered the true location of the quarter corner. The writer cannot afford to base new boundaries on lines like that, yet he or she must write descriptions that will convey to them. Remember that calling along the south line of the Wilson parcel would establish a second basis of bearings and affect the location of the courses that follow. There are, however, tools that can be used to safely describe the corridor requirements from this parcel.

Use a preamble that says:

That portion of the southeast quarter of Section 10 — conveyed to Wilson by deed —1980, included within the following described parcel:

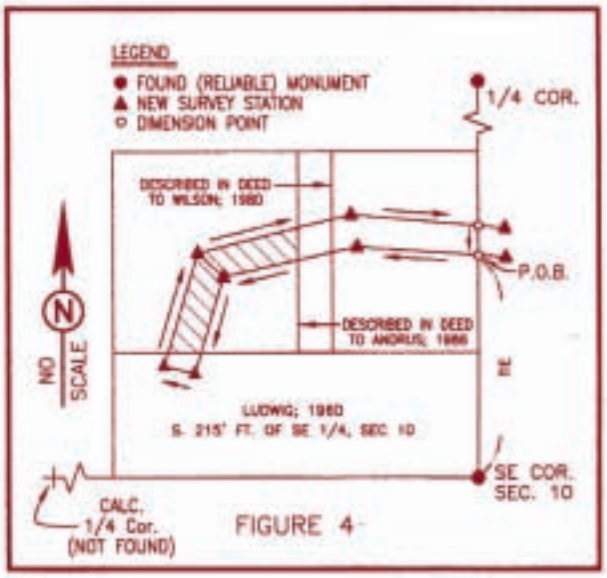


FIGURE 4

Then would follow a description of that portion of the corridor designated by clockwise in Figure 4. Again, by using the southeast corner of Section 10 as the POC, and the POB as shown in the Figure, the description would be based on the secure east line of the section. This would convey the shaded area in Figure 4.

Description of the Wilson Parcel by the Exception Method

This is similar to the inclusive method, but worded a little differently. The preamble would read:

That portion of the southeast quarter of Section 10 - described as follows:

Then would follow a description of the portion designated by clockwise arrows, based as before, on the east line of the section. After that:

EXCEPTING therefrom, that portion conveyed to Andrus by deed—1986.

ALSO EXCEPTING therefrom that portion lying within the south 215 feet of said southeast quarter.

This too would convey the shaded are.

(continued on page 10)

MO Colleges/Universities Where Land Surveying Coursework is Available

The following list will be updated quarterly as new information becomes available.

Longview Community College - Lee's Summit, Missouri
Contact: David Gann, PLS, Program Coordinator/Instructor - Land Surveying MCC - Longview, MEP Division
Longview Community College
Science and Technology Bldg.
500 SW Longview Road
Lee's Summit, Missouri 64081-2105
816-672-2336; Fax 816-672-2034; Cell 816-803-9179

Florissant Community College - St. Louis, Missouri
Contact: Ashok Agrawal
Florissant Community College
3400 Pershall Road
St. Louis, Missouri 63135
314-595-4535

Missouri State University - Springfield, Missouri
Contact: Thomas G. Plymate
Southwest Missouri State University
901 So. National
Springfield, Missouri 65804-0089
417-836-5800

Mineral Area College - Flat River, Missouri
Contact: Jim Hrouda
Mineral Area College
P.O. Box 1000
Park Hills, Missouri 63601
573-431-4593, ext. 309

Missouri Western State University - St. Joseph, Missouri
Contact: Department of Engineering Technology
Missouri Western State University
Wilson Hall 193
4525 Downs Drive
St. Joseph, MO 64507
816-271-5820
www.missouriwestern.edu/EngTech/

St. Louis Community College at Florissant Valley
Contact: Norman R. Brown
St. Louis Community College at Florissant Valley
3400 Pershall Road
St. Louis, Missouri 63135-1499
314-595-4306

Three Rivers Communitiy College - Poplar Bluff, Missouri
Contact: Larry Kimbrow, Associate Dean
Ron Rains, Faculty
Three Rivers Community College
2080 Three Rivers Blvd.
Poplar Bluff, Missouri 63901
573-840-9689 or -9683
877-TRY-TRCC (toll free)

Missouri University of Science and Technology - Rolla, Missouri
Contact: Dr. Richard L. Elgin, PLS, PE
Adjunct Professor
Department of Civil Engineering
1401 North Pine Street
211 Butler-Carlton Hall
Rolla, Missouri 65409-0030
573-364-6362
elgin@mst.edu

University of Missouri-Columbia, Missouri
Contact: Lois Tolson
University of Missouri-Columbia
W1025 Engineering Bldg. East
Columbia, Missouri 65211
573-882-4377

Missouri Southern State College - Joplin, Missouri
Contact: Dr. Tia Strait
School of Technology
3950 E. Newman Rd.
Joplin, MO 64801-1595
1-800-606-MSSC or 1-417-782-MSSC

The Description Writer's Toolbox (continued)

Double Line Description of the Wilson Parcel

The preamble would read:

That portion of the southeast quarter of Section 10 - conveyed to Wilson lying southerly of the following described line:

Then would follow a description of the northerly line of the corridor shown in Figure 5, based as before, on the east line of the section. After that:

EXCEPTING therefrom, that portion, lying southerly of the following described line:

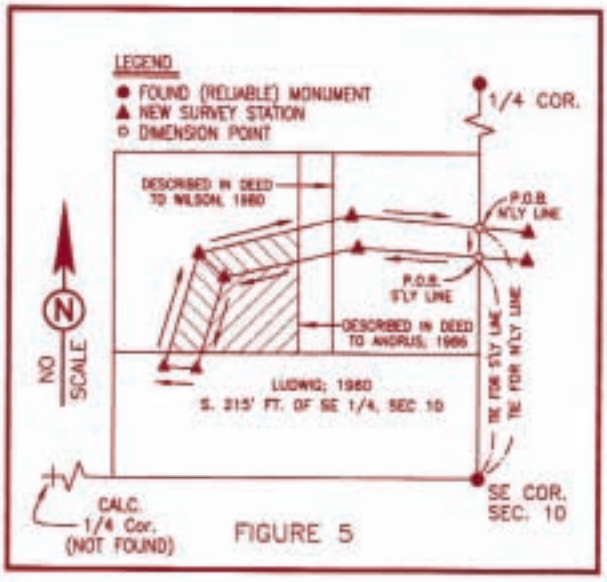


FIGURE 5

Then would follow a description of the southerly line of the corridor shown in Figure 5, based as before, on the east line of the section. The first portion of the description would include the shaded portion inside the corridor. The exception would eliminate the shaded area in the southeast corner of the Wilson parcel.

Description of the Ludwig Parcel by the Inclusive Method

Both the north and south lines of this parcel are in doubt, so again it is necessary to go outside the parcel to get a good basis of bearings. An ideal tool to use here is the inclusive method. It might read like this:

That portion of the south 215 feet of the southeast quarter of Section 10 — included within the following described parcel:

Then would follow a description of the portion designated by clockwise arrows in Figure 6, based as before on the east line of the section. This would convey the shaded area.

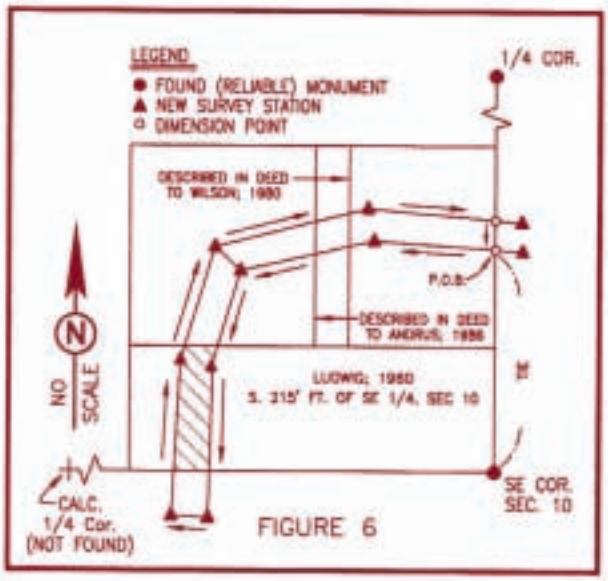


FIGURE 6

Characteristics of a Good Property Description

There are a great many descriptions on record that are virtually impossible to interpret. The challenge for the description writer is to recognize potential problems and then find a technique that will do the job no matter what a new survey may show. If we are successful, years later, surveyors, title experts, and members of the legal profession looking at one of our descriptions will scratch their heads and say. "Whoever wrote this one was a real pro!"

Let's pause for a moment and review some basic concepts. A good land description must be:

- Capable of only one interpretation
- Short, but clear
- Surveyable
- Credible or insurable
- Legal

The Writer's Frame of Mind

Write as though three people are looking over your shoulder: the surveyor, the title expert, and the judge. In fact there is a fourth, and that is the conniving crook. He is especially dangerous, because if there is an error in your work that he can use to his advantage, he will find it.

The key is to find a way to describe free line calls so that will agree on how and where to place them in the field. That means basing all free line calls on the strongest possible evidence and not compromising them by placing them just

Letter to Editor

by Phil Corlew, PLS 1122

I would be remiss if I did not contact you to tell you what an outstanding publication the entire newsletter is, but the June 2010 edition was perhaps the best. The articles were intellectually stimulating and worthy of a lot more attention than I had time to give them — and I gave them quite a bit.

These are not about fuzzy theoretical stuff, these are about real surveyors with real problems to solve and who made real mistakes without meaning to do so, or from stupidity. The theoretical underpinning was tied firmly to the practical. I should read these once a month or once every two weeks until I fully understand every nuance. I probably won't but I should.

Thanks for putting together a fine publication.

The Description Writer's Toolbox (continued)

after calls along title lines whose location is uncertain. There are seven key questions that need to be answered before the actual writing begins. They are:

1. What type of description is best? There are a number of tools available. Use the best one.
2. What type of description is best for the adjoining parcels? You may have to write one of them next week.
3. What point is best for the POB? Is it monumented? How good is the monument's pedigree?
4. Where should the basis of bearings be established?
5. Should the description run clockwise or counter-clockwise?
6. What calls should be made? Title experts say that this is where surveyors are likely to make mistakes.
7. What clauses need to be added?

An interesting and helpful exercise is to change the first question to read, "How many different ways can this parcel be described?" It expands our horizons and gets us in the habit of thinking creatively. It may even lead to the invention of a new tool to add to the toolbox. There are infinite possibilities, and most professionals welcome creative effort as long as the product is surveyable, credible, and legally sound. The challenge is to become so proficient in the art of surveying that others will agree that our descriptions are indeed capable of only one interpretation.

Administrative support in the development of this article by Rob McMillan, Bill Telling, Jill Van Houten, and John Wilusz.

Additional instructional materials by Russ Forsberg can be found on the Caltrans Office of Land Surveys website:

http://www.dot.ca.gov/hq/row/landsurveys/Study_material/Foresberg/

http://www.dot.ca.gov/hq/row/landsurveys/LSITWorkbook/15.pdf

http://www.dot.ca.gov/hq/row/landsurveys/LSITWorkbook/WorkbookTOC.html

Reprinted from *California Surveyor*, Sp. 2010

Write as though three people are looking over your shoulder: the surveyor, the title expert, and the judge. In fact there is a fourth, and that is the conniving crook.

Joseph Clayton, GIS Committee Co-chair, and Mo McCullough, Legislative Consultant, represented MSPS at the bill signing in the Governor's office. House Bill numbers 1692, 1209, 1405, 1499, 1535 and 1811 were all contained in the bill that was signed by Governor Jay Nixon on July 13, 2010. This bill included the cadastral mapping legislation as well as the lien language.

What's the Big Idea?

by Chris Wickern, LS

Ideas — We all have them. Some of them are BIG ideas, others are small, and many are fleeting. Most are unrealized, never discussed, and never acted upon. Occasionally, a good idea comes along. It's a big idea, and the first inclination is to say 'no… it's too big'. Resources, time, coordination and dedication to achieve the goals expressed in the idea are unrealistic and can't be done. This is what Land Surveyor Sharon Herman brought to the State Fair Committee earlier this year. Sharon's fellow Committee members said almost in unison, 'you want to do what?!?' She continued presenting her idea, and it was big. BUT it was also something our Society *could* achieve; all we need is the will to do it. Sharon's idea was to get Surveyors activating and collecting data in all 114 counties. This would be publicized, documented and submitted to the Guinness Book of World Records for possible inclusion.

Her BIG idea was big, but achievable. Good ideas discussed with others sometimes become better ideas. Darrell Pratte stepped forward and said, 'you know, if we're going to go BIG, why don't we make it worthwhile and benefit the public', and a bigger idea was born.

THE idea turned into a greatly needed Height Modernization Survey across our State. Juliana Blackwell is the Director of the National Geodetic Survey. Her comments about the effort are, "The collaborative state-wide Height Modernization survey will collect much-needed accurate and up-to-date heights on benchmarks near stream gages throughout the state. This survey will provide accurate, consistent heights on a common datum which are essential for measuring and monitoring levees, mapping flood plains, and improving inundation models. I commend the effort of the Missouri Department of Natural Resource's Land Survey Program, the Missouri Society of Professional Surveyors, and the numerous state and federal agencies who are participating in this campaign."

On August 12th at our MSPS booth at the Fair, Governor Nixon officially started the Height Modernization Survey for Missouri. State Land Surveyor, Darrell Pratte, recalls the events: "Just thought I would share my thoughts on the opening day activities at the Missouri State Fair… It was hot, to state the obvious, it was really hot. At 10:00 AM the activities started with addresses from several government agency leaders including Directors of Departments of Agriculture and Natural Resources. The keynote address was given by Governor Nixon and by 10:30 the event was over.

About 50 feet from the speakers platform is Missouri Geographic Reference System Station James Williams. This mark was set several years ago on the State Fairgrounds by the Land Survey Program in Honor of Dr. James H. Williams, long time Director of the Missouri Division of Geology and Land Survey. It was placed with an eye more toward public visibility than GPS satellite visibility. The obstruction diagram shows a large Cottonwood Tree and the Women's Building blocking most of the sky. The diagram does not show a large white side panel of the MSPS pavilion being within inches of the GPS antenna.

After the Governor answered a few questions from the press he made his way to the MSPS booth and was introduced to the MSPS members in attendance as well as surveyors and geodesists from state and federal agencies.

As most of you know the purpose of the Governor's visit to the MSPS booth was to begin a Height Modernization Survey. Surveyors and their staff from both the public and private sectors are participating in this most important endeavor. To my surprise, and I think the surprise of most of the people in attendance, the Governor had a knowledgeable understanding of what we are doing and why

What's the Big Idea?

it is important to Missouri to have high quality surveys. He understands the relationship between accurate stream gauge reporting, accurate mapping, knowing the height of the levy system, and flood predictions. He realizes we cannot afford to have stream gauges with scaled heights trying to determine if a levy will be topped that was built from a bench mark based on NAVD88 with ground elevations based on 1929 datum. The cost in human lives and property damage is just to high.

After the Governor made his remarks he came back and spoke with the surveyors. Gov. Nixon related a story from when he was a young man and spent a summer working on a construction staking survey crew.

Along with the Governor, MSPS President Ralph Riggs and Ms. Juliana Blackwell, Director of NGS, spoke to the gathering about the need for accurate survey data and the need for cooperation from public agencies and private companies to gather the data to make these surveys a

reality. Mr. Pratte then stated, "This day came off better than I ever imagined, ever could hope, a huge success." Two years ago I would have agreed with Mr. Pratte's comment. However, that was before I worked with my fellow MSPS members on last years Fair and subsequent efforts to educate the public.

I do not have the words to describe the efforts of many individuals who, in a few short weeks, took this from a good idea to the Director of the National Geodetic Survey introducing Governor Nixon, and the Governor 'Starting' the Survey. A debt of gratitude is owed to Sharon, Darrell, Dan Govero, Rick Reese, and many others who worked so diligently to make this happen.

In some ways, this was the more simple part of the equation. The other part of the equation was us, the members of the Missouri Society of Professional Surveyors. Our members are a source of constant amazement. The Surveyors who took part in this are working in every nook and cranny in the State. It is you all who truly made this

happen. So, if you are a Surveyor reading this who took part in this effort; reach around and pat yourself on the back, please accept a hearty thank you, and know it was a job well done. For those reading who did not have the opportunity to participate, put your thinking caps on, it's going to be tough to beat Sharon and Darrell's BIG IDEA this year, but the gauntlet has been laid.

Future Surveyors

by Chris Wickern, PLS

August 7th, 2010 on the campus of Central Methodist University, Fayette, Missouri, was the location for the 100th anniversary of Scouting. 1,400 Scouts, Scout Masters, Troop leaders, and parents camped for a weekend long celebration. Scouts were there in all ages and sizes from across the State. It has been reported that our median age as Missouri Surveyors is about 57. These Scouts had a median age that doesn't include shaving cream as a part of their daily activity.

Opportunity was knocking and it was answered by Tim Reed, PLS at Engineering Surveys & Services. The State Headquarters for the Scouts is located in Columbia, next door to Tim's office. Tim worked a day at the State Fair last year, and is also an Eagle Scout. His experience at the Fair with the information booth, displays, and interaction with the public let him know a similar effort with the Scouts could have an influence on these young adults. He coordinated with the Scouts, asked if we could incorporate the booth into their activities, and offer assistance. Eventually, Tim was joined in the effort by Jim Herre, Indian Creek Surveying (also an Eagle Scout); Fred Carroz, Engineering Surveys and Services; Don Bormann, Bormann Surveying; David Butcher, Crocket Engineering, Chris Wickern, Engineering Surveys and Services, and John Cole, Beyling Surveying. We organized several events for the Scouts.

Tim and Fred planned, and set up a compass course. Jim set locations and laid out a geocaching course, and we also ran a Frisbee golf event. Tim reported from the event area that, "There were several groups that were determined to figure out the compass course, and they ran several different routes for an hour or so. Several of the young Scout District Executives were very interested and tried their luck on the compass course. Several of the leaders whipped out their I-Phones (or whatever you call them) and pulled up their compass applications. I told them as soon as the batteries wore out, they would need to use the old, reliable compass… Jim did a fantastic job of integrating geocaching with Surveying, and he generated a lot of interest. Many of the Scouts and Leaders indicated that they were going to check out the geocaching web site, and start looking for some on their own."

One Troop Leader said, "I feel it was a smashing success and enjoyed by all of the scouts and adult leaders in attendance." Efforts like these will start bringing the median age of land surveyors down over time.

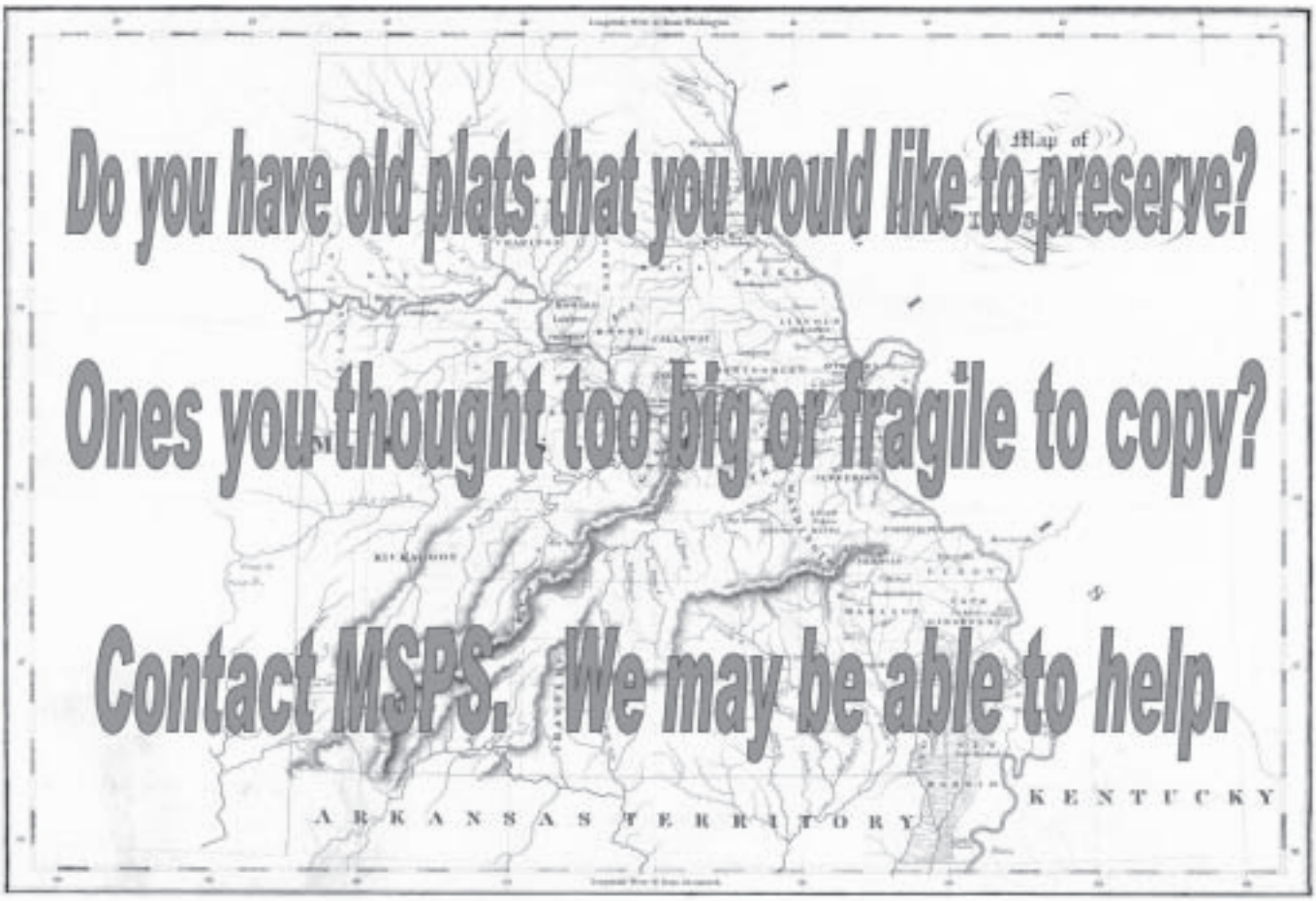
NOTICE NOTICE NOTICE

WHAT ARE YOU FOR — WHAT ARE YOU AGAINST

During the MSPS Legislative Committee meeting on July 8, 2010 a sub-committee addressing the issue of plat recording was formed. This group has a "For" and "Against" aspect and is composed of an equal number of surveyors on each side of this issue with; a "neutral" chairman

At a July 27th meeting of the sub-committee in Jefferson City, there was a mutual agreement by this group to be truly representative of full membership. The need for a mandate of direction from general membership was affirmed. With the goal of representing all MSPS members this group has identified ten prevailing concerns regarding recording and open access of surveying records. These concerns will be addressed by considering the answers to a corresponding ten questions answered by the rank and file members of MSPS. In this manner MSPS members will provide "direction" to the sub-committee.

Join in leading this issue! Share your ideas and thoughts on access to surveying records. These questions will be coming to you via email in the form of a "Survey Monkey" questionnaire. Please review, consider and respond. Your answers and opinions will influence this group's action. It will shape the legislative agenda of MSPS.



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Nominations for 2010 Officers

President

Mark Nolte is the owner of Nolte Land Surveying in Higginsville, Missouri. He graduated from the University of Missouri in 1981 and received his registration in 1992. He has been the County Surveyor of Lafayette County since 1992 as well. The majority of the work he performs is Sectional work in the rural areas of Lafayette and Saline Counties. Mark is married to Carol. They have a 16-year-old daughter, Lily.

President-Elect
Joe Carrow

Mr. Carrow is a Professional Surveyor at Zahner & Associates, Inc., in Perryville, Missouri. He became licensed in 1998 and has been an employee for many years. From 1994 to 1996 he worked for the Bureau of Land Management on projects in Missouri, Illinois, Minnesota and Texas. He has a Bachelor of Science in Industrial Management and a Bachelor of Science in Cartography/Surveying from Southwest Missouri State University. Joe resides in Fredericktown, Missouri with wife Kelly, and sons Jacob, Noah and Reed, where they raise cattle and Quarter horses.

Vice President
Sharon C. Herman

Sharon is the Office Manager at Govero Land Services, Inc. She has worked in the surveying profession for 15 years and obtained her Professional Land Surveyors License in 2004. Sharon graduated Magna Cum Laude from Jefferson College, with an Associate of Applied Science Degree in Architectural Drafting and Construction Technology.

She has been a member of MSPS for several years and is currently the Co-Chair of the Public Relations / Sales Committee. In the past Sharon has served as a mentor at the local community college for students pursuing a career in the surveying / engineering fields.

Secretary-Treasurer
Robert L. Ubben, PLS

Robert is an Associate at Affinis Corp., located in Overland Park, Kansas. He joined Affinis in 1988 and has been in charge of all survey department services for nearly a decade. Licensed in Missouri in 1995 and in Kansas in 1997, Robert works primarily in the Kansas City Metropolitan area. He has an Associate of Science in Land Surveying from Longview Community College, located in Lee's Summit, Missouri.

Robert is a member of the Kansas Society of Land Surveyors and the Missouri Society of Professional Land Surveyors. Robert has worked as a part time instructor teaching Legal Aspects of Surveying at Longview Community College during fall semesters. Robert and his wife Amanda have two children and live in Raytown, Missouri. Robert and Amanda enjoy spending time with their children at high school sporting events.

Secretary-Treasurer
Norman Ellerbrock

Norman currently works for Likes Land Surveyors in Barry, IL. Norm started his surveying career in 1989 in Dayton, Ohio. He received his Missouri P.L.S. license in 2001 and his Illinois license in 1995.

Norm is a member of the Illinois Professional Land Surveyors Association and is an active member of the Sangamon Valley Chapter. He is currently on the Board of Directors for the Missouri Society of Professional Surveyors. He is the chairman for the Handbook committee and is also on the history and legislative committees. Norm is the current President of the Hannibal Early Bird Kiwanis and is incoming Lieutenant Governor.

Norm lives in Palmyra, Missouri with his wife Suzanne. They have 3 grown children, Breeana, Ryan and Emily. Norm and Suzanne are members of Mission Baptist Church.

Nominations for 2010 Board of Directors

Gerald Bader

Gerald started in the surveying and mapping field in March of 1981. He was the supervisor in charge of the statewide tax reassessment maps for several counties within the state of Missouri, and two counties in Kansas. In 1986, Gerald started full time in the field as a survey technician, working up to instrument person and then to survey supervisor. In the fall of 1991, he continued his education by attending classes at St. Louis Community College—Florissant Valley and through the University of Missouri—Rolla. He received his license from the State of Missouri in January of 1996.

Bader Land Surveying, Inc. began operations in April of 1996. In the fall of 1996, Gerald was elected as Ste. Genevieve County Surveyor and is presently serving his 4th term. Gerald is an advocate for the protection of the Public Land Survey System and has been participating in DNR's County Surveyor Cooperative Remonumentation Program and the Private Surveyor Re-monumentation Program since 1996. Gerald has been the surveyor for the City of Ste. Genevieve since 1996. In addition, Gerald is active in several local civic organizations. His membership and leadership positions in professional organizations include: Missouri Society of Professional Surveyors, previously serving on the County Surveyors committee; Missouri Association of County Surveyors, serving on the Board of Directors from 2010 to 2011 and Past President from 2004-2005. Gerald coordinated MACS re-monumentation of the Tri-State corner in 2004 and the PK Robbins Memorial Bench in 2006. Gerald is the President of the St. Agnes Athletic Assoc. and coaches basketball for the school. He also coaches his son's traveling baseball team.

Gerald and his wife, Denise have two children, Brett; age 14 and Alina; age 7. They live in Ste. Genevieve. He appreciates the nomination and looks forward to serving MSPS and the surveying society.

Robert Ross

Robert is the Field Surveys (Cadastral and Geodetic) Section Chief at the Land Survey Program in Rolla. He attended Southwest Missouri State University (now MSU) in Springfield, Mo., and received a Bachelor of Science degree in Cartographic Sciences, with an emphasis in Land Surveying.

As Section Chief, Robert works with program staff and private surveyors in resolving PLSS issues, in addition to the planning and execution of geodetic projects. Prior to the recent financial issues of the Land Survey Program, he was also responsible for boundary project contracts with private surveyors, and the Private and County Surveyor Cooperative Remonumentation programs.

An active member of MSPS, he currently serves on the Legislative, Standards, MoDOT and GIS/Vision 21 committees. Robert also presents the Land Survey Corners portion of the Minimum Standards meeting in July, and at other functions as available.

Away from work, Robert enjoys spending time with his wife Chrissy, and two boys; Rylan (21 mths.) and Carson (7 mths.). Together they operate Midwest Benchrest, which is a 600 & 1000 yard shooting range for competitions which are sanctioned by a national organization. They also enjoy boating, swimming, and fishing on the Current River whenever they have the opportunity.

Jim Mathis

Jim Mathis is the owner and operator of a surveying/engineering business which specializes in the retracement of original government surveys. Licensed as a Professional Land Surveyor in 1978, he has been self employed for 30 years. From 1998 to 2006 he was a member of the Land Surveying Division of the Missouri Board for Architects, Engineers, Land Surveyors, and Landscape Architects. He is a graduate engineer from the University of Missouri, Columbia, where in 2003 he was inducted into the Academy of Distinguished Alumni. He has authored several articles on the history of Missouri surveys and has taught many classes on Minimum Standards and ethics for the Missouri Society of Professional Surveyors.

Stan Emerick

Stan resides in Chesterfield with his wife Jo. He has been a professional land surveyor and a member of MSPS for more than twenty years. He is currently licensed in three states. He serves as chairman of the Missouri Department of Natural Resources Land Survey Advisory Committee and the MSPS History Committee and contributes articles to the Missouri Surveyor.

How to Turn Recession Into Opportunity

by Wayne Rivers

The last twenty years have largely been good — if not great — for most family and closely held business owners. There was a rough patch in 1991, and things were soft after September 11, 2001, but for the most part businesses have seen plenty of opportunities to build their sales and profits over the last twenty years.

However, the economic picture might be changing a bit just now. The housing market is soft, gasoline prices are high, and politicians and the media are referring to the economic slowdown as a full blown "crisis." The contentious Democratic primary and the November elections created another element of economic uncertainty; how will the new presidential administration and the new Congress react to our challenges, and how will this affect the economy? The press may be overstating the current economic woes, but with consumer confidence down and the media's focus on bad business news, today's economy definitely is more challenging than it has been in some time.

Because economic times have been so good for the last twenty years, many of today's family business owners have never really been through a prolonged slump. They have no direct experience upon which to fall back, no model of what to do first, second, or third in challenging economic conditions. Family business owners typically aren't the types to panic, but most are the kinds of people who like to have a clearly defined track to run on rather than improvising and having to develop new plays for the playbook.

What should family business leaders do in a recession? Where should they focus their time and attention to make their companies stronger and to weather the storm profitably?

The Three Focus Areas

1. Get the numbers you need to make intelligent decisions.

The first reaction for many business owners during soft economic periods is to cut, cut, and cut some more. They focus on slashing expenses across the board. The thinking is if the top line (revenue) is flat or going down, they better reduce the expense line even faster so they can stay in the black. This is a logical reaction, but it's rather simplistic. The entrepreneurial way of cutting expenses is like taking a meat cleaver to the problem when the reality is that a scalpel is the most appropriate tool. But how do operators really know whether they're cutting only fat and not muscle?

Entrepreneurial instincts, experience, and gut feelings go a long way, but are no substitute for factual data. Most family business owners don't have or haven't fully developed their profitability and efficiency ratios and metrics.

For example, they don't know how much revenue or profit they produce per employee or per unit, and they don't know what these figures should be. They don't know what type of jobs have historically produced their greatest margins. They don't know exactly which customers have in the past created the greatest opportunities. They don't know honestly what type of projects their executives or project managers most relish taking on. They don't have good benchmarking data which compares their financial and production ratios to other businesses in their industry. Some family business owners don't have the best internal or external accounting (we know what you're thinking, "my CPA is one of the best." You might be surprised.

Why is it that business owners are willing to shop for the best deals on equipment or health insurance, but not willing to shop professional services competitively from time to time?).

It's not unusual to find a family business owner whose financials are produced months after the close a year end and who don't get vital financial data in a timely way. Many family business owners have poor cost accounting, and they can't really gauge where they are on a given product or project on a given date. To most, the numbers crunching and accounting expertise entrepreneurs have to accumulate over the years is a necessary evil.

However, the most financially astute and analytical family business owners — the ones who know the answers to the questions above at a moment's notice — are the ones who tend to make the most money over time. Having accurate data at your fingertips is essential if you're faced with having to cut expenses.

It's also important to make sure you're not eating your seed corn in combating today's economic softness. One of the risks that family business managers face is that they'll take

How to Turn Recession Into Opportunity (continued)

on low margin jobs, customers, or projects outside their specialty niche during a recession in order to keep their employees working and to sustain revenue. However, there is no clanging bell that rings when the recession is over; therefore, some are stuck with low margin, low payoff work after a recovery has gotten well under way. Competitors will be doing higher profit work on new opportunities that come available, and the ones who reacted to the recession unintelligently are stuck watching the recovery train leave the station.

Case Study: correctly managing the numbers

A Louisiana contractor joined a peer review group in order to engage in discussions about best practices. When the group came to audit his company's performance, they made a couple of sweeping recommendations. First, they recommended that the company restructure from one large conglomerate into four distinct divisions. Previously, the entire business was managed by one executive. Once the company was separated into four divisions (asphalt, concrete paving, utility, and building), each division had its own manager. This had the effect of allowing everyone to specialize and focus more narrowly on their specific strategic and day-to-day duties. It also had the effect of freeing up the chief executive from managing projects and finances to managing managers, a much higher payoff activity for him.

> ***Entrepreneurial instincts, experience, and gut feelings go a long way, but are no substitute for factual data.***

Second, the group recommended that the company seek a young, talented CPA to come into the business as CFO. That had two positive effects. First, it allowed the owner's daughter to shift her focus away from bookkeeping and financial management to begin learning the outside part of the business, better understand project management, and undertake a training and development curriculum which is part of the company's succession plan. The other benefit was the new CFO improved accounting management. Due to better precision, timelines, and accuracy, the improved system allowed the company to bring a scalpel approach to cost cutting.

Best of all, the new CFO found that the company had overpaid sales tax on some projects in previous years. She filed a corrected tax return, and the refund to the company was enough to cover her compensation for two years.

2. Get the wrong people OFF your bus!

One of the great opportunities that a recession presents is to evaluate your workplace from top to bottom. For years The Family Business Institute has been preaching the gospel of "getting the right people on your bus"; that is, building rigorous HR systems for developing job descriptions, recruiting the right kind of people, hiring them through a team, highly regimented process, and retaining them over time with excellent compensation, incentive benefits, and evaluations. A corollary to getting the right people on your bus is to get the wrong people off.

Developing HR systems is certainly not what attracted most entrepreneurs into the business world. However, the fact remains that once a company gets beyond a certain size, it outgrows the ability of any one individual to oversee all aspects. That requires the business to bring in outside talent.

Since most family businesses don't have a well developed HR system in place, there is constant fear and loathing that an employee might leave and create a hole in the organization which the executive has to scramble to fill.

It's an employee market right now; in some industries, talented employees can almost name their compensation. Without being too coarse, the HR system for many family businesses is to place a help wanted ad, interview several applicants, give the least offensive applicant a drug test, hope he passes, and get the position filled as quickly as possible. Then the executive breathes a sigh of relief and says. "I'm glad that's over, now I can go back to all of the things I need to do." One of the things most family business executives sorely need to do is develop their talent. In the long run, this factor more than any other will determine how successful your company can be and whether or not you'll have a decent quality of life.

Here is an exercise. Evaluate your employees in a very simple way. Ask yourself if the employee came to you today and applied for his or her current job, would you enthusiastically rehire them for the position? What about three to five years from now — would you hire them then? This is very telling. For example, you may have a 65 year old estimator who's doing a great job right now, and you're very pleased with him. But the second question — the question about five years from now — will cause you to have to rethink your answer. While he is doing a great job today, you're not sure you'll be able to count on him five years in the future. For those who aren't doing a good job, and for those whom you wouldn't gleefully rehire for their current jobs, you have a bigger problem. These people don't belong on your bus, and you have to figure out what to do about them — soon!

(continued on page 24)

How to Turn Recession Into Opportunity (continued)

Case Study: resignation = opportunity

A North Carolina service business director came to us in a panic. His general manager had tendered his resignation and would be leaving in the next month for a bigger company and more money. The departure put several high profile initiatives at risk. The entrepreneur and his advisors didn't know where to turn.

Within a few days we had convened a meeting and organized a process for getting new talent on board. The process produced over seventy applications. Most of the applicants were patently unqualified, but the beauty of getting seventy applications is that the number of highly qualified applicants was substantial. Among the applicants who were qualified, we narrowed the search down to the top ten, made further cuts and further evaluations using psychometric testing, rigorous group interviewing, homework assignments which had to be completed and turned in by a deadline, and other assessment methodologies. While the process normally takes 90 to 120 days to fully implement, this client wanted faster implementation (about 60 days), and we were able to bring the project in on time and on budget. The manager the company hired is still on board and has exceeded expectations.

Here's the telling part of the story. The same executive called within six months of hiring the new general manager. Another key employee was leaving. The entrepreneur's attitude upon receiving news of this departure was radically different from before. He said "I just got word that John Doe is leaving. This is a real opportunity for us." What a turn around! The entrepreneur went from panic and consternation to an air of quiet confidence and opportunity seeking.

The simple difference in the two departures was having a solid hiring program, a track to run on, and knowing exactly how to execute steps A-Z. We moved confidently through the HR system with the executive and his advisors, and the second hire, a better team player and a more competent employee, is also still on board and is performing at a very high level.

Getting the wrong people off your bus opens one or two opportunity doors for you. Either you don't ultimately need and won't replace that employee, and so you'll create direct dollar-for-dollar expense savings, or you'll be able to bring in a more talented employee, and you'll see the work quality and productivity go up.

A Virginia company recently undertook the first layoffs in their history. The executive team approached the force reduction with some concern. However, the results have been surprising.

The CEO, Mike Harrington, said "Three things happened in a week's time. The sun kept rising, morale went up, and production went up." Mike's discovery was that poor employees "chill" the others. Once the low performers and complainers were gone, the other employees felt and performed better in their jobs. The real reason to get lean is to push higher morale and drive higher productivity; the recession is simply an opportunity point to pursue those dual objectives.

3. Get real about how you utilize your time.

A CEO was struggling while attending to all the duties that fell his way during a typical work week. When we reviewed how he spent his time, we found he had his hand in almost every aspect of the company's operations. Alarmingly we found that the routine, everyday, low payoff activities which consumed him had crowded out the high payoff opportunities he knew he should be pursuing. For example, he was spending very little if any time on business development, spending a tiny fraction of his time on people development, evaluations, and HR, and spending very little time on customer relationships and quality assurance.

One of the counterintuitive benefits of a recession is that your company probably isn't running at 110% capacity anymore. You now have time where you can actually stop, catch your breath, and undertake a review of yourself and your operations.

Now is the time to try to evaluate your company over the next three to five years. Where are you strong? Where are you weak? Where are there significant gaps in your organization chart and in your operational functions? At this stage in your life, are you where you expected to be? Are you having fun at work, and are you making money commensurate with the amount of time, energy, and risk you put into the job?

What things that you are currently doing make you happy and cause you to have fun? What are the things you are doing now that you hate and that you constantly put off because of the amount of energy the activities drain from you? Where are you actually spending your time (keeping a time log for a couple of weeks would be a great exercise)?

> ***Evaluate your employees in a very simple way. Ask yourself if the employee came to you today and applied for his or her current job, would you enthusiastically rehire them for the position? What about three to five years from now — would you hire them then?***

How to Turn Recession Into Opportunity (continued)

Where should you be spending your time in order to generate the highest payoff for yourself and your company? Do you really know what makes your company unique: what's your Unique Selling Proposition?

How do your customers really view the work you've done for them in the past? And so on; the list of internal exam questions is practically endless. The blessing of a recession is that you will be able to make the time to ask and answer these potentially life changing queries.

Most family business owners spend woefully small amounts of time on business development.

The economic climate has been so good in the last twenty years that many companies simply haven't needed business development; either people are seeking them out to do work or the opportunities for work have been so good that all one needed to be successful was an inside salesman to take orders.

It's interesting how many family business owners today want the development of a marketing plan. Since a marketing plan can take six months to two years to ramp up, the reality is that they needed a marketing plan a couple of years ago before the slowdown came. Marketing and business development aren't things executives should only do in the time of recession, those are things that executives should be doing all the time.

A family business owner who's in charge in one way or another of developing business for his firm should be spending 10-25% of his time on business development without fail. If there is no time, talent, or inclination for the chief executive to undertake business development to that degree, then that's an indication the company needs to hire talent in order to fulfill that function.

A family business owner in Georgia hired just such a marketing person, gave him his instructions, and sent him out into the world to generate new business. Within 18 months, he had almost tripled the company's sales. Consequently the company let the business development employee go; he had done the job they'd hired him to do, and they didn't think they needed him anymore!

This is the kind of 1950s thinking that pervades closely held enterprises when it comes to business development. Marketing isn't something you turn off and on as conditions require. It's something the company does all the time. It's like trickle irrigation where a tiny amount of water is put into the ground twenty-four hours a day. Even though the amount of water dispensed at any one time is infinitesimal, the cumulative effect is to irrigate the plants so they grow strong and healthy over time. So should your marketing function work.

Conclusion

Soft economic times product many areas of opportunity, and entrepreneurs should look at recessions as such as opposed to dreading them. Among the other opportunities are to: buy or merge with distressed competitors, increase marketing and promotion expenditures relative to peers, negotiate favorable terms and conditions with suppliers, reengineer systems and processes in the company, undertake leadership development and improved employee training, etc.

But the main ways to take advantage of a recession are: 1) get great numbers and cut expenses with a scalpel instead of a meat cleaver, 2) get the wrong people off your bus, and 3) utilize your time more wisely. Recessions can be scary and cause closely held companies to react in panic mode. However, with the right attitude and the right assessment of your real short and long term needs, a recession can be an opportunity to emerge as a much leaner, stronger, and more capable enterprise than ever before.

Wayne Rivers is the president of the Family Business Institute, Inc. FBI's mission is to deliver interpersonal, operational and financial solutions to help family and closely-held companies achieve breakthrough success. They can be found at www.familybusinessinstitute.com

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But the main ways to take advantage of a recession are: 1) get great numbers and cut expenses with a scalpel instead of a meat cleaver, 2) get the wrong people off your bus, and 3) utilize your time more wisely.

What is Your Client's Image of You?

"A Sirvayur is something that grubs around in the woods looking for little sticks and stones. When he finds them he does some kind of weerd dance around them with a funny-looking 3-leg crutch wich he leans on and looks at. When he don't find them he walks around all day like he's lost. Sometimes you see them squashed by cars along rodes, shelly in the summer when all the other bugs are out. A Sirvayur has one big *eye* like Popeye. He usually walks bent over all the time which is why he ways looks so stooped. His face looks like old lether. He cusses terribul. He can't read because he measures between things and then puts down a number in a littel book "wich is difrint than wat his littel map says. he always measures to a stick or stone, stops neer it, and puts in another stick or stone. he is not too brite because he is always makeing marks on sidewalks and roads to find his way home. His pants are allways tore from rock salt and his hoes look like they was made of mud. People stare at him, dogs chase him and he always looks wore out, I don't know why anyone wants to be a sirvayur."

(From the Old Dominion Surveyor, November 1970) Contributed by Stan Coalter; Coalter & Associates 905 N IH-35, Ste 108; Round Rock TX 78664

From *"Georgia Land Surveyor"* May/June 2010

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The Quixotial Quest Part II

by Stan L. Emerick, PLS

One of the purposes of updating the accuracy requirements of the Missouri Standards was to make them more applicable to current technology. Recognizing that the methods of surveying with diverse technologies require different procedures for obtaining accurate data, we set out to find the similarities in the methods and refine the procedures to ensure that the collective results would have comparable accuracies. Our goal is to find a unified set of standards that accepts what currently works, appends new ideas that compliment technology, and simplifies the burden of defending the results.

A cursory review of other standards generated by neighboring states show that many of them struggle with the issue of accuracy. Rather than adopting one of their models, we decided to reevaluate our own guidelines to see if we could establish a communal set that could bridge the chasm between time honored procedures and new revolutionary ones.

Our quest began by revisiting the fundamental procedures performed in a ground traverse, looking at the typical components and the types of errors that can occur. Content with our grasp of these aspects, we turned our attention to brushing up on the types of statistical analysis that where applicable to data obtained from a ground traverse. Once comfortable with that review, we then considered what parts of that analysis would be applicable to GPS based data.

As a part of the process of examining the components of the ground-based systems, we attempted to ascertain which could be incorporated into the use of GPS or sky-based forms of surveying. Our objective was not to make major revisions to guidelines, but to incorporate what we already had into new procedures. Ones that could be employed with dissimilar equipment, yet yield similar results.

For analysis, we looked at three basic approaches to utilizing GPS technology: Static Surveys (including OPUS solutions), Real Time Kinematic Surveys (RTK, utilizing base stations and rovers) and Virtual Reference Systems (VRS, a network of continually operating reference stations). Each employee a slightly different method of determining positions, but all work on the same general framework, the computation of positional values by resection.

THE DIFFERENCE BETWEEN GROUND-BASED TRAVERSES AND SKY-BASED RESECTIONS

Most surveyors understand the mechanics of using a total station to measure the courses and distances of lines. A majority of those also grasp the concepts of systematic and random errors and how they are propagated. A good number of those also understand how to apply an analysis of the component distance and direction errors to their data to judge its validity. But when it comes to applying these same concepts to GPS data, many have a difficult time making the correlation. Probably fewer would say that they feel comfortable evaluating that data for validity and accuracy.

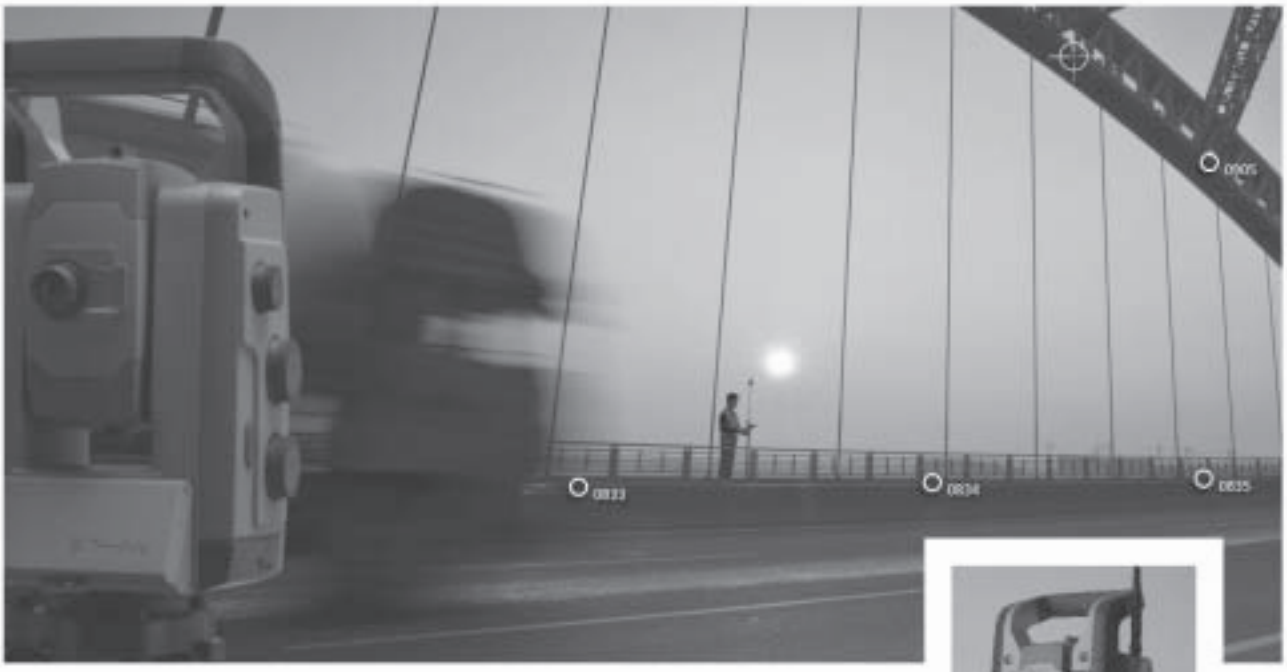
The fundamental difference between the two systems is that in one, the distance and directional components come from different sources, and the coordinate values for subsequent points are computed using a combination of both components. The positional errors of the subsequent points are directly impacted by any errors in either component or by any positional error in the initial point.

In the other system, positional values are determined by resection from satellites, whose primary component measurement is distance. With the exception of some real-time kinematic surveys, the value of any given point in a survey is nearly independent of any other given point. The only connection they share is the condition of the satellites at the time of the survey and any atmospheric influences that the signals might have endured.

Considering the multitude of obstacles that can impact a GPS survey, it's difficult comprehending how to account for all of them and successfully realizing satisfactory results. The potentials for error can include atmospheric conditions, orbital and constellational degradation, radio interference, and many other environmental obstacles, all of which can lead to multi-pathing (the delay in the time it takes the signal to reach the receiver and the bane of every GPS surveyor).

(continued on page 30)

Our goal is to find a unified set of standards that accepts what currently works, appends new ideas that compliment technology, and simplifies the burden of defending the results.



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The Quixotial Quest Part II (continued)

ANALYSIS OF ERRORS — TRAVERSES VS. RESECTIONS

When analyzing the results of a ground-based closed traverse, the linear error of closure of the traverse is computed from the actual traverse measurements. This is accomplished by taking the square root of the sum of the squares of the errors of the closing point and then dividing that value by the length of the traverse. The reciprocal of this value is generally considered as a measure of the accuracy of the traverse and is usually expressed as a ratio in the form of "one in [some quantity] thousand", where the higher the quantity, the better the traverse.

To determine if these results are valid, an analysis of the component distance and direction errors of the traverse can be performed, and the expected errors of can be determined. Expanding on this technique, it is possible to analyze any given sampling of component segments and compare their measured error against their expected error. Coalescing the variations in the results, one can determine a standard deviation for the body of work. And with that standard deviation, one can determine the level of certainty of that data.

This orderly analysis can yield some interesting results. It can often enlighten the analyst as to the possibly location of defects in his data or collection process. Performing this analysis can steer the interested surveyor towards probable weak links in his survey, affording him the opportunity to focus more attention on potential liability risks.

The equipment used in GPS or sky-based surveys are generally not seen in the same light. They normally are not viewed as tools for measuring direction. The final product is generally considered a positional value expressed in a coordinate set. These sets may or may not be accompanied by residual errors, which may be (but not always) of some value when considering accuracy.

The distinction between the two systems is that in the ground-based traverse, the systematic errors of an instrument can have a significant influence on the outcome of the data. So any analysis needs to be concerned with both the distance and directional components. In the use of GPS technology, the systematic errors seem to have less of an impact on data than the random errors do. Even if that is the case, there ought to be a way of effectively collecting data, and doing an analysis, that will produce results comparable to a normal traverse.

The equipment used in GPS or sky-based surveys are generally not seen in the same light. They normally are not viewed as tools for measuring direction.

If one holds the directional component of the GPS survey to the cardinal points, then the terms of an "analysis of component distance and direction errors" are reduced to terms of distances errors. And the exercise becomes an "analysis of component distance errors". This analysis would follow the format stated above, but would be restricted to single line segments where the linear error of closure is reduced to just the linear error of a line segment.

Evaluating the linear errors for positional accuracies within any given sky-based system should be able to yield similar results to those observed in a ground-based system, provided that a practical positional error has been obtained on each individual point. If that is not the case, then the data should be considered incomplete and additional measurements made.

SUGGESTED MODIFICATIONS TO FIELD PROCEDURES

For the case where a typical ground traverse is to be implemented, very little needs to be added. The primary control traverse should be run and closed in typical fashion. Measurements to the secondary points (side shots) should contain sufficient data to determine a practical positional error. Typically you would hold the primary points to a higher degree of care because they are part of a closed circuit. While the secondary points (children) wouldn't be expected to hold any accuracy greater that their parents, their positional errors should not be allowed to exceed the relative positional tolerance.

The same care and diligence should hold for your typical GPS survey. When you lay out your network, your control points should receive a higher degree of care (a greater number of observations or measurements) than your secondary points. These are the points that should be utilized for any subsequent survey work or the setting out of lost corners. Your secondary points should still receive sufficient observations to determine a practical positional error, but the quantity of those observations may be less than those for the primary points.

On any occasion where two different systems are to be merged, the linking points that exist in both systems should be considered as primaries in each. They should be held to the highest degree of care in both systems and any

(continued on page 32)

The Quixotial Quest Part II (continued)

subsequent work should originate on these communal points.

When utilizing RTK systems, primary control points should be observed from dual base stations. Secondary points should have multiple measurements (or secondary ties) to allow for the determination of a practical positional error. Where points exist in hostile environments, some sort of secondary resection or a triangulation from observable reference points should be considered.

When utilizing VRS networks, multiple measurements should be made at all points. The individual measurements should contain a change in signal heights between observations, where each shift in height surpasses the L1 wavelength (19cm/0.63ft). This procedure can provide a reasonable check on the elevation, and can lend support in the defense of the horizontal accuracy.

When utilizing static, rapid-static or OPUS surveys. the peak to peak errors should be sufficient for performing any analysis (assuming that the square root of the sum of the squares of the errors is less than or equal to the reported RMS value).

It should go without saying that this endeavor is a work in progress.

SUGGESTED MODIFICATIONS TO THE CURRENT STANDARDS

Based on the discussions above, the following revisions to the standards are hereby suggested. **(Suggested revisions appear in bold type.)**

10 CSR 30-2.020 Definitions

(9) ~~Radial~~ **Resected** survey measurement tolerance: ~~Radial~~ **Resected** survey measurement tolerance is the computed ~~expected~~ relative accuracy of any ~~distance~~ **line segment** determined by ~~radial surveying methods~~ **resection**. It is computed using an analysis of component distance ~~and direction~~ errors.

(10) ~~Radial~~ **Resected** survey method: ~~Radial~~ **Resected** survey method is the determination of the coordinate values of points by ~~measuring directions and distance~~ **measurements** from a ~~central point~~ **global positioning system** as opposed to determination of the coordinates of points by traverse. ~~The determination of coordinates by "side shots" from a closed traverse is not considered a radial surveying method~~. **Any survey utilizing GPS technology and not employing a predesigned network will be considered a Resected Survey Method.**

(12) Relative Positional Tolerance: Relative Positional Tolerance is the relative accuracy between all ~~directly connected~~ pairs of points in a survey. **It is generally considered as a mixed term, containing a ratio plus a constant, where the ratio can be expressed as the square root of the sum of the squares of the errors of the end points, divided by the length of the line.** In practice it is computed for a sampling of pairs of points using ~~either~~ an analysis of component distance and**/or** direction errors ~~or from a minimally constrained, correctly weighted least squares adjustment~~.

(14) Traverse closure: Traverse closure is the linear error of closure of the traverse computed either from an analysis of the component distance and direction errors or from the actual traverse measurements. **When it is determined that an adjustment needs to be applied to a dataset, only one form of adjustment will be applied.**

10 CSR 30-2.030 General Land Surveying Requirements (Suggested revisions in bold.)

(D) Obtain ~~appropriate~~ **a sufficient number of observations or** measurements ~~and correlate all found evidence~~ **on each control point or monument to determine a practical positional error**. Measurements will be taken to a precision compatible with the **confidence level listed below.** ~~size and geometric shape of the parcel involved,~~ and consistent with the accuracy ~~desired~~ **standards** for the class of property ~~on which the survey is located, and in accordance with the accuracy standards~~ as set out in this chapter;

10 CSR 30-2.040 Accuracy Standards for Property Boundary Surveys

(1) The surveyor shall select the proper equipment and method necessary to achieve either the required relative positional tolerance, ~~required radial survey measurement tolerance~~ or ~~required~~ traverse closure. (A) If the computed relative positional tolerance is greater than the required relative positional tolerance, the survey shall be considered unacceptable and shall be remeasured.

(B) If the computed traverse closure is greater than the required traverse closure, the traverse shall be considered unacceptable and shall be remeasured.

The Quixotial Quest Part II (continued)

(C) When ~~radial~~ **resected** survey methods are used, it is the responsibility of the surveyor to provide sufficient checks to insure that the relative positional tolerance of all points is not greater than that required in this regulation.

(2) The required relative position tolerance and traverse closure at sixty-eight percent (68%) confidence level shall be for:

(A) Type Urban Property Accuracy shall be one-tenth (0.10) of a foot ~~or 1:20,000~~ **and 50 parts per million** ~~for distances greater than two thousand feet (2,000')~~ and shall apply to any property that is wholly or partly within the corporate limits of any city, town or village, and any commercial and industrial property, condominium property, town house property, apartments, and other multi-unit developments.

(B) Type ~~Suburban~~ **Rural** Property Accuracy shall be one-tenth (0.10) of a foot ~~or 1:10,000~~ **and 100 parts per million** ~~for distances greater than one thousand feet (1,000')~~ and shall apply to any property that is not **an** Urban Property~~; that is or is intended to be primarily used for residential purposes or property lying between residential areas whose value is influenced by the presence of such nearby developed real estate~~.

(C) ~~Type Rural Property Accuracy shall be two-tenths (0.20) of a foot or 1:5,000 for distances greater than one thousand feet (1,000') and shall apply to all property that is not Urban Property or Suburban Property;~~

FINAL COMMENTS

An astute reader may have noticed that there has been no discussion on the use of a least squares adjustment as a justification for accuracy. The debate on that subject would be too lengthy to adequately cover here. Suffice it to say that depending on the specifics of the traverse network, performing a least squares adjustment does not always produce the best results.

Also avoided in this discussion was the concept of confidence levels. While we recognize that some other standards choose to define their relative positional tolerance to the two sigma ninety-five percent (95%) confidence level, we feel that that may be too stringent of a standard to successfully meet in the execution of everyday boundary surveys. Our current standards are defined at the one sigma sixty-eight percent (68%) confidence level, which we feel is more practical. However, if others consider this level inadequate, perhaps some discussion could be introduce regarding an upgrade to the ninety percent (90%) confidence level.

It should go without saying that this endeavor is a work in progress. We invite your comments and future participation in any "perfection" of these standards.

If You Ever Wondered Why . . . Ask Mike!

by Michael Whitling, PSM

Why is someone in control of someone else said to have them at their "beck and call?"

Would be nice to have someone standing ready to obey your slightest whim, as I would imagine it's like being a king or queen. The word "beck" does date back to around 1300 A.D., but the term "beck and call" actually is a fairly recent term, dating back only to 1875. The "call" part is clear-cut; if the master calls you better answer pronto. The "beck" is more obscure, although it's really only a shortened form of our familiar word "beckon," meaning to "make a mute signal or gesture," especially to call a person over to you "Beckon," in turn, comes from an old Germanic word meaning "signal," from which we also derive the modern English word "beacon."

Why when we want to silence things said about something do we "squelch" it?

It you are using a two-way radio you may be familiar with the "squelch" button which cuts off a radio receiver when the signal is too weak for reception of anything but noise. But "squelch" actually first appeared in the 17th century and meant a "heavy crushing blow acting on a soft body and the sound produced by this. That soft body could be human and in battle you could be given a "squelch" that you would never rise from. From that "squelch" eventually came to mean "to put down or suppress completely."

A Funny Thing Happened on the Way to the Job . . .

by John Gargis, PSM

We were filling a large area (400 acres or so) with dredged sand from the bottom of the Banana River Lagoon in Cocoa Beach building the land site for the Minuteman Junior & High School sites. All the sand and water was pumped to one of several ponds that allowed the sand to deposit itself and send the transport water running back into the river (lagoon). The water running into the river was being sent via a large ditch that was running very fast and was so full of debris you could not see the bottom. In act, you couldn't even see a foot into the water.

We were doing a topographic survey of the lands that they had already filled to determine the volume of sand they had moved. The party chief had run me and a very good friend of mine, Ray, ALL DAY LONG. We were worn out and exhausted! At the end of the day the party chief said to go back to the truck and he would be around in a few minutes.

As Ray and I dragged ourselves back to the truck, we came across one of the large drainage ditches. After checking the ditch with a lath, we decided it was too deep to cross without taking off our clothes. Besides, we were HOT! We removed our clothes and swam across the ditch holding the clothes and lathes over our heads. We ended up about fifty feet down the ditch due to its flow volume. It was really flowing! We put our clothes back on and then an idea came to us. We stuck our legs back into the dirty water up to our knees and sat down on the bank of the ditch awaiting our victim.

Shortly afterwards the party chief came to the ditch and looked warily into the water. He looked over to us and asked how deep the water in the ditch was. Innocently we pointed to the water stains up to our knees and said: "About this deep."

The party chief shrugged his shoulders and stepped into the water flow. First step — ok! Second step — down he went holding the instrument over his head. The water went over his head. He popped back up swearing that he was going to beat the (shirts off our backs), he splashed around (glug, glug, glug) and finally made it to the other side of the ditch sloshing wet. Even the instrument was wet! He chased us all the way back to the truck with all of us laughing so hard we couldn't run anymore!

After the laughter died down, we got into the truck and went back to the office wondering how we were going to explain the wet instrument to the office.

After I became a Party Chief, the company received a large sanitary sewer project that served an area 3 miles wide by 18 miles long on the beachside barrier island. "Stuff" was floating in the people's back yards. I was one of the crews assigned to get topographic information so they could plot everything on the drawings before they designed the sewer system (before total stations I might add). I had to get EVERYTHING including the house floor elevations, which was what caused the problem.

After several months of doing this location and elevation work, I was getting tired of doing it. Everyone was coming up to us and asking what we were doing. Everyone! Finally, I had enough! To one senior citizen who was asking "What are you doing?", I responded, "We are putting a 24" diameter CLEAR plastic sanitary sewer pipe system down your street here, about three feet behind the sidewalk (actually between the sidewalk and your house) and about fourteen feet in the air. I'm just getting points to set it! We want it to be a CLEAR pipe so we can make sure that it's flowing correctly."

I had answered similar questions in the same manner for the past several days. No problem. They shut up, went back inside their house and stopped bugging me. It was working and I was most proud of myself.

However, shortly after responding to this one senior citizen, the alarm went off in my truck. The alarm was used to get a hold of people in a hurry. When I answered the alarm on the short wave radio we carried, my boss asked me (in a COLD voice) if I had talked to one of the members of the public in the past few minutes. I told him that I had. He told ME, in no uncertain terms, to get to the office. NOW!

I knew I was a dead duck! After we got to the office, my boss told my crew that they could go home with pay for the full ten hours. He waited until they left the building. When he turned to me, he just looked at me for several seconds. I was scared! Then he hunched over me several inches from my face and screamed at me for several minutes! He told me all about working for a living! And that we are all working for the good of mankind! And that we are all working for the good of our families! And that I should be thankful for a job! Then he snickered and broke out laughing after a couple attempts to keep a straight face. He started laughing so hard that he couldn't stand up. He had to sit down! Between his bouts of laughter, he told me that this was the funniest thing he had ever heard! He then told me what happened.

It seemed that the "public" person I talked to had called the County's Utility Department. The County Utility Department called the County Administrator Office. The County Administrator Office called a County Commissioner who, in turn, called the Owner of the Firm where I was employed. The owner of the firm talked to my boss, firmly. Things do get around, don't they? All in a few minutes too! Anyway, I was sweating like a stuck pig although I wasn't afraid of losing my job anymore! My boss allowed me to continue working there after going home and thinking about what I said to the PUBLIC person to whom I had to apologize to the next day.

After apologizing to that PUBLIC person the next day, when asked any questions, I always answered the PUBLIC with the truth.

When I was in Naples, Florida, we had a party chief by the name of ". . . ." who was forgetting to get stuff the engineers or people needed for their project. We got a job in a very exclusive part of town where the Homeowners Association

A Funny Thing Happened on the Way to the Job . . . (continued)

had some very specific requirements for the survey to be submitted to them for approval. Not only that but they were very, very strict concerning the information that was on the survey. All surveys to be submitted had to be at a scale of 1" equals 10 feet and these were BIG lots all on salt water. This was so they could see everything they wanted to see and they wanted to see everything including bushes, their horizontal limits and their vertical limits (all as measured, of course, to the tenth of a foot) including changes in width as you went down the hedge row from the street. To the tenth! The survey had to include the adjoiners lots, as well, to within fifteen feet of the lot line. Believe me, they wanted everything!!!

So when it came time for a field crew to do the survey, ". . ." 's name came up. I was a little unsure if I should let him go do this survey, but I was also sure he remembered our last "talk" and had handed him another copy of my standard Field Note Requirements for Party Chiefs. So I let him go to this survey in the exclusive part of town.

He came back with his notes that night (It took all day to do the survey because they needed so much "stuff." It was late and I decided that I would look over his notes the next day rather than look at them that night. In the morning, I got the field crews out the door and then started to look over their field notes of yesterday before drawing what they did. While looking over ". . ." 's field notes, I came upon a note that said "DSSG" together with an angle and distance. It plotted right in the middle of the cul-de-sac's pavement area around their landscaping island! I had no clue what that meant. I searched my references and still had no clue. I asked others in the office what that meant. Still no clue. I looked at previous surveys he had done, still no clue. I was not finished, but at that time the field crews came back in at the end of the day. While I was ready to admit I was licked, I put off asking him what it meant.

After checking with other surveyors in town the next day, I still had no clue. I was done.

When he came back in the next day after that, I finally asked him what "DSSG" meant. He looked at me with a wink in his eye and said that he remembered our last talk about locating everything the homeowners association wanted and that he had taken it to heart. "OK," I said, "but what does it mean?" "Dead Squished Sea Gull," he said.

No more did I discuss completeness of his field notes with him anymore. After that I put out a new revision of the Field Note Requirements for Party Chiefs that had an item in it that told them to explain any "unusual" abbreviations in their notes. It went to ALL party chiefs.

From *"The Florida Surveyor" Oct. 2009*

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Smith & Co., Inc., Poplar Bluff, MO
Anderson Survey Company, Lee's Summit, MO
Koehler Engineering & Land Surveying, Inc., Cape Girardeau, MO
Amsinger Surveying, Inc., Marshfield, MO
Barton Engineering Co., Inc., Lebanon, MO
Central MO Professional Services, Inc., Jefferson City, MO
Hood-Rich, Inc., Springfield, MO
Grimes Consulting Inc., St. Louis, MO
Doering Engineering, Inc., St. Louis, MO
Shaffer & Hines, Inc., Nixa, MO
Affinis Corp, Overland Park, KS
ABNA Engineering, Inc., St. Louis, MO
Bowen Engineering & Surveying, Inc., Cape Girardeau, MO
St. Charles Engineering & Surveying, Inc., St. Charles, MO
Midland Surveying, Inc., Maryville, MO
Taliaferro & Browne, Inc., Kansas City, MO
Cochran, Union, MO
Pickett, Ray & Silver, Inc., St. Charles, MO
Whitehead Consultants Inc., Clinton, MO
Pellin Surveying LLC, Washington, MO
Schlagel & Associates, PA, Lenexa, KS
Cardinal Surveying & Mapping, Inc., St. Charles, MO
Bader Land Surveying, Inc., Ste. Genevieve, MO
West Wildwood Surveying, LLC, Ellisville, MO
Integrity Engineering, Inc., Rolla, MO
Minnick Surveying, St. Louis, MO
Olsson Associates, Overland Park, KS
CJW Transportation Consultants, LLC, Springfield, MO
Cole & Associates, Inc., St. Louis, MO
Elgin Surveying & Engineering, Inc., Rolla, MO
Frontenac Engineering Group, Inc., St. Louis, MO
Harms, Inc., Eldon, MO
HDR/Archer, Lee's Summit, MO
Musler Engineering Co., St. Charles, MO
Pitzman's Co. of Surveyors & Engineers, St. Louis, MO
Poepping, Stone, Bach & Associates, Inc., Hannibal, MO
Riggs & Associates, Inc., West Plains, MO
Robert S. Shotts, Inc., Lebanon, MO
Ruble Surveying Co., Salem, MO
Wilson & Co., Inc. Engineers & Architects, Kansas City, MO

Monday, Monday

by Andy Kellie, PLS, Department of Engineering, Murray State University, Murray, KY 42071

It was Monday morning, but with the economy improving, and plenty of work ahead for the week no one was complaining. True, there were some time constraints on the work, but time constraints are part of the job of a surveyor. The retracement crew was doing a survey to settle an estate on the east side of the county. The land was second growth river bottom hardwood, and consequently, despite the damp location, quite valuable. Central to the retracement was the location of a monument marking the southwest corner of the tract. The adjoiner on the west was an industrial landowner with a reputation for well-marked lines and corners. The corner still to be found was described in the writings as a "cedar post, painted orange, set in rocks". If the monument was there and undisturbed, it would control corner location. If it were lost, we would have to rely on other physical evidence to restore the corner. I went over the importance of finding this monument and the strategy for doing so with Samantha, the chief of the retracement crew. If things went according to plan, they would finish locating physical evidence (including the still-to-be-found corner) today. Then we could decide on the boundary and mark the corners in time for the final probate hearing on Friday.

If things went according to plan . . .

The staking crew had two jobs scheduled for Monday: a simple building staking in the existing Wood Haven subdivision, and setting the final corners in the new Creekwood subdivision. Both jobs were time sensitive. Excavation was scheduled for Monday afternoon at Wood Haven. At Creekwood, we needed to finish staking corner monumentation before the planning board meeting on Tuesday evening. If things went according to plan, the crew would finish both with time to spare.

For the Wood Haven job, the owner had dropped off a deed and a set of building plans at our office on Friday afternoon and had signed a work order for us to stake the foundation of his new home. The owner explained to the secretary that he had already marked the location for the house on the ground, but the contractor had insisted that a surveyor was needed to check the owner's location and to ensure that the foundation was square. The deed furnished by the client described the land conveyed as ". . . being lot 21, block 2, as shown on the plat of the Wood Haven subdivision, and being subject to all covenants thereon." A photocopy of that part of the plat showing lot 21 was stapled to the back of the deed.

Terry, chief of the staking crew, had it all under control. "We'll use the existing monumentation as control, and match our work as closely as possible to what the owner wants. It's a simple enough building – rectangular, two story house with an attached garage. We'll stake the footings at Wood Haven and if things go according to plan, we'll get over to Creekwood by 10 o'clock." Even I thought that was optimistic.

Since I'm the surveyor, it seemed prudent to obtain the plat of Wood Haven. If the deed referred to a plat then the plat was part of the deed, and I particularly wanted to know about the "covenants thereon." Wood Haven was an older subdivision, and we had never done any work in it. I obtained a copy of the Wood Haven plat at the courthouse while the crew hunted up the control shown on the photocopy of the lot. If all went according to plan, they would have recovered the control and be ready to stake the building when I got there.

I found the crew looking mighty glum. Despite the assiduous use of shovel and pin finder, there was only one monument — of any kind — marking the corners of lot 21. I called the owner and the contractor and told them we were going to have to set the lot corners before we set the building corners. The owner said to go ahead and asked what it would cost. The contractor said to get it done and to watch for the backhoe.

Before I could get back to the problem at Wood Haven, Sam called. The crew had found a cedar post that matched the description of the southwest corner. The post was painted in company colors (international orange) and even scribed with the corner location. However, Sam was clever enough to realize that the post wasn't on the extension of either the west line (which the crew had been following that morning) or on an extension of the south line of the property (which they had retraced last week).

Since I'm the surveyor, I was expected to figure it all out. I had Sam photograph the post and email it to me. I could see why she was concerned. Apart from the location, the post wasn't set in a pile of rocks, and the blaze orange paint stopped a foot above the ground. Monuments only control if undisturbed, so I told Sam to keep looking. If things went according to plan, there would still be time for the retracement crew to close on the GPS work during the afternoon.

While I was on the phone, Terry had started aggressively locating existing corners and other boundary evidence at Wood Haven, but it was almost 10 o'clock before the crew was ready to dump their data logger into my laptop. The result was electronic surveying at its finest — seamless data transfer, accurate coordinate computation, clear symbols and labels. Unfortunately, the result was also boundary-retracement-in-an-older-subdivision at its worst — a combination of original and indeterminate monumentation,

(continued on page 38)

Monday, Monday (continued)

physical evidence that was contradictory, and bearings and distances that were equivocal.

Terry suggested a solution. He had been studying boundary law in preparation for the Fundamentals exam, and he recalled immediately that in any simultaneous conveyance, excess or deficiency must be shared equally. "Let's just divide up the differences and mark it on the ground just as the book says." I wasn't so sure. First, there was a lot of physical evidence that showed the location of boundary lines by adjoining owners. We needed to reconcile that before going further. Second, there might be a simple mistake in one (or more) of the lines. It didn't seem to make sense to distribute the mistake amongst all the other (unmistaken) measurements. Third, I just couldn't see myself explaining to some judge why I felt it necessary to change all the boundaries in a subdivision that had been in place and undisputed for a couple of decades. At this point, the backhoe the contractor had warned me about rolled up.

Since I'm the surveyor, it was up to me to figure it all out. By persistent work with the inverse and intersection functions of the coordinate geometry routine on my laptop, it was possible to get a solution that reconciled the physical evidence and all but one of the measurements. The west line of the adjoiner on the south was longer than platted, but the remaining differences in lines and corners were in surprising agreement with the original plat. The solution seemed reasonable; I uploaded the coordinates to the data logger and Terry staked the lot corners. If everything went according to plan, we could still stake the building and get over to Creekwood this afternoon.

Since I'm the surveyor, it was up to me to figure it all out.

I walked the location the owner had marked for his new home. To take advantage of the view, the owner had selected an area on the north side of the lot and placed the front of the building artistically at a 30 degree angle with the centerline of the adjoining road. A quick measurement with a cloth tape showed the location as staked to encroach by 5 feet on the adjoining property to the north, and the 30 degree rotation was prohibited by one of the covenants listed in the fine print on the side of plat referred to in the client's deed.

Since I'm the surveyor, I had to deal with this situation. Before calling the client, Terry and I tried to find a solution. We moved the foundation to the south and rotated it parallel to the road and set back line as required by the covenants. This solved the encroachment, but it put the southwest corner of the building 6 feet above grade. At 11 o'clock, I called the owner and the contractor and explained the problem to both. The owner said to wait at the site and he'd be right there with the architect to decide on a new location. The contractor said to wait at the site and he'd be right there because it was too late to cancel and he didn't have any place to dump 12 yards of concrete on Tuesday morning.

By now it was almost noon, and just about nothing was going according to plan. The retracement crew still hadn't found the southwest corner, the owner didn't know where he wanted his building, and the contractor still needed to know where to put that 12 yards of concrete. At this point, Sam called again. Her crew had found a pile of rocks splashed with international orange paint at the intersection of the west and south lines. There was a hole in the pile of rocks big enough for a cedar post. The rocks had been covered by leaves, and the crew had only found the rocks because they were looking for them. That was good news, but I was beginning to worry about getting the Creekwood job done before the planning board meeting. The probate hearing wasn't until Friday, so I pulled the retracement crew off their job and sent them to Creekwood for the afternoon. I told them that if all went according to plan, we would finish at Wood Haven by two o'clock and, with two crews working at Creekwood, we could still get done in time for the planning board meeting Tuesday evening.

At one o'clock, the backhoe the contractor had sent earlier had left for another job. At two o'clock the owner, contractor, and architect all showed up at Wood Haven, and Sam called from Creekwood to say that some control had been knocked out and they were a little behind. At three o'clock, the owner and architect agreed on a site that conformed to both the terrain and the covenants. The contractor asked us to both stake the corners and set batter boards. That way, if everything went according to plan, the contractor could still get the footings dug before dark. We finally left Wood Haven at half past four just as a trackhoe was arriving.

All in all, it was a typical Monday, and nothing had gone according to plan. The rest of the week was typical, too. On Tuesday, both crews were assigned to Creekwood, the staking was completed, and the subdivision was approved by the planning board. On Wednesday, both crews were assigned to retracement. On Thursday, we finished the plat for the probate court. On Friday, the Wood Haven client (for whom we had saved thousands of dollars) came in to complain about his bill, and the probate hearing was moved to the next week because of some problems being encountered by the lawyers.

It just doesn't get any better than this!

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