

---

---

# HOOSIER SURVEYOR

---

---



QUARTERLY PUBLICATION OF THE  
INDIANA SOCIETY OF  
PROFESSIONAL LAND SURVEYORS, INC.

VOLUME 20  
NUMBER 3  
WINTER 1994



AFFILIATED WITH THE  
AMERICAN CONGRESS ON  
SURVEYING & MAPPING



## 1994 BI-STATE SURVEYORS CONFERENCE INDIANA - KENTUCKY

JANUARY 26-29, 1994 GALT HOUSE, LOUISVILLE, KY

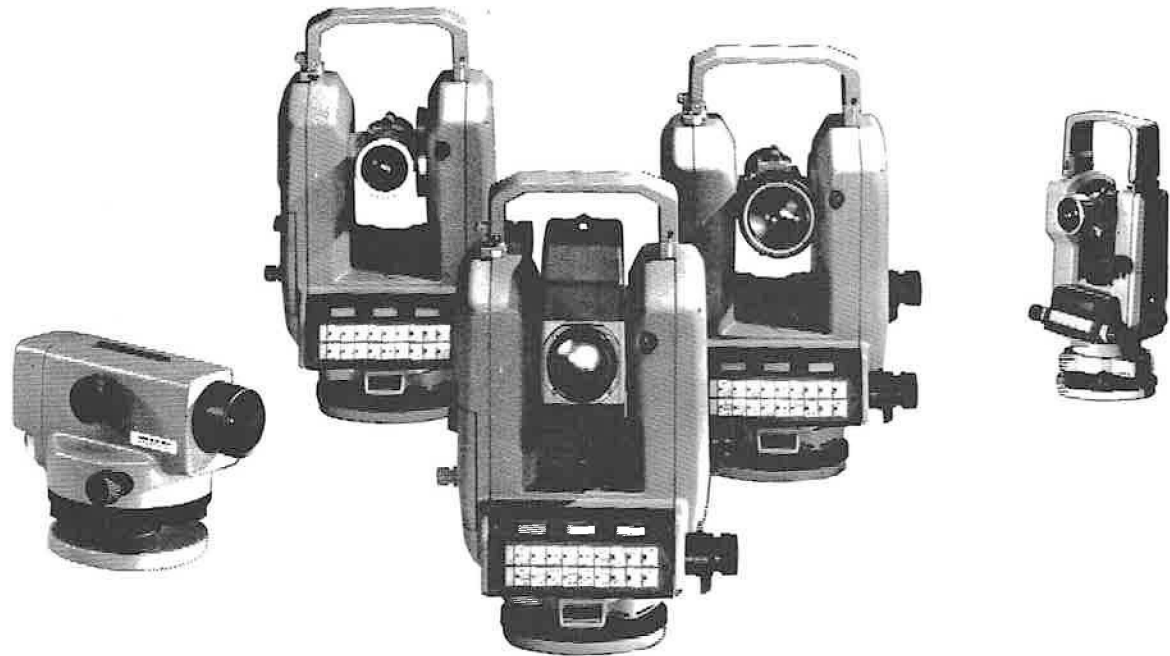


**ISPLS & KAPS JOINT SOCIETY ANNUAL CONVENTION**  
Indiana Society of Professional Land Surveyors  
Kentucky Association of Professional Surveyors



# SEILER

INSTRUMENT  
INSTRUMENT  
INSTRUMENT  
INSTRUMENT



**Your Complete Source for Surveying Equipment & Supplies**

**FEATURING LEICA (WILD) BRAND EQUIPMENT**

**Rental & Leasing  
Plans Available**

- ✓ Total Stations
- ✓ Global Positioning Systems
- ✓ Software
- ✓ Data Collectors
- ✓ Tripod Data Systems
- ✓ Levels
- ✓ Transits
- ✓ Electronic Distance Meters
- ✓ Motorola Radios
- ✓ Magnetic Locators
- ✓ Field Supplies
- ✓ **We Re-Cell Batteries**

**Complete Service  
and Repair**

**6630 E. 75th, Suite 114 • Indianapolis**  
**317-849-7090 • 1-800-533-2280 • FAX: 317-849-7297**

## 1993 OFFICERS AND DIRECTORS

Chris Marbach - President  
3220 Southview Drive  
Elkhart, IN 46514  
RES: (616) 699-5224 BUS: (219) 266-1010

E.R. Gray, III - President-Elect  
P.O. Box 1357  
Columbus, IN 47202  
RES: (812) 546-5193 BUS: (812) 379-1525

Brenda Owens - Vice President  
8279 Castle Ridge Lane  
Indianapolis, IN 46256  
RES: (317) 841-0403 BUS: (317) 261-8510

Rich Hudson - Secretary  
574 North 50 West  
Valparaiso, IN 46383  
RES: (219) 462-2946 BUS: (219) 462-1158

Doug Herendeen - Treasurer  
1356 S. Buttercup drive  
New Palestine, IN 46163  
RES: (317) 861-6298 BUS: (317) 573-4615

### DIRECTORS / TERM EXPIRES JAN/1995

Donald Bengel  
703 Division Road  
Valparaiso, IN 46383  
RES: (219) 465-0988 BUS: (219) 462-0690

David Blankenkoper  
P.O. Box 157  
Jeffersonville, IN 47131  
RES: (812) 283-4060 BUS: (812) 282-4183

Tom Boofter  
521 Bentbrook Drive  
New Albany, IN 47150  
RES: (812) 944-1603 BUS: (812) 944-8222

Doug Herendeen - Treasurer

### TERM EXPIRES JAN/1996

Robert Bigelow  
6884 Polk Street  
Merrillville, IN 46410  
RES: (219) 769-7337 BUS: (219) 836-0918

Ross Holloway  
P.O. Box 234  
Mooresville, IN 46158  
RES: (317) 831-4094 BUS: (317) 831-7918

Chris Marbach - President

Leslie Weber  
700 Weber Road  
Albion, IN 46701  
RES: (219) 636-2462 BUS: (219) 636-2462

### TERM EXPIRES JAN 1997

E. R. Gray, III - President-Elect

Rich Hudson - Secretary

Rick Miller  
827 Front Royal Drive  
Indianapolis, IN 46227  
RES: (317) 888-6696 BUS: (317) 842-6777

Brenda Owens - Vice President

### ADMINISTRATIVE OFFICE

Dianne S. Bennett, Executive Director  
55 Monument Circle, Suite 1222  
Indianapolis, IN 46204  
(317) 687-8859

ISPLS is a Not For Profit Corporation

### EDITORS NOTE

Deadlines for copy for various planned issues of the Hoosier Surveyor are as follows: Winter - December 31; Spring - March 31; Summer - June 30; Fall - September 30.

The Hoosier Surveyor is published quarterly by the Indiana Society of Professional Land Surveyors, to inform land surveyors and related professions, government officials, educational institutions, libraries, contractors, suppliers and associated businesses and industries about land surveying affairs.

Articles and columns appearing in this publication do not necessarily reflect the viewpoints of ISPLS or the Hoosier Surveyor staff, but are published as a service to its members, the general public and for the betterment of the surveying profession. No responsibility is assumed for errors, misquotes or omissions as to its contents.

Editorial Advertising Offices  
55 Monument Circle, Suite 1222  
Indianapolis, IN 46204  
(317) 687-8859

Editor: Mike Crawford  
(317) 876-0064

# HOOSIER SURVEYOR

VOLUME 20 NUMBER 3 WINTER 1994

## CONTENTS

|  |       |
|--|-------|
| Masthead .....                                     | 1     |
| President's Thoughts .....                         | 2     |
| ISPLS Board Minutes .....                          | 3     |
| Board of Registration Happenings .....             | 4     |
| I-60 Mid-Continent Highway Coalition .....         | 5     |
| Million Dollar Surveyors .....                     | 7-8   |
| Geodetic Data Sheets on CD-ROM .....               | 9     |
| Bi-State Conference .....                          | 11    |
| Purdue Student Banquet .....                       | 12    |
| Maryland Firm Will Make Digital Map for USGS ..... | 13    |
| Objective vs. Subjective Standards .....           | 15-16 |
| Get It Right-Get It In Writing .....               | 17    |
| Surveyors Historical Society News .....            | 18    |
| Distinguished Surveyors/Completed Careers .....    | 19    |
| NSPS Governor's Report .....                       | 20-21 |
| Chapter News .....                                 | 22    |
| Safety Engineering/ Sustaining Members .....       | 23    |
| Calendar/Classified .....                          | 24    |

## Committee Assignments (1993)

### STANDING COMMITTEES

#### BY-LAWS

Ron Hansell - Chair  
John Beals  
Don Bengel

#### CHAPTERS

Paul Moffett - Chair  
President Initial Point Chapter  
John Bauer  
President Central Indiana Chapter  
Chuck Coyle  
President Hoosier Hills Chapter  
Ed Hutson  
President Northwest Chapter  
Ken Jones  
President St. Joe Chapter  
Joel Hoehn  
President Northeast Chapter  
Alvin Paul  
President Southwest Chapter

#### CONVENTION COORDINATING

Doug Herendeen - Chair  
Bob Bigelow  
David Blankenkoper  
Rich Hudson  
Ken Jones

#### EDUCATION

Tony Gregory, Chair  
Perry Cloyd  
Rich Hudson  
Steve Johnson  
John Keller  
Rick Miller  
Steve Murray  
Brenda Owens  
John Porter  
Randy Sexton

#### ETHICS

Ross Holloway - Chair  
Tom Boofter - Southern  
Rich Hudson - Northern  
John Schneider - Central

#### FINANCE

Doug Herendeen - Chair

#### GOVERNMENT AFFAIRS

Gary Kent - Chair  
Tom Boofter  
Jerry Carter - QBS  
Jake Hall  
Hershel Manhart  
Steven Murray  
Jeffrey Souder

### HEADQUARTERS

Chris Marbach  
E.R. Gray, III  
Rich Hudson  
Doug Herendeen  
Brenda Owens

### HOOSIER SURVEYOR

Mike Crawford - Editor  
Robert Gross  
Randy Sexton  
Ryan Wisehart

### LIBRARY

Dave Best - Chair  
Chris Marbach

### MEMBERSHIP

John Silnes, Chair  
Joe Blevins  
Larry Manning  
Brenda Owens  
John Porter  
Douglas Stradtner

### NOMINATIONS

Gary Kent - Chair  
Don Bengel  
Doug Herendeen

### PUBLIC RELATIONS

Dave Best - Chair  
Lee Bender  
Perry Cloyd  
Lawrence Deckard  
Michael Hall  
Vic McCauley  
Jeff Meyerrose

### PUBLICATIONS

Jerry Carter - Chair  
David Blankenkoper  
John Silnes  
Ryan Wisehart

### SCHOLARSHIP

Orwic Johnson - Co-Chair  
Dale Grimes - Co-Chair  
Lee Bender  
Don Bengel  
Robert Gross  
Dean Hamilton  
John Keller  
Danny Leek  
Jeffrey Souder

### STANDARDS

Ross Holloway - Chair  
Doug Herendeen  
Hershel Manhart  
Jeff Meyerrose  
Rick Miller

### AD HOC COMMITTEE

COLLEGIATE/IUPUI SURVEYING COURSE STUDY  
Pat Cunningham - Chair  
Tony Gregory  
Art Haase

### SOCIETY LIAISON

### COUNTY SURVEYORS ASSOCIATION

Don Bengel - Chair  
Larry Fisher  
E.R. Gray, III  
Dave Smoll

### INDIANA STATE BOARD OF REGISTRATION

Gary Kent - Chair  
Doug Herendeen

### INDIANA HISTORICAL LANDMARKS

Rollyn Blankenkoper - President  
Ken Anderson - Vice President  
Vic McCauley - Secretary  
Nelson Prall - Treasurer  
Jerry Martin

### SURVEYORS HISTORICAL SOCIETY

Bradley Rayl - President  
Patrick Manship - Secretary/Treasurer  
Ken Curtis  
E.R. Gray, III  
Randy Sexton

### GREAT LAKES COORDINATING COUNCIL

E.R. Gray, III

### NSPS GOVERNOR

E.R. Gray, III  
Don Bengel, Alternate

### GIS/LIS COMMITTEE

Perry Cloyd - Chair  
Bryan Catlin  
Boudewijn van Gelder  
E.R. Gray, III  
Hershel Manhart  
Larry Manning

## PRESIDENT'S THOUGHTS

by Christian F. Marbach, PLS, Elkhart, IN



As I begin this message I have been president of ISPLS for two days. Not much time to create a profound report to the membership.

The first thing I must do is thank Doug Herendeen, past president, and all of those before him for creating a society which is organized and

well respected on both the national and local levels. However, the most important part of this organization is you. We could not achieve our goals, could not succeed in our chapter, committee and membership accomplishments, without you. Your contributions of time, talent and your treasury are the reasons ISPLS continues to be a recognized leader in the surveying community.

The chapters and committees of ISPLS will continue to have active agendas, with excellent seminars offered on a regular basis. The main focus of this year's educational program will be Rule 12, practical applications and the survey report. If you're not up to speed on Rule 12, "The Minimum Standards", you should be - "It's the Law". Currently, three seminars on this topic are scheduled. The first will be held in the northern area of the state, the second in Indianapolis, and the third in Brown County. If the response to these seminars indicates the need for additional assistance, your society will come to the rescue and provide it.

In years past members had complained that the old board of registration neglected complaints raised against surveyors. The comment most often heard was, "They spend too much time on engineering issues." Now we surveyors have our own board of registration, which focuses on the complaints and issues raised regarding surveyors. Ironically, people are now upset that the registration board is paying too much attention to them. However, the purpose of the rules is to protect the uneducated public from the incompetent surveyor. The surveyor who is not following the minimum standards had better rethink his occupation. If his fellow surveyors or the public doesn't complain, the next attorney who questions his work will certainly use the standards against him. After the ISPLS seminars this year, the excuse of "Not enough education on the Rule" will not float.

The next major issue the board of registration will wrestle with will be continuing education. Yes, that board has the ability to create and enforce a continuing education program. It is my guess that within one to one and-a-half years the program will be in effect, with every surveyor required to meet a minimum standard of continuing education. As a professional, every surveyor should relish the chance to learn more about new technologies, ethics and standards of practice. As you know, ISPLS has a voluntary continuing education program created by our Education commit-

tee. At the conference last week the "Distinguished Surveyor" certificates were awarded to recipients who had successfully completed the education requirements. Congratulations to the 25 people who earned the award. But as I understand it, only about 40 people applied. I was dismayed to learn that only 40 people out of a total membership of 286 registered surveyors had any interest in continuing to educate and promote themselves and the profession. Doctors and other professionals have changed their methods of practice in the last 50 years, and so should we.

Next, I wish to thank all of the people involved in the 1994 Bi-State Conference. The conference committee, society executive directors, speakers, exhibitors and all other volunteers can be proud of a job well done. There were approximately 200 members registered from Indiana and 70 from Kentucky. I did notice the northern part of Indiana was not very well represented this year. Was the conference too far away or were you too busy? I am sure that the southern part of the state will be well represented at the 1995 conference in Merrillville, Indiana.

At the membership meeting in Louisville the society was instructed by the members to actively promote the new high accuracy reference network "HARN". NGS will establish points at a 200 kilometer interval (approximately 15 points) across the state with or without our help. But, with our help in education of the local governments, state government and private volunteers, a reasonable goal would be to have one point in each county. NGS will establish as many points as we can supply funds for. The fee for each point will be minimal compared to the long term benefit for each county and each surveyor practicing in that county. More information will be forthcoming as we get the info from NGS. We will need to organize quickly to get all of the monumentation completed by next year, as NGS has tentatively scheduled Indiana for 1995.

Just as a reminder, my duties as president include: Presiding at all of the meetings of the membership and board of directors; voting on matters coming before the board of directors only in the case of a tie; and guiding the functions of the society. The first task needing my attention was to recruit members to fill the various committee positions. You may wonder why some members received telephone calls from me and some did not. For the answer to that question, think back to when you received your membership renewal notice. On the bottom of that form you were asked to indicate which committee you were willing to serve on. Those members who circled items on that list were the ones I called. By the time I finished with those calls, the committees were full. The moral of this story: When you get the renewal notice, take the time to fill out your areas of interest. And to all of the people I did call, thanks for volunteering!

In conclusion, I look forward to a challenging year as President of ISPLS. Thank you in advance for all of the help I'll be receiving throughout the upcoming year. "In matters of style, swim with the current; in matters of principle stand like a rock." - Thomas Jefferson

## ISPLS BOARD OF DIRECTORS MEETING

by Dianne Bennett

### Minutes ISPLS Board of Directors Meeting Highlights

The Board of Directors of the Indiana Society of Professional Land Surveyors held a meeting on October 23, 1993 at ISPLS headquarters, Indianapolis.

The minutes of September 18th were reviewed and a motion to accept them as presented was carried.

A written treasure's report was presented and reviewed and a motion to accept them was carried.

A written staff report was presented and reviewed.

There was lengthy discussion on the OSHA seminars presented.

The discussion on membership deductibility of society dues was discussed. ISPLS accountant determined that the ISPLS 1993 dues would be fully deductible, but the 1994 dues would not be. ISPLS will need to report to its members what portion of the dues is not deductible. This would be money paid out to lobbying expenses.

Indiana State Board of Registration certificate presentation is November 12. A lunch with the board of registration would be held prior to the certificate presentation.

A state roster is available only on disc for \$50. Send a letter of request and check to the licensing agency and indicate the software you are currently using.

Title 865 and Rule 12 will be updated and all revisions entered by the first of January. The update will be available at the 1994 Joint Convention.

Ron Hansell, ISPLS attorney was present and updated the board on the lawsuit. On October 1, 1993 the lawsuit in its entirety was dismissed. The possibility exists for this complaint to be amended. After lengthy discussion a motion was made to direct Hansell to file for attorney's fees.

Wes Day presented his standards report. Following Day's presentation, president Herendeen introduced a registered land surveyor who asked to come to the meeting to talk to the board about the Rule 12 non-compliance complaint process.

David Blankenkemper updated the board on the 1994 convention and presented a sample of the convention pin and a copy of the convention program.

The following membership applications were presented and approved: Student membership - John Dundar, Jeff Rode, Phillip Gabhart, Jeff Morthland, Jason Caswell, David Meier, Shane Simons, Maury Leonard, Craig Myers, Kenneth Graham, Dennis Helms, Brent Cripe, Walter Evans; Associate - Jacob Hawk; Junior - Brian Jessup, Chris Boyd.

### December 4, 1993

The minutes and treasure's reports were reviewed and approved.

A written staff report was presented and reviewed.

The 1993 convention account has been closed.

Workshops being planned are as follows: April, 1994, June 1994, September 1994, and October 13, 1995.

The legislative breakfast will be February 3, 1994 at the Westin Hotel, Indianapolis.

Gary Kent is the new chairman for the Joint Society Government Affairs Committee.

E.R. Gray was congratulated for his election as President-elect.

Status reports were presented from Vincennes and Purdue on ISPLS scholarship funds.

The ISPLS goal setting session will be February 25, 1994 at the Holiday Inn S.E., Beech Grove.

In regards to the lawsuit, a motion to correct errors was filed on Nov. 1, 1993 by Mr. Kendall. ISPLS attorney Ron Hansell filed a statement in opposition to the motion to correct errors and also filed an application for attorney's fees.

The chapters need to report as set out by the by-laws as to their year's activity. David Blankenkemper will send a letter to the chapters.

David Blankenkemper also reported on the 1994 convention.

Bob Bigelow reported that the hotel is set and the program committee is working on the 1995 convention.

Government Affairs: The upcoming legislative session is a "short session".

The following membership applications were presented and approved: Student - James Morley, Junior - Karen Bell, Walter Evans, Sustaining - Hayes Instrument Co.

NSPS Governor's report was presented by E.R. Gray. (See NSPS Governor's report in this issue).

## FLOODPLAIN MANAGEMENT WORKSHOP SCHEDULED

There will be a one-day workshop on floodplain management at the Ramada Inn in Columbus on March 18th. The program is sponsored by the American Institute of Certified Planners and the Indiana Planning Association.

The workshop instructor is French Wetmore, president of French & Associates, Park Forest, IL. The firm specializes in floodplain management, hazard mitigation and professional and community training. Also on the program is Debbie Smith, Indiana National Flood Insurance Program Coordinator at IDNR. The registration fee for the program is \$50, which includes lunch.

For registration information, call the Columbus/Bartholomew Planning Department at 812-376-2550.

## BOARD OF REGISTRATION HAPPENINGS

### Indiana Board Member Activities

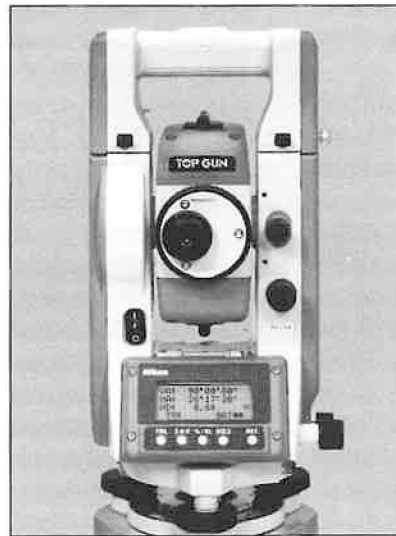
Governor Evan Bayh has appointed Wesley L. Day, Whiteland, to replace Michael Feldbusch, Newburgh, who resigned last August. His term runs until July, 1994. John McNamara, South Bend, has been re-elected as the Board chairman and Rollyn Blankenkemper, Jeffersonville, as vice-chairman for 1994. The 1994 NCEES Central Zone Meeting (twelve north central states) will be held in Indianapolis, May 5-7, 1994 at the Embassy Suites Hotel. It will be hosted by the Indiana engineer and land surveyor boards.

Ruthann Sumpter, Marion, attended a meeting of the NCEES Professional and Ethics (P&E) Committee in Atlanta, GA. Kenneth Curtis, West Lafayette, participated in a meeting of the NCEES Committee on Examinations for Professional Surveyors (EPS) in Clemson, SC in January.

Patrick Cunningham, Battleground, has been diligently working as the Board liaison with the Consumer Protection Agency of the Indiana State Attorney Generals Office which has the responsibility in bringing disciplinary issues before the Board. Several disciplinary hearings have been heard by the Board and will be reported in the *Hoosier Surveyor* after the time for appeals has expired and final judgments executed.

The Board intends to study and discuss the matter of "Continuing Professional Competency" in the next several months with the ISPLS Committee which is involved with their "Voluntary Professional Development Program" and taking into account the NCEES Guidelines. The Board also intends to help in promoting a better understanding of "Rule 12 Requirements" by encouraging ISPLS in the holding of several more workshops around Indiana.

## The lowest priced TOP GUN® total station on the market



### TOP GUN® D-50

Ruggedly built and easy to use, the D-50 is ideal for distances up to 1,700 feet and for use in confined spaces. For longer distances, Nikon offers the TOP GUN A-Series with exclusive Lumi-Guide red tracking light. TOP GUN total stations feature world-renowned Nikon optics which provide exceptionally bright, clear images for highly accurate distance and angle measurements.

#### Ask About Total Surveying Systems

Complete field-to-finish system helps you take on today's toughest surveying challenges. Includes TOP GUN electronic total station, DR-48 electronic data recorder and DR-Link+ mapping software.

For a demonstration, call:  
**1-800-231-3577**

**Nikon**  
SURVEYING INSTRUMENTS

## I-69 MID-CONTINENT HIGHWAY COALITION INC.

The Federal Highway Administration has approved an \$800,000 grant to fund a study to determine the feasibility of extending Interstate 69 from Indianapolis to Houston through 'Corridor 18,' which has been identified by Congress as a "corridor of high priority for completion." The study is expected to begin in February, following retention of consultants, and will take approximately 15 months.

Funding approval was announced December 28th to the Arkansas State Highway and Transportation Department, in concert with the other corridor states of Indiana, Kentucky, Tennessee, Mississippi, Louisiana and Texas.

Requests for the federal grant was made in August by the Corridor 18 Steering committee of the Mid-Continent Highway Coalition. The committee is composed of representatives of the Departments of Transportation from the seven corridor states. The Arkansas State Highway and Transportation Department was selected by the seven states as the lead agency, and will be responsible for coordinating the study.

John D. Caruthers Jr., Shreveport, chairman of the Mid-Continent Highway Coalition, said approval of the funding was a "major breakthrough" in our long-standing efforts to modernize transportation facilities throughout the south central region of America.

"Our coalition wants very much to thank and compliment both the Congress and the Federal Highway Administration for their expeditious approval of the funding for this important study. Their prompt response to our request is most appreciative. We believe this next step will further define the pressing need for a more modern system of transportation throughout the south central corridor of the U.S., which has, by and large, been neglected through the years," Caruthers said.

MCHC Executive Director Jim Newland said, "Extension of I-69 will be crucial to the future economy of our nation's south central states because, by accident of geography, the corridor provides a direct transportation link connecting Mexico and Canada through the heart of the U.S."

Dr. David Reed, a senior economist with William-Lynn-James said, "We believe it is fair to say that unless and until this

infrastructure project is built, the area within seven South Central states in the corridor will continue to struggle without all that much success, industrially and otherwise, because without a modern transportation system, there is no reason for commerce and industry to move into the area during this explosive age of relentless change. Federal support, then, is essential to ensure that it will be built."

For additional information about the Highway, please contact your regional representative listed.

### The Mid-Continent Highway Team

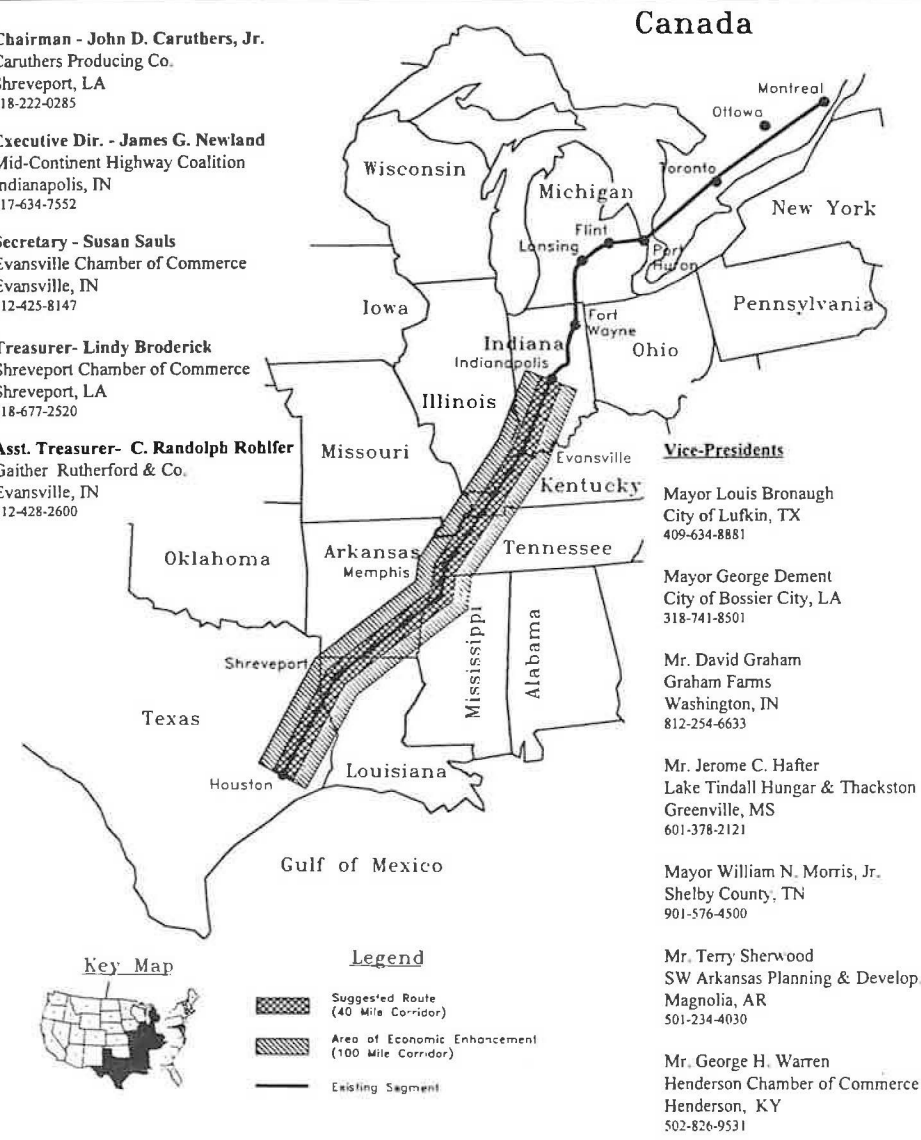
Chairman - John D. Caruthers, Jr.  
Caruthers Producing Co.  
Shreveport, LA  
318-222-0285

Executive Dir. - James G. Newland  
Mid-Continent Highway Coalition  
Indianapolis, IN  
317-634-7552

Secretary - Susan Sauls  
Evansville Chamber of Commerce  
Evansville, IN  
812-425-8147

Treasurer - Lindy Broderick  
Shreveport Chamber of Commerce  
Shreveport, LA  
318-677-2520

Asst. Treasurer - C. Randolph Roblfer  
Gaither Rutherford & Co.  
Evansville, IN  
812-428-2600



# G. LENGEMANN CO.



*Surveying Equipment and  
Drafting Supplies*

Phone Toll Free: 800-632-3923

- ▶ Complete Repair of All Makes of Surveying Equipment
- ▶ Complete Field to Finish Systems
  - Hardware
  - Software
  - Plotters
- ▶ On Site Demos
- ▶ Rentals

INDIANA'S ONLY AUTHORIZED  
 SALES AND SERVICE  
DEALER • DISTRIBUTOR

# G. LENGEMANN CO.

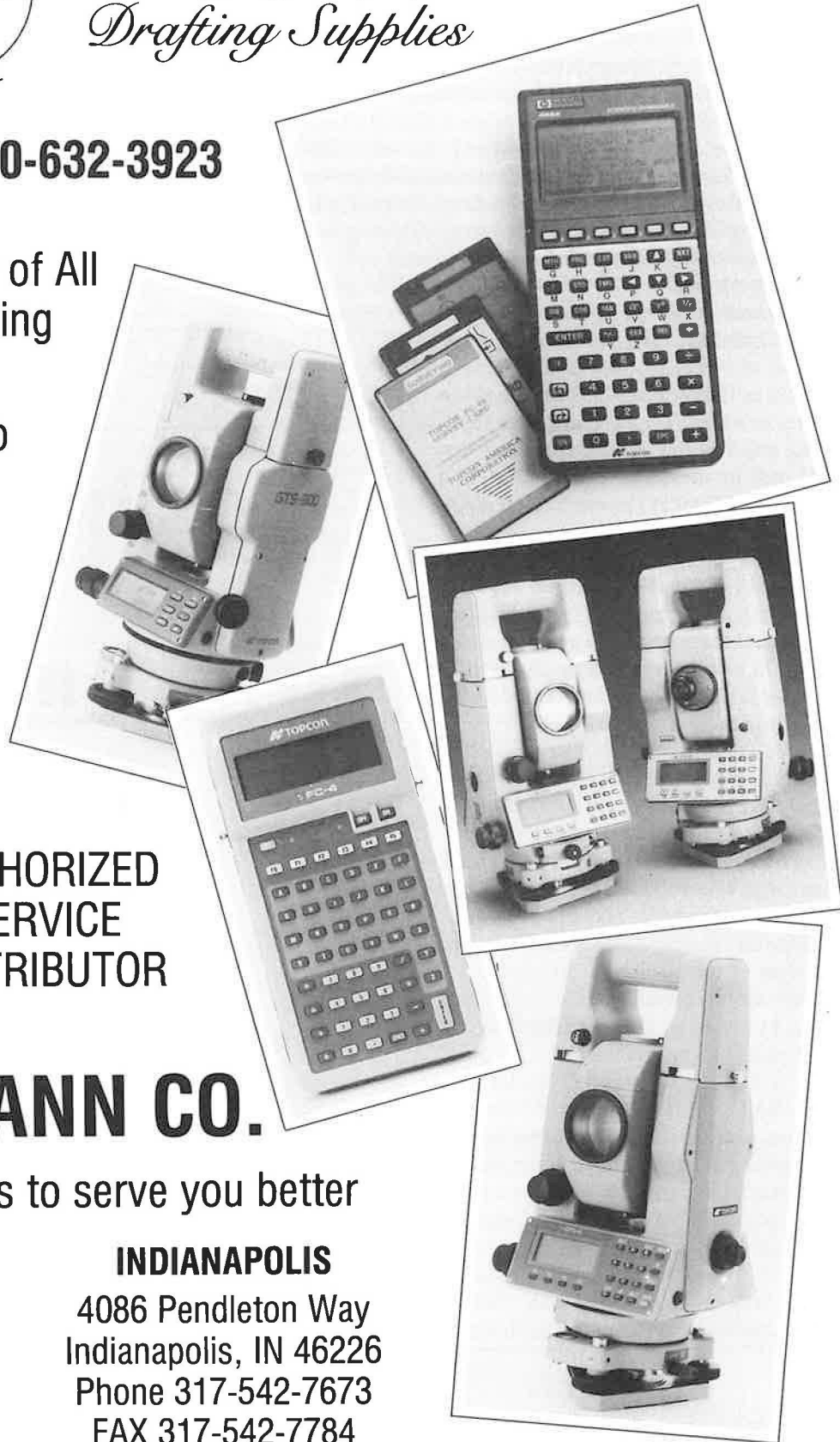
Now with two locations to serve you better

## NILES

2314 N. Fifth Street  
Niles, Michigan  
Phone 616-684-2116  
FAX 616-684-1588

## INDIANAPOLIS

4086 Pendleton Way  
Indianapolis, IN 46226  
Phone 317-542-7673  
FAX 317-542-7784



## MILLION DOLLAR SURVEYORS

*A Short Story by William A. Roth, PLS, PE*

Floyd and Eunice Farmer were in the autumn of their years. Frugal all their lives, they managed to support themselves and raise a son and daughter on their modest 100-acre dairy farm. They had already given Sis and Junior each 25 acres and were content to live out their years on the remaining 50 acres; but the creep of the suburbia had finally reached their once remote farmstead. It was time, Floyd and Eunice decided, to retire to Arizona.

Sitting in the office of Mabel Realtor, Floyd explained, "We saw your ad in the paper - you know the full page one that shows all of your million dollar sales agents. If anyone can sell our land, you can. How much can we get, how soon can you sell it? We need to move to Arizona, etc...blah blah."

"Well," said Mabel (known affectionately to her colleagues as Million Dollar Mabel - she usually hits that sales figure by April, May at the latest!), "you just came to the right place. Why, I expect that we can easily get half a million for the land as it sits. We'll sell your land faster than green grass through a cow in the springtime."

Floyd chuckled, "Yep, the barn can be a dangerous place at milking time in the spring, where do we sign?"

"By the way," said Mabel, "selling will be easier if the property is staked, and we have a map. We have a surveyor who has good prices, but if you had your land surveyed in the past you might call him. He has all the information, and it should be cheap because all you need are a couple of stakes and a map."

When Floyd and Eunice got home, Floyd asked, "Who was that guy we had survey those two 25 acre lots for Sis and Junior some years back? I can't remember his name."

"Just a minute," answered Eunice, "I remember coming across his map when I was looking for that prize winning pie recipe last year. Oh, here it says 'R.D. Surveyor', and here's his number."

Floyd called R.D. Surveyor and explained, "Eunice and I are up in years and in poor health and on fixed income. We want to retire to Arizona. We listed 50 acres with Mabel Realtor - maybe you know her (R.D. did - she laughed at his lot survey price 8 years earlier). She said we should have the land staked and a map made to help with the selling. She said it shouldn't cost too much 'cause all you need to do is pound a few pegs in the ground and make us a small map. Can you do it by next week this time?" R.D. knew that there was intense price competition, but a foot in the door for development of the land might prove beneficial later, so he gave Floyd a good price (from Floyd's viewpoint). In a week's time, R.D. set the "pegs" and provided the "map".

Two weeks later, the land sold. Three weeks later, R.D. received a call. "This is D.S. Developer. You come highly recommended by my boy. He told me you know all about the property and all about the municipal requirements and are one hell of a professional. I want you to be on the Green Acres team. This is a team effort, you know..blah blah...if we can negotiate a reasonable design price, the job is yours, and this is only the beginning. Why, we have plans for at least five other such projects in the area...blah blah. Now, what's your price?" (No one really

knows what D.S. stands for, but all who know him believe that it stands for "Damn Shrewd".)

R.D. thinks, "This guy knows about my talent and quality, and that's why he wants me." R.D. set out some numbers on a pad, did a few calculations, and announced his price. R.D. wasn't quite prepared for D.S. to go ballistic. "What!?!@#?", boomed D.S. as the phone shook, "I'm just looking for a reasonable price! Are you expecting to retire on this job? How can I ever make a profit with such a high design fee? Don't talk to me about your health and worker's compensation insurance costs! Do you know how much pipe costs these days?!? Don't talk to me about overhead and fancy equipment that just makes your job easier. The old guys didn't have that fancy equipment and did the job for a fraction of what you want. Do you know what a D-9 costs?!? What stone costs?!? I'll tell you what, give me a price I can live with, and we'll recommend you do the lot surveys in the plan, as long as you don't charge more than \$150 per lot." As D.S. dropped to sub-sonic, R.D. cut his price. (At least R.D. figured, he'd be able to meet expenses and avoid a layoff - he hoped).

And so, the project went forward. R.D. applied his years of education, continuing education, knowledge, and experience and managed to get the plans approved on the first pass through the municipality. Six months from D.S.'s first call, the ground was broken. And, incredibly, in only two year's time, the plan improvements were built, all lots were sold, and all houses were built and sold.

R.D. contacted D.S. about the next project. "This teammate is ready to rock-n-roll on the next project," said R.D. cheerfully.

"Well, my boy," answered D.S., "What kind of price can you give me on the next project? You know that pipe, concrete and stone costs are up."

"Well, I'm willing to go with the same terms. Wasn't I a valuable team member? Didn't I provide quality and timely plans?" answered a cautious R.D.

"Well, it's like this," said D.S. "a guy over in the next township will do the work for \$1,500 less than you. All you guys do pretty much the same thing - put lines on paper. I don't care what the plans look like as long as my project can be built, and I get my money and move on to the next project. The Green Acres team has been disbanded. If you come to your senses on your price, maybe we can do business."

A dejected R.D. managed to ask, "Well, can you at least forward the final payment per our agreement to cover the as built drawings?"

"Well, my boy," D.S. drawled, "I just got back from Las Vegas after a much deserved vacation - being a developer is a tough-as-nails business. Anyway, I dropped a cool hundred grand at one sitting at the blackjack table at Caesar's. I'll pay you when I pay you."

"Oh well," thought R.D., "at least I managed to cover most of my expenses - except for the total station the D-9 ran over."

*...continued Page 8*

**MILLION DOLLAR**

...continued from Page 7

The very next Friday (ominously the 13th), R.D. was huddling with Ernestine, his accountant. "Ernestine, we just finished a multi-million-dollar project, and we are still scraping the bottom of the barrel. Call our accounts receivables for this week. Just stick to the ones over 60 days and request that they pay us. We have a payroll coming up." Just then the mail came. Among the items was a postcard from Million Dollar Mabel showing the QE2 leaving New York. Written on it was: "Dear Teammate, after moving all the units in Green Acres, an extended cruise was just what the doctor ordered. Just wanted to say many thanks for all those short order surveys - they saved more than a few sales for me. By the way, having a great time - it's a shame you can't afford a cruise." (Obviously, she's out of range of ship-to-shore, "cause she didn't know that the team was disbanded).

Just then, a light started glowing within R.D. "What is wrong with this picture?" He jotted the following:

**Green Acres, a 100 lot subdivision**

|   |                                 |
|---|---------------------------------|
| Value of Raw Land   | \$400,000                       |
| <i>(now how much did I charge Floyd and Eunice for that survey? Ernestine, please look up that invoice)</i> |                                 |
| Price Per Lot, Average  | \$30,000                        |
| Value of Project  |                                 |
| Before Houses   | \$3,000,000                     |
| Price Per House, Average  | \$150,000                       |
| Value of Improvements and Houses  | \$18,000,000                    |
| Realtor Commissions   | \$1,300,000                     |
| Developer's Net   | \$1,500,000                     |
| Designer's Fee  | \$Just then the telephone rang. |

"This is Phil Adelpia Lawyer, Attorney at Law", announced the caller, "I represent 20 homeowners in Green Acres. Ten of my clients about the Miller tract. It seems you put their property line 10 feet into Miller's land. He had his land surveyed by some guy in the next township and found the encroachment. He has filed suit to remove my clients. Anyway, all the court costs, all the diminution of value, all the anguish, and, of course, my fee, totals \$100,000. Then the other ten clients all have homes on the low side along Oliver Douglas Drive. Seems they get flooded a lot when it rains hard. The cost of restoring damaged property and fixing your design problem, and of course my fee, is \$150,000 so that's \$250,000 we want from you."

R.D. was in shock. "I don't have that kind of money lying around."

"No problem, just pass the claim onto your professional liability carrier."

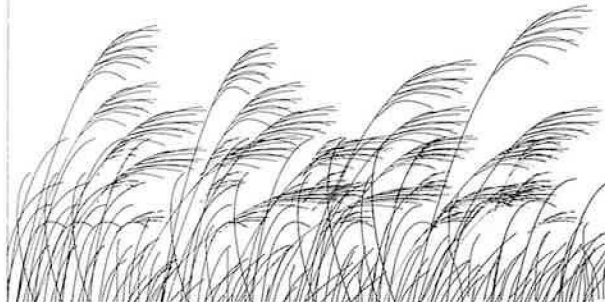
"I don't carry that insurance."

"Oh, so you are self-insured! Well,, just send me \$250,000 of your net worth by this time next week, and we'll be square. Thank you for cooperating and have a nice day."

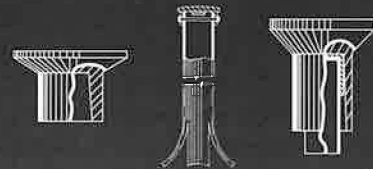
R.D. was nearing apoplexy, but managed to think. He remembered that there was a discrepancy between his deed and Miller's. But, thanks to Hermansen's boundary book, he knew that

...continued page 19

**"WHAT Survey Marker...?"**  
**"WHERE??"**



**SURVEY MARKERS  
MONUMENTS  
REBAR CAPS  
PIPE CAPS  
BENCH MARKS  
& ACCESSORIES**



FOR CATALOG CALL  
**(602) 882-7363 or 1-800-323-4578**  
OR WRITE:



**SURVEY MARKERS & MONUMENTS**

A Division of Desert Engineering Group, Inc.  
3162 E. 46th Street, Tucson, Arizona, 85713

**GEODETIC DATA SHEETS ON CD-ROM**

The National Geodetic Survey (NGS) announces the availability of geodetic data sheets for the north-central United States on Compact Disc - Read-Only Memory (CD-ROM). This product comprises data sheets for the States of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming. This is the first geodetic information product that NGS has offered using CD-ROM technology. Data sheets for other regions of the United States and other information products will be available on CD-ROM in the near future. The region covered by this CD-ROM was selected to assist in restoring geodetic control in areas affected by the recent Midwest floods.

The NGS Data sheet combines horizontal control (position) and vertical control (height) information in a single published format. It contains the same information as the one that NGS has been distributing since June 1992, including: the datum on which the

control point information is based, the method used to determine the horizontal coordinates or orthometric height, modeled geoid height, ellipsoidal height, modeled gravity, and Laplace correction, state plane coordinates and Universal Transverse Mercator coordinates, a description of where the mark is located and how to reach it.

An explanation of the terms and codes used in the data sheets and a program that can extract data for individual control points and perform other functions helpful in using the data sheet files are also included. The data sheet CD costs \$50; you may order it at the address listed below using VISA, MasterCard, or American Express, or by check or money order payable to DOC/NOAA. All funds must be payable by a U.S. bank.

NOAA, National Geodetic Survey, N/CG174  
1315 East-West Highway  
Silver Spring, MD 20910-3282  
Telephone: (301) 713-3242; Fax: (301) 713-4172

**5 UNITED STATES REGIONS AS PARTITIONED ON CD-ROM**



**ORDER FORM**

I am ordering \_\_\_ CD-ROM's of geodetic data sheets for the north-central United States as listed above at \$50 per CD-ROM. My check payable to DOC/NOAA is enclosed. Payment may also be made using VISA, MasterCard, or American Express. (Print name as it appears on Credit Card)

Name or Organization \_\_\_\_\_

MasterCard # \_\_\_\_\_

Type of Organization (Private, State, Federal, College, etc.) \_\_\_\_\_

Visa # \_\_\_\_\_

Address \_\_\_\_\_

Amer. Express # \_\_\_\_\_

Signature \_\_\_\_\_

Validation Date \_\_\_\_\_

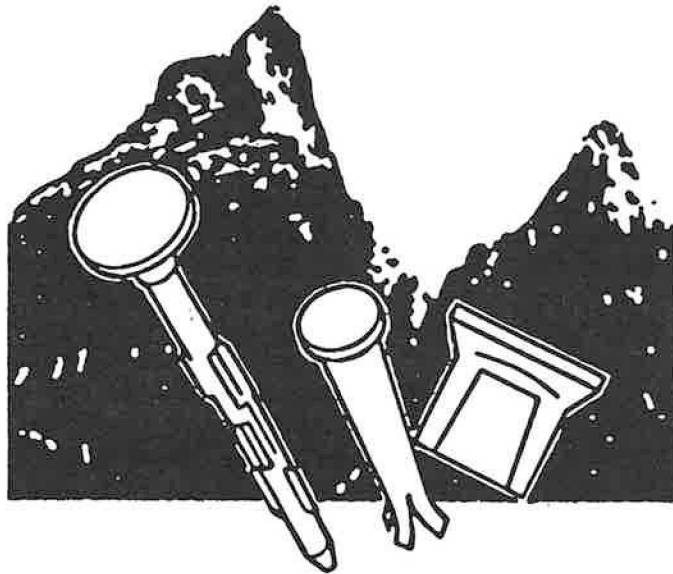
Expiration Date \_\_\_\_\_

Work Telephone # \_\_\_\_\_

Home Telephone # \_\_\_\_\_

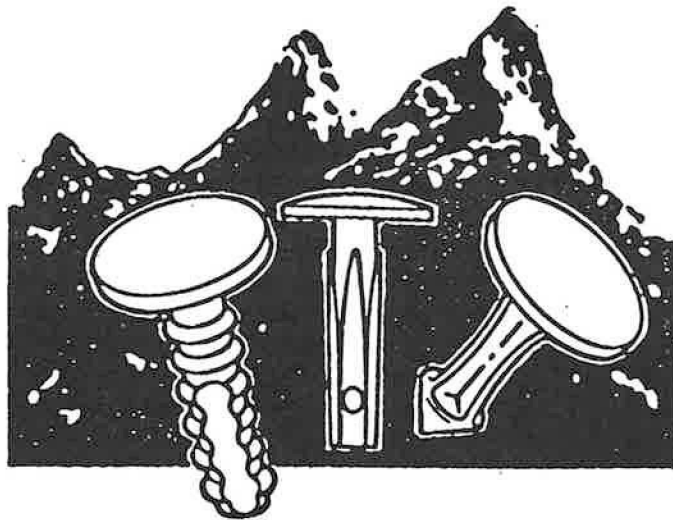
# SURV-KAP®

## LANDMARK DISCOVERIES



### Aluminum

- Survey Markers for Rebar,
- Concrete and Pipe,
- Monuments, Fluted Stakes,
- Delineator Posts,
- Access Covers



### Brass

- Concrete Markers
- Cast Brass

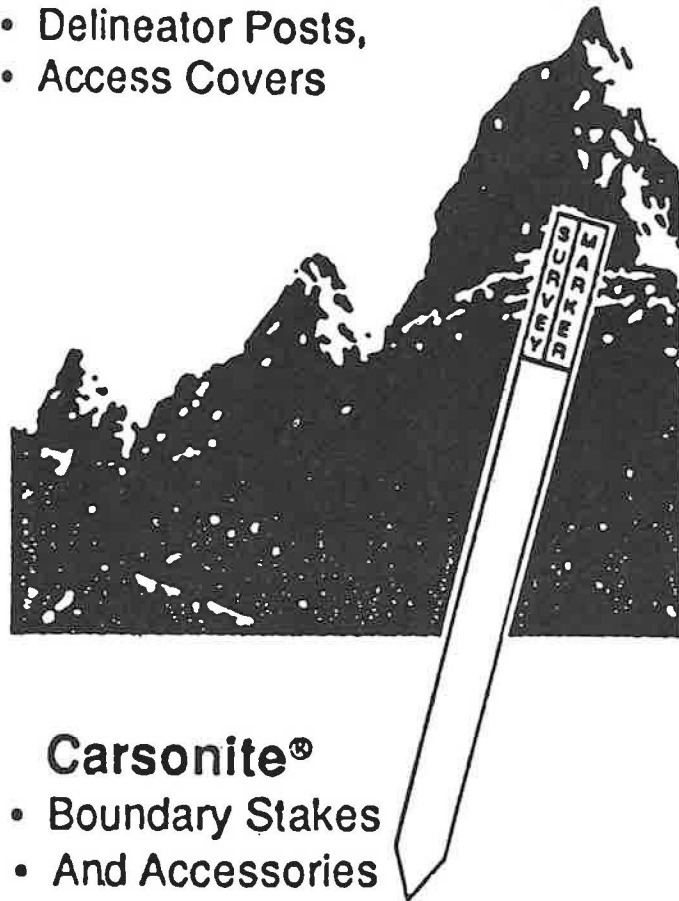
### Permamark®

- Plastic Markers

**FREE  
CATALOG  
AND PRICE LIST**

### Carsonite®

- Boundary Stakes
- And Accessories



### Stainless Steel

- Monuments
- Stakes

**CALL**

(602) 622-6011

1-800-445-5320

FAX (602) 792-2030

or WRITE:  
**SURV-KAP**

P.O. BOX 27367  
TUCSON, ARIZONA 85726

## THE 42ND ANNUAL CONVENTION OF THE ISPLS

by David R. Blankenbeker, PLS

This years annual convention was held in Louisville, Ky. jointly with the Kentucky Association of Professional Surveyors (KAPS). On January 26th thru 29th, approximately 250 surveyors met at the Galt House from across the State of Indiana and the Commonwealth of Kentucky.

The theme "Spanning the Centuries" was apparent from the beginning with actors/surveyors in buckskin, with compass and chain, greeting the arriving surveyors. Wednesday's sessions were devoted to the past with "Always a River" by Bill Kreisle and "Historical Markers and Boundary Trees" by Ken Anderson. The welcome reception that night began with hors'oeuvres in the hospitality room and finished with an excellent IMAX Theatre presentation of "The Fires of Kuwait" at the Museum of History and Science.

Thursday began with a prayer breakfast as surveyors continued to register. Sessions began at 8:00 a.m. and contained something for everyone, from insurance, NAD 83, and safety to land development and flood plains. The exhibit hall opened at 10:00 a.m. and buzzed with over 40 booths. A lip smacking Kentucky country dinner was served, buffet style, that evening followed by an incredible slide show on the surveying of Mount Rushmore by Warren Fisk, Rapid City, S.D.

Friday's program was highlighted by "Metrication" by Ken Curtis, "Practical Aspects of GPS" by Ray Leigh and "Methods of Research" by Milton Denny. After lunch, members of the state

boards of registration from both states participated in a question and answer session followed by our annual business meeting. A request by Dennis Findorf, a graduate student at Purdue University, for our help with the Indiana HARN was assigned to the GIS/LIS committee. New officers and directors for ISPLS were sworn in. The first ever distinguished surveyor awards were presented to 20 plus surveyors for completion of the requirements of the voluntary continuing education program. This years business meeting may have been a new record for brevity, lasting only one hour. The banquet featured the comedy of Dr. Tim Stivers and Dale Orem. Out going president Doug Herendeen presented the "Different Drummer" award to Pat Cunningham. Doug then passed the gavel to our new president Chris Marbach.

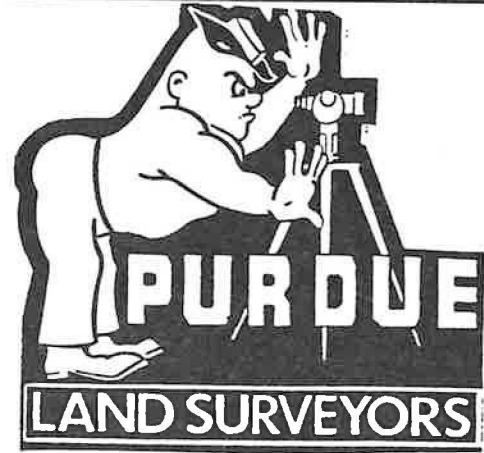
Saturdays program sponsored by KAPS consisted of "Business" by Milton Denny and "Professional Ethics and Boundary Law". Unfortunately the cruise on the Star of Louisville was cancelled due to high water on the Ohio River.

Special thanks to our convention chairman Vic McCauley whose efforts made this years event such a big success. We also would like to thank the convention core and sub committees along with the other members of the Initial Point Chapter of ISPLS and the Falls of the Ohio Chapter of KAPS, as well as the speakers and exhibitors without whose participation this convention would not have been possible.



**SURVEYING ENGINEERING  
22nd ANNUAL  
STUDENT RECOGNITION  
BANQUET**

March 26, 1994, 7:00 PM  
Hosted By:  
Purdue Student Chapter  
ACSM-ISPLS



**Where:** University Inn, (For Room Reservations: 1-800-777-9808)  
3001 Northwestern Avenue, (US 52 West)  
West Lafayette, IN  
Reduced room rate of \$55/night for Banquet guests

**Guest Speaker:** Dr. James Collins

**Topic:** "The impact of GPS on the Surveying and Mapping, and Civil Engineering Professions".

**Why:** Recognition of Graduating Seniors  
Recognition of Outstanding Senior  
Awarding of ISPLS and Central Indiana Chapter Scholarships

**Cost:** \$18.00 per person for alumni, faculty, or guests  
\$16.00 per person for students  
(Cost includes buffet, tax, gratuities, and program. There will be a cash bar.)

**Mail to:** Purdue Student Chapter ACSM/ISPLS  
Purdue University  
1284 Civil Engineering Building  
West Lafayette, IN 47907-1284

**Note:** Reservations must be received no later than  
**March 21.** Make checks payable to  
**Purdue Student Chapter ACSM/ISPLS**

-----please detach here and mail with payment-----

\_\_\_\_\_ Please indicate the number of persons attending  
(please photocopy if additional replies are needed)  
\$ \_\_\_\_\_ Total Amount Due, (Please Enclose Payment)

Print Name: \_\_\_\_\_

**MARYLAND FIRM WILL MAKE  
DIGITAL MAPS FOR USGS**

As part of an expanded partnership with private industry, the U.S. Geological Survey, Department of the Interior, has contracted with Photo Science, Inc. (PSI), Gaithersburg, Md., to produce digital orthophoto quadrangles for the USGS.

The contract signed Sept. 30, 1993, in Menlo Park, Calif., is one of a series of awards that the USGS will make to mapping firms that meet established federal guidelines.

Digital orthophoto quads, or DOQs, are digital images of aerial photographs that combine the image characteristics of a photograph with the geometric qualities of a map. Because orthophoto technology removes displacements caused by camera orientation angles and differences in the terrain, the resultant image represents terrain features in their true geographic positions. The DOQs are produced in quarter-quadrangle coverages, which means that each DOQ covers one-fourth the area depicted on a standard, USGS 7.5-minute topographic map.

DOQs are used by planners, engineers and government agencies to update changes in land use, transportation and utility corridors. The DOQs also can be used to analyze vegetation patterns, manage timber resources, assess wildlife habitats, delineate floodplains, and identify areas of potential soil erosion.

The USGS's National Mapping Division developed DOQ technology at its Menlo Park center, beginning in 1987. In 1991 and 1992 the USGS awarded two smaller contracts that have served as prototypes for the PSI contract. As part of the agreement, the

USGS will continue to monitor the work of the production contractors in order to ensure quality control over the finished products and to assure they meet all U.S. National Map Accuracy Standards.


"The demand for digital map data has grown tremendously and is now much greater than we can meet in a timely manner," according to Allen H. Watkins, chief of the USGS National Mapping Division, in Reston, Va. "Contracting makes sense. It helps us get the job done and it helps our customers."

John R. Swinnerton, chief of the USGS mapping center in Menlo Park, said selection of PSI was accomplished under provisions of Public Law 92-582, known as "the Brooks Act," which governs the selection of professional architectural and engineering services for government projects.


Upon completion of the DOQs, PSI will deliver them to the USGS. The USGS will then archive them and make them available in computer-readable formats, from its cartographic data-base distribution center in Reston, Va. A DOQ user guide is being developed by the USGS to provide more information to interested parties.

A fact sheet relating to DOQs is available from the USGS Earth Science Information Centers in Anchorage, Ak. (907-786-7011); Lakewood, Colo. (303-236-5829); Menlo Park, Calif. (415-329-4309); Denver, Colo. (303-236-7477); Reston, Va. (703-648-4106); Rolla, Mo. (314-341-0851); Salt Lake City, Utah (801-524-5652); Sioux Falls, S.D. (605-594-6151); Spokane, Wash. (509-353-2524); Stennis Space Center, Miss. (601-353-2524) and Washington, D.C. (202-208-4047).


**HAYES INSTRUMENT CO.**  
(Your Financial Partner)



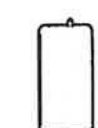
LEASE  
PURCHASE




COMPUTERS



SURVEYING  
SOFTWARE



DATA  
COLLECTORS



PLOTTERS

**HAYES  
SURVEYING SYSTEMS**

We configure surveying systems to your particular needs, including financing.  
Our Hayes "in-house" lease guarantees satisfaction and affordability.

**1-800-251-1280**

# GPS



## Surveying Made Easy and Affordable



**CMD & Associates, Inc.**  
GPS & Computer Sales, Training, and Service  
655 W. 13 Mile Rd., Rm. 203, Madison Heights, MI 48071

As a Midwest dealer for Trimble Navigation products, we offer *sales, rental, and training* of all Trimble GPS surveying and mapping equipment. We specialize in *customizing* a surveying system to best meet your needs.

To receive a demonstration or to learn more about how GPS can aid in your next project, call **CMD&A, Inc.** at **(810) 585-1110**.

## OBJECTIVE VS. SUBJECTIVE STANDARDS

by Knud Hermansen

Many surveying state licensing boards and professional organizations have grappled with establishing standards for professional practice. While practitioners frequently can be heard to discuss the complexity and scope of standards, there is little discussion concerning the form the standards should take. In particular, the parties have failed to address at the outset whether the standards should be objective (goal) or subjective (technically) oriented.

Objective or goal oriented standards attempt to establish what the outcome of performance should be. On the other hand, subjective or technical standards attempt to constrain the steps, operation, or performance in order to reach a certain goal. The difference has frequently been described as the difference between telling "what has to be done" versus "how it is to be done." Two examples of standards relating to monuments should help clarify the difference.

**Objective Standard:** Artificial monuments shall be located in such a manner and be of sufficient size, composition, and material that a surveyor of ordinary prudence would be left with a definite and firm conviction that:

1. The likelihood of disturbance is minimal,
2. Their life expectancy, under normal circumstances, will exceed 25 years,
3. The monument is capable of being detected with electromagnetic metal detectors,
4. The surveyor who placed the monument can be identified with certainty by inspection of the monument in the field; and
5. The monument is marked in such a manner and will be sufficiently visible that the status and importance is obvious to another surveyor or land owner of reasonable intelligence.

**Subjective Standard:** Artificial monuments shall consist of a minimum 5/8th inch diameter metal stake or rod no less than 30 inches long, containing a cap with the surveyor name and license number.

As can be seen from the example, a monument that meets the subjective standards will meet the objective standards. However, a monument that would meet the objective standards would not necessarily meet the subjective standards (e.g. a stamped brass disk with a magnet underneath cemented in a stone boulder).

Subjective standards have three advantages over objective standards. First, they tend to be more straight forward. As the example illustrates, the subjective standard typically fixes a more definite standard in far fewer words. In the example, there can be little doubt or dispute what type of monument will or will not meet the subjective standard. As a result, subjective standards are more easily understood and applied by the survey technician.

Second, the subjective standard is easier to check and enforce. Gray areas are fewer and narrower. Referring to the previous example, the surveyor that attempts to place a magnetic, stamped, metal disk amongst the stones in a stone pile is simply not meeting the subjective standard no matter how permanent or trustworthy

this form of monument would appear. Perhaps, a more compelling scenario to show the weakness of the example objective standard is the case where the surveyor uses a locust post surrounded by stones with a spike in the top and name carved on the one side.

Third, subjective standards create some uniformity and consistency among practitioners. Differences in price among practitioners will more closely reflect their individual efficiency rather than their professional whims. All surveyors will have to operate in a similar manner, using similar techniques, and can expect to reach similar results. As a result, those that can turn angles faster with more precision, buy their rebar at a lesser cost, and get more efficiency from their employees will have less expense in their survey. On the other hand, the objective standards will continue to allow one surveyor to plant field rocks with a magnetic tag for monuments while another may use tough magnetized plastic stakes that are less costly in an effort to meet standards.

There are six arguments that are frequently used to show the advantages of objective standards over subjective standards. First, objective standards enhance a professional image while subjective standards detract from a professional image. A competent professional providing quality service should not need to be told how to perform their services. By describing only the objective, the public is protected on the one hand while the professional can use their independent "professional" judgment, on the other hand.

Second, objective standards reduce potential liability while subjective standards expose the surveyor to more potential liability without necessarily improving the quality of the work. To illustrate this argument, reexamine the first example dealing with standards for artificial monuments. Now consider a likely scenario where a 2.5 foot long rebar encased in concrete in the ground. In this scenario the surveyor would by most opinions have done a credible and professional job. The surveyor would have conformed to the objective standards. However, the surveyor would not have met the subjective standards. As a result the surveyor is now exposed to possible professional and contractual liability (e.g. if they agreed in the contract to meet standards).

Third, objective standards provide the surveyor with more flexibility in their practice. As the last scenario shows, the surveyor practicing under objective standards has flexibility and leeway to adapt to a situation they may likely encounter. While an argument can be made that flexible standards are more likely to be abused, this argument can be muted by careful wording and forethought when writing the standards. Obviously, in the example, a surveyor is not operating unrestricted and would certainly not meet the objective standards using a wooden stake. A licensing board with experienced members could competently evaluate and judge where a surveyor's conduct is reasonable given a particular situation.

Fourth, objective standards are more adaptable to new technology. This argument is emphasized by trying to apply the following technical standards to new technology.

...continued Page 16

## STANDARDS

...continued from Page 15

1. Standard: All equipment designed to measure distance shall be compared no less frequently than twice annually to establish baselines. Application Problem: GPS equipment.
2. Standard: All monuments shall contain a cap inscribed with the surveyor's name and license number. Application Problem: In the not-so-distant future survey monuments will have bar or magnetic code strips containing information (date set, surveyor, client, standards, etc.). Why should surveyors use caps with the surveyor's name on it in this situation?
3. Standard: For every survey, a surveyor shall prepare a plan on archival quality inks and media. Application Problem: In the not-so-distant future, court houses, and the more sophisticated client (e.g. architecture firm) all demand digital survey data. Why should surveyors be required to draw a plat in these situations?

Fifth, objective standards are less costly to the public. Consider a second example of an objective and subjective standard to illustrate this argument:

Objective: "A surveyor will cause the public records to be examined to a depth and scope that a reasonably prudent surveyor would be left with the definite conviction that...all information fixing the client's record boundary has been located".

Subjective: "A surveyor will examine all records in the client's and adjoiner's chain of title back from the present deeds to arrive at a deed from a common grantor".

Now assume a surveyor is hired by a client to survey their boundary. The surveyor has obtained both the client deed and adjoiner's deed from the courthouse. The surveyor has also located the 1865 subdivision map showing the original lotting scheme which matches not only the calls in the client and adjoiner's descriptions but the evidence in the field. Under the subjective standards, the surveyor must nevertheless examine all the records back to 1865 to comply with the standards. Under the objective standards, the surveyor could forgo a lengthy, costly research and be confident they met the objective standards. (Admittedly, most surveyors today would forego the research-but they would not be conforming to subjective standards and could therefore be liable for breach of contract or warranty not to mention professional liability!)

Sixth and finally, subjective standards do not protect the public any more than objective standards and in some cases protect the public less. I believe an examination of the surveyor's field records for surveyors practicing in states with subjective standards will reveal that most surveys do not meet the subjective standards effective at the time of the survey. In fact, some recorded plans on their face do not meet standards. There are three reasons for this situation. First, technical standards tend to be too rigid and inflexible and, as a result, the practitioner has no alternative but violate the standards in a Catch-22 situation. Second, because technical standards are created to provide a step-by-step approach to a situation, they either fail to cover all situations or become so voluminous they become incomprehensible. As a result, surveyors through ignorance or improper analysis depart from the standards. Third and finally the standards can become so burdensome and out of step with current practice, they are ignored by practitioners. Is

the public better off with standards that are not followed or not enforced?

Consider a situation where a woodland owner requests a retracement survey. The surveyor, knowing the original survey was performed with a chain and compass, performs the retracement using the same equipment and procedures as the original surveyor. Along the way, the surveyor discovers old evidence along the compass line and accurately monuments the boundary. This surveyor has fulfilled the expectations of the client without detracting from the adjoiner's title, albeit this surveyor has not met the subjective standards. Sometime later, a second surveyor performs the same survey. The second surveyor takes great care to turn the angles the number of repetitions required by the subjective standards and meets all other subjective standards. Unfortunately, the surveyor does not survey along a compass bearing choosing instead to take the traverse down logging roads to minimize the number of traverse stations required. In so doing, the surveyor misses valuable evidence of the original survey. As a result, the surveyor comes to a different opinion on the boundary location. The second surveyor's opinion is erroneous.

This plausible scenario presents that fact that a surveyor using less complicated equipment and following original procedures can perform a more accurate survey (not necessarily more precise) than the second surveyor who used more sophisticated equipment and met the subjective standards.

These arguments are sufficient to emphasize the advantages and disadvantages between objective and subjective standards. Certainly each has their place.

...reprinted from *The Empire State Surveyor*, September 1991.

## INDIANA SURVEYOR'S HISTORICAL SOCIETY HOLDS ANNUAL MEETING

The Indiana Affiliate of SHS held its annual membership meeting January 27, 1994 in Louisville, Kentucky. They met in conjunction with the Indiana Society of Professional Land Surveyors/Kentucky Association of Professional Surveyors Bi-State Convention. The Indiana Surveyors Historical Society had been granted a free booth space where they displayed early American surveying instruments and promoted SHS membership.

The Indiana affiliate had also set a goal to establish a Kentucky SHS affiliate. They allowed their southern counterparts to attend the ISHS annual business meeting prior to dividing into two groups. Approximately 45 members or potential SHS members, attended the joint meeting.

Brad Rayl of Anderson was elected ISHS president for the 1994-1995 term; Patrick Manship of Anderson was elected affiliate secretary. Several committee reports were given prior to the new board of directors to set 1994 goals.

## GET IT RIGHT - - GET IT IN WRITING

by Robert Foster P.E., P.L.S.

A dispute between a surveyor and client sometimes revolves around actual technical performance, but more often it is a matter of process. In other words, what often causes the problem is not whether the surveyor measured accurately but whether the surveyor followed the expected procedures. The problem is scope definition: As well as making a survey and plan, was the surveyor expected to set monuments at all corners of the property (an optional service in many jurisdictions)? As well as staking the property line, was the surveyor expected to make a plan of the property? When a survey is ordered, is the difference between a retracement survey and a topographical survey clear in the client's mind? These are all scope definition issues, and the reason for much of the trouble is the lack of scope definition in a written agreement...contract...between the surveyor and client.

Considering how often we have been lectured by lawyers and professional liability insurers in recent years on the need for written contracts, it is surprising that so many surveyors continue to work with their clients on the basis of a handshake. While conducting more than 30 seminars on the subject of the new Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys in the past 10 months, I find at least 30 percent of surveyors admitting to working without written contracts. Surveyors ought to consider a few cogent points on the subject of contracts:

\*It is not an insult to ask a client to sign a contract. It is as much for the client's protection as for the protection of the surveyor to commit to writing what has been agreed to orally.

\*A contract should not be seen as a possible weapon to be used against the surveyor. A carefully written, well thought out contract by a surveyor who knows his or her business represents protection for both parties. (Believe it or not, some surveyors are still suspicious of the written contract as a way for a client to keep a survey's feet to the fire, in an unfair insistence on compliance "when things go bad.")

\*There is nothing mysterious about contract writing, nor need of a contract to be a complex document. A simple service can be described by a one-page agreement. But a complex survey involving several types of services, e.g. control survey, retracement survey, topographical survey, planning, subdivision, public presentations, construction layout, etc., will require a complex and detailed contract. A lawyer need not be hired to prepare every contract, though a surveyor is well advised to consult a lawyer to review the surveyor's standard contract for form and conditions. (ACSM's *Sample Contract Manual* suggests several standard forms of contract.)

\*Care should be given to writing the contractual scope definition. Simply to describe the service as a survey of the property described in deed book X, page Y, leaves too much room for future dispute. Poor scope definition is a prime cause of surveyor/client disputes, and it is these disputes that often lead either to litigation or alleged negligence or to actions brought to boards of registration alleging surveyor malfeasance.

\*In arriving at a proposed fee a surveyor often makes certain assumptions regarding weather conditions, recoverability of evidence, accessibility of the site, and so on. Reality has a way of contradicting assumptions, making a loser of what should have been a profitable project. Assumptions upon which a fee is established should be clearly spelled out in a contract and the fee made subject to the existence of those assumed conditions.

\*A contract should clarify an issue of critical importance to the surveyor in private practice. Whose responsibility is it to accomplish title research? Who is expected to find all encumbrances, takings, easements, entitlements, and such, that affect the ownership of the property to be surveyed? The contract should clearly spell out who has responsibility for the production of ownership documents.

\*Standard boiler plate contract provisions can be preprinted to be attached to every contract. A Standard Contract Provisions page might include provisions for right of entry, change of scope, termination of services, ownership of plans and documents, billing procedures, service charges, policy on use of retainers, and several provisions for a limitation of the surveyor's liability.

\*The surveyor and client can contractually agree to limit the surveyor's liability exposure to a defined amount. This may be the amount of the fee or it may be some fraction (or even the limit) of the surveyor's professional liability insurance coverage.

\*The surveyor and client can agree to a contractual "statute of limitations" provision that can set a specific time limit during which the client may bring a charge of negligence.

Note that these limitations of liability clauses affect the surveyor/client relationship and will not carry over to third-party liability issues. We are advised that they will only be upheld when fairly agreed to by both parties to the contract, assuming both parties enter into the agreement willingly and knowledgeably. Nonetheless, they are valuable provisions and can be effective in putting a cap on the surveyor's liability, which is normally far in excess of fee and has a durability in time beyond reason.

The written contract should be one of the surveyor's normal business forms, as much as the daily time card, the abstract of title, and the final plan checklist. They are all part of the surveyor's quality control/quality assurance plan which is, itself, becoming a standard office form for the surveyor with marketing, excellence of service, and professional liability on his or her mind.

*Robert W. Foster is the immediate past president of ACSM. He is now in private practice offering professional consulting services in arbitration, dispute resolution, and litigation involving surveying and civil engineering issues.*

Permission to reprint this article was given by the author and CIVIL ENGINEERING NEWS where it was originally published in the October 1993 issue.

## SURVEYOR'S HISTORICAL SOCIETY NEWS

by Roger Woodfill, PLS, Lawrenceburg, Indiana

Recently, I purchased two reproductions of older surveying catalogs. I recommend both of the paperback issues for your personal libraries. They may be obtained from:

David Garcelon  
10 Hastings Avenue  
Millburg, MA 01527-4314  
Phone: (508) 754-2267

He wrote the following "Introduction" for the reprint of *Engineers' and Surveyors' Instruments of Precision*, a C.L. Berger and Son catalog.

*The 1900 Hand-book and Illustrated Catalogue of the Engineers' and Surveyors' INSTRUMENTS OF PRECISION made by C.L. Berger & Sons* was the first catalogue issued by this famous Boston instrument maker after the company was founded on October 18, 1898. As such it is a rare and wonderful collectors' piece, representing an excellent reference work for students and collectors of American scientific instruments.

Christian Louis Berger was born in Stuttgart, Germany, on September 26, 1842. By the time he was 24 years old he had apprenticed for four years with German instrument maker Christian Seeger, had studied mechanical technology for one year at the Royal Polytechnic Institute in Stuttgart and had worked for several instrument makers including F.W. Breithaupt & Son of Cassell and Thomas Cooke & Sons of England. In 1866 he made the long voyage to America and worked for Thomas Upham in Boston; four years later he went to work for Edward S. Ritchie, a maker of philosophical (scientific) and nautical instruments. One year after joining the Ritchie firm and with about 14 years of instrument making experience "under his belt," C.L. Berger joined with George L. Bluff on October 28, 1871, to form the firm of Buff & Berger, with a factory at 9 Province Court in the heart of downtown Boston. This was just two blocks away from the old State House where less than 40 years earlier Simeon Borden had set up the large Troughton & Simms theodolite in its spire to make triangulation observations for the world famous *Trigonometrical Survey of Massachusetts*. The five-story brick factory building was next door to the Province House, which was the residence of the Royal Governors before the American Revolution.

Christian Louis Berger very quickly gave the firm of Buff & Berger a reputation for high quality work and a willingness to design and build precision instruments to meet the needs of the engineering and surveying professions. The firm soon had dividing engines that would give least counts of 5 seconds of arc. Berger Instrument Company in the Mattapan section of Boston still has the 24" Jesse Ramsden dividing engine that Buff & Berger acquired in the last half of the 19th century. It was also during the Buff & Berger years that the company acquired a dividing engine made by William Wurdemann, the first "Chief Mechanic" of the U.S. Coast Surveys' instrument shop.

C.L. Berger had two sons: William Albert Berger was born December 16, 1876, and Louis Herman Berger was born about 1

1/2 years later on March 21, 1878. During the partnership of Buff & Berger both of C.L. Berger's sons were sent (between 1894 and 1898) to apprentice as instrument makers with L. Tesdorpf of Stuttgart, Germany. It is interesting that John L. Saegmuller, son of the famous instrument maker George N. Saegmuller, apprenticed to Tesdorpf at the same time as the Berger boys did.

During the 1890's the relationship between Christian L. Berger and George Buff became strained, and finally reached a point of no return. On October 18, 1898, they dissolved their partnership and each formed his own company; Berger, with his two sons, formed the partnership C.L. Berger & Sons. The Bergers retained the 9 Province Court establishment while George Buff and his sons moved to the Jamaica Plain section on Boston.

At the time of the dissolution of the partnership, the Buff & Berger company had issued approximately 2900 serial numbers; some of the 2900 instruments were not complete and were distributed between the two men. From time to time, instruments appear with either C.L. Berger & Sons or Buff & Buff's name on them, with serial numbers under 2900 - these were obviously started during the Buff & Berger partnership.

It is clear that C.L. Berger worked closely with both the practitioners and teachers of surveying, navigation, and engineering. He developed many geodetic instruments in close cooperation with the United States' premier surveying organization, the U.S. Coast and Geodetic Survey. He gave lectures at such Boston area universities as M.I.T. and Northeastern. Many surveying texts used "cuts" from C.L. Berger's catalogues. The Bergers continued to improve and create new instrument designs; and although the company has changed hands twice since 1947, it has until recently, under its chief engineer David St. John, been doing prototype design and construction.

This reprint allows both aspiring and advanced students and collectors to acquire a wealth of information about great American mathematical instruments from a maker located in a city that has been one of America's centers of science since colonial times. This reprint deserves a place in the library of every student or collector of American scientific instruments.



Indiana Surveyor's Historical Society booth at the 1994 Bi-State Conference.

## MILLION DOLLAR

...continued from page 8

he had senior rights based on that 1815 conveyance found. Also, the preponderance of field and documentary evidence put the line here he put it. Just then, R.D. remembered something he heard at one of Bob Foster's continuing education seminars:

*You don't have to be wrong to be sued;*

*You don't have to be guilty to lose.*

R.D. thought to make sure his attorney was up on the finer points of boundary law.

That drainage problem, though, was another matter. R.D. managed to contact D.S. Developer. "Listen, D.S., we have a claim for flooding of those low-side lots we put along Oliver Drive. You remember, the ones you insisted I add even though I advised against it. They want \$150,000. What are we going to do?"

"What do you mean 'we', snorted D.S. "Sounds like you have yourself a problem. I only build what you tell me to build and, after all, you're the professional. You say I insisted? Do you have that in writing? You said you advised against it. Do you have that in writing? As I recall I merely suggested that we might put lots on the low side and you should have known there would be problems.

You're the professional. I hope everything works out for you."

By this time, it was 4:00 p.m. The crew was just returning from the field, and the office was full of the sounds of people preparing for a relaxing weekend. R.D. never felt so miserably alone.

*Rasputin Damocles Surveyor was the proud son of Russian and Greek parents. From early boyhood, he went by simply R.D. What he didn't know was that many with whom he did business thought that R.D. stood for "Really Dumb".*

...reprinted from *The Pennsylvania Surveyor* - August 1993

## PROFESSIONAL DEVELOPMENT "DISTINGUISHED SURVEYORS" (1992-1993)

The following land surveyors, having completed the Voluntary Professional Development Program as outlined by ISPLS, are hereby granted the membership class of "Distinguished Surveyor" by the Indiana Society of Professional Land Surveyors. Said Professional Development was obtained by these professional land surveyors as a result of the efforts a participant makes to grow as an individual and as a professional in the practice of land surveying. It involves education, self-study, research, participation, contribution and service.

This certificate of Achievement is presented to the following:

Kenneth W. Anderson  
John W. Bauer  
Paul L. Bender  
Perry D. Cloyd  
Bradley S. Cramer  
Evan J. Evans  
Mark A. Gardner  
James A. Gorski  
E.R. Gray, III  
Anthony M. Gregory  
Richard L. Hudson  
Eric A. Johnson

Gary Kent  
Hershel W. Manhart  
Christian F. Marbach  
John R. McNamara  
Robert D. Palm  
Alvin L. Paul  
John E. Porter  
Bradley A. Rayl  
Gordon L. Richardson  
John H. Silnes  
Jeffrey D. Souder  
Loren K. Stackhouse  
Roger Woodfill

## COMPLETED CAREERS

H.T. KIRK, 75

Past ISPLS President

H.T. 'Tom' Kirk, 75, graduate of Purdue University, civil engineer and land surveyor, died November 12, 1993 at his home in San Francisco, California. Tom was born and raised in Rensselaer, Indiana. After high school he served as a navy pilot in World War II. He saw continuous action in the South Pacific from 1940 to 1945 and was decorated many times. At his retirement from the Navy he held the rank of Captain.

Tom returned to Rensselaer in 1948 as a Land Surveyor and soon thereafter became the Jasper County Surveyor. He held that office until 1964 and then worked as City Engineer for Rensselaer. He was in private practice until 1966. During this period, Tom returned to Purdue University for a Master's Degree in Civil Engineering. He was past president of ISPLS having served in 1965.

In 1966 he moved to San Francisco where he worked as an Engineer for the California State Highway Department until his retirement in 1992.

ANTHONY PAVELL, JR. 67

Anthony 'Tony' Pavell, Jr., 67 Registered Land Surveyor and Civil Engineer of Monticello, Indiana, died Thursday, August 26, 1993 at White County Memorial Hospital.

Tony was born in Chicago, Illinois on Dec. 16, 1925. On May 29, 1949 he was married to Mary A. Hilton, who survives. He is also survived by one son, Lawrence Lee Pavell of Carpentersville, Ill; two daughters, Mrs. Peter (Cathy Louis) Dyer of Monticello, and Mrs. Clark (Nancy) Raver of Jasper, Ala; two sisters, Emily (Chas) Robbins of Brookston and Anina Sunday of Lombard, Ill.

He served in the U.S. Army in World War II and earned the Purple Heart and the Oak Leaf Cluster. He was injured while fighting in the Philippines.

Tony graduated from the Purdue School of Engineering in June, 1950. War wounds sent him into the hospital until the fall of '50. He began his career with the Indiana State Highway Dept. working in design. He worked on numerous projects throughout his professional life. U.S. 41, I-65 from I-90-94 to U.S. 24, the Tri-State, and numerous bridges are to Tony's credit. He supervised the widening and resurfacing of Highway 24 east of Kentland to Remington and Highway 43 south of Reynolds.

Tony worked at the Jasper County Highway Department as their Engineer for 4 years. During which time he supervised the construction of many of the County's Bridges, refurbished the County Courthouse, which is now in the National Register, and designed and supervised the construction of the present County Highway Garage, west of Rensselaer, Indiana.

# NSPS GOVERNOR'S REPORT

by E.R. Gray III, PLS, Columbus, IN

The Fall ACSM/NSPS meetings were held in Minneapolis, Minnesota in conjunction with the "GIS/LIS '93 Annual Conference and exposition". Sponsoring associations included the American Congress on Surveying and Mapping (ACSM), the American Society for Photogrammetry and Remote Sensing (ASPRS), AM/FM International (AM/FM), the Association of American Geographers (AAG), and the Urban and Regional Information Systems Association (URISA).

Attendance of the business meetings left me without time to attend any of the workshops or educational sessions. The workshops and educational sessions included such topics as: introduction to GIS, introduction to GPS, effective use of the total station for surveying and GIS/LIS, the Wisconsin approach for statewide land record modernization, GPS applications, wetlands and riparian zones, and emerging trends in GPS. These were only a few of the sessions presented by more than 270 speakers. If the topics appear to be GIS/LIS orientated, they were. Keep in mind that this conference was primarily directed at GIS/LIS.

ACSM has however, come under fire for the lack of "grass roots" sessions for the typical land surveyor. The Great Lakes Council had compiled over 10 surveying oriented presentations for this conference, all but 1 were rejected. It's my understanding that concerns have been expressed by NSPS, and future conferences can expect to find more "grass roots" programs. I fully support this direction, however not to the detriment of GIS/LIS and GPS programs. "Grass Roots" Surveyors or not, we can not turn our backs on this technology.

As with others, this was a very busy conference. I attended the following committee and business meetings:

Saturday, October 30

Great Lakes Council Meeting, 3:00 pm. thru 5:00 pm.

Sunday, October 31

NSPS Board of Governors, 8:00 thru 5:00 pm.

Monday, November 1

FEMA Advisory Task Force Meeting, 8:00 am. thru 10:00 am.

Surveyors Historical Society Meeting, 1:00 pm. thru 5:00 pm.

Tuesday, November 2

NSPS Board of Directors, 8:00 am. thru 5:00 pm.

Wednesday, November 3

ACSM Board of Direction Meeting, 8:00 am. thru 5:00 pm.

I left the Conference with 15 pages of hand written notes and received 58 pages of minutes and other documentation later. Assuming you don't want a verbatim report, I will try to summarize the meeting as follows.

## GREAT LAKES REGIONAL COUNCIL (GLRC)

This was an interesting meeting because two separate "called to order" GLRC meetings took place at the same time. The confusion was created by last minute room changes. I am not sure what was discussed at the other meeting, but with five of the Great Lakes present we were perfectly satisfied to start our meeting without the Chairman.

Despite having GLRC presenters rejected at the conference, we are going to try it again at the spring conference. A resolution was adopted in regards to "Grass Roots" sessions and was to be sent to the NSPS President with copies to ACSM Executive Director, John Lisack, Jr.

Although, a representative from Pennsylvania was present no official request has been made to join GLRC. Pennsylvania had indicated an interest to join the GLRC at a previous meeting, I hope they haven't lost confidence.

Various other issues were discussed, including lack of attendance by our official Chairman.

## BOARD OF GOVERNORS (BOG)

The Board of Governors was represented by forty-one states. Curtis Sumner, chairman, presented a brief report. He noted that once again NSPS sponsored the surveying merit badge program at the 1993 Boy Scout Jamboree held at Fort A.P. Hill in Virginia. John Lewis, Virginia, ran the program for NSPS for the entire ten days. Lewis will be developing a pamphlet on how to teach surveying to scouts. Curt also announced his plans to run for reelection to the chair of the BOG in 1994.

Over sixty business items and reports were handed out during the BOG meeting. The various issues are discussed later in this report.

David J. Sherrill, PLS, of Illinois was awarded the first "Key Governor Award". David has been very active in the railroad abandonment issue.

Governors were assigned to five different task committees. These task committees are assigned various action items for review after they receive a second from the floor.

Robert R. Prescott, LS, (NY, Secretary BOG) reported on the Map/Plat Contest. The Plat/Map Contest is an annual contest with affiliate states providing the entries. Maybe ISPLS will participate in this contest in 1995.

Thomas W. Brooks, Jr. LS (AL, BOG) moved a request that "the ACSM Balloon Note Task Force Committee become active and immediately place the ACSM building up for sale," the motion was seconded, but died in Committee.

## FEMA ADVISORY TASK FORCE MEETING

The following areas of concern were brought before the FEMA Advisory Committee. The meeting was attended by committee members, interested parties and representatives from FEMA.

1. Concerns were expressed about the quality of the benchmarks shown on the FEMA maps.
2. Concerns were expressed about financial institutes accepting determination of buildings being located in a flood hazard area without any type of certification by a licensed professional.
3. A request was made to show available N.G.S. benchmarks on any new map.
4. It was also noted that a North Carolina Land Surveyor had pay \$180,000 in damages plus court costs after establishing a

flood elevation for a new building in error. He had used a FEMA reference elevation. The surveyor that was verifying the elevation was using an NGS Benchmark when the error was discovered. In addition to paying damages, the State Licensing Board revoked the Surveyor's license.

## RAILROAD ABANDONMENT

This issue is still not settled. The Interstate Commerce Commission requested additional information be submitted by November 19, 1993.

## NAVD 88

ACSM adopted the following policy statement: "The American Congress on Surveying and Mapping encourages all states to enact legislation adopting the North American Vertical Datum of 1988 (NAVD 88) as defined by the Coast and Geodetic Survey, as their official vertical datum. The NAVD 88 would become the official civilian vertical datum for surveying and mapping activities.

The ACSM supports educational programs in the use of NAVD 88 and encourages the densification of control stations on the new datum to allow greater use of NAVD 88 by the surveying and mapping community".

## MEMORANDUM OF UNDERSTANDING ACSM/NSPS

ACSM approved a memorandum of understanding (MOU) between ACSM and NSPS.

The MOU places Pat Canfield, NSPS Coordinator in the direct employ of NSPS. It allows NSPS to employ all staff personnel necessary to fulfill the goals and objectives of NSPS. ACSM will provide suitable and acceptable work space at ACSM headquarters for NSPS staff.

## NSPS ACTION TO MEET WITH WESTERN FEDERATION OF PROFESSIONAL SURVEYORS (WFPS) RESCINDED

The NSPS Board of Directors, in a 12 to 3 vote, took action to hold the fall 1995 NSPS business meetings during the WFPS Convention in Denver. This was to be in lieu of a joint meeting with GIS/LIS-ACSM. This action was taken without input from the Board of Governors. During an NSPS BOD Conference call on November 24, 1993, this action was rescinded. It's now my understanding that the issue will be before the Board of Governors at the Spring Conference in Reno.

## NATIONAL GEODETIC SURVEY USERS SERVICES

The 50-page verbatim of the special forum in New Orleans on the future of the National Geodetic Survey User Services can be acquired by sending \$5.00 to NSPS to cover postage and copying.

## ACSM AGREES TO INTEREST PAYMENTS TO NSPS

ACSM approved the payment of \$1,000.00 per year for 6 years to NSPS to cover interest owed to NSPS.

## ACSM EXECUTIVE DIRECTOR CONTRACT

NSPS Board of Directors by "Unanimous vote (straw poll) of the NSPS Board to direct the NSPS President and strongly suggest to the NSPS/ACSM Directors to vote against a renewal of the ACSM Executive Director's (John Lisack, Jr.) Contract". The ACSM Board of Direction considered this issue in executive session. Once the meeting room was reopened the following motion was approved: "The executive committee and executive directors prepared a contract to be presented to the (ACSM) Board

for approval by the Reno Board of Direction Meeting". More on this after the Reno Conference.

## JOINT GOVERNMENT AFFAIRS (JGAS)

The American Society for Photogrammetry and remote sensing (ASPRS), because of financial problems, has withdrawn from previous funding (\$15,000.00) for this program. NSPS approved immediate funding not to exceed \$10,000.00 to cover expenses for legal consultation for the JGAC on the railroad abandonment issue and the HUD washout survey issue.

## CLEARINGHOUSE FOR CEU'S

NSPS and ACSM are to assign a group to formulate a process to establish a clearinghouse for certification of continuing education courses. Continuing Education Units (CEUS) are to be made available to those who attend the education sessions at the spring NSPS/ACSM Conference in Reno. With more and more states requiring continuing education of their registrants, including Indiana, this will be a real plus.

## RECRUITMENT OF NSPS MEMBERS

It was noted that NSPS membership is presently declining at a rate of 15% per year. NSPS now has less than 5,000 members or half the number of just a few years ago. Among other items, NSPS recommends that introductory dues be one half that of regular dues for the first year member.

## MORTGAGE INSURANCE SURVEYS (WASHOUT)

Nancy L. Parke Government Affairs Director reported on the progress of collecting information from Surveyors on wash-out surveys. Wash-out surveys occur when a surveyor waives fees for a mortgage type survey if the loan does not take place. In exchange the surveyor will be referred additional surveys. Nancy has been working with HUD on the legality of this arrangement. Aside from the potential illegal nature of the arrangement, it is felt that it can impend the professional judgement and objectivity of the surveyor.

## CONSTRUCTION SURVEY STANDARDS

NSPS construction stakeout standards are available through the ACSM bookstore to members for \$15.00.

## MINIMUM STANDARD OF PRACTICE

Albert D. Frieze reported on the status of the NSPS property Survey Standards. The first draft was made available to the Board of Governors. The final draft should be ready by the next BOG meeting in Reno. Concerns were expressed on possible conflicts with standards individual states may have adopted. It may be more appropriate to adopt the proposed minimum standards as a "model".

## SURVEYORS HISTORICAL SOCIETY (SHS)

Michael Shackelford, E.R. Gray, and Cliff Lewis were declared the winners for the two-year directorship. Ray Connin was appointed to complete the one year remaining term of Roger Woodfill. Roger had resigned earlier to serve as executive secretary of SHS.

The following 1994 officers were elected: Chairman, E.R. Gray; Vice-Chairman, Ray Connin; Secretary/Treasurer, Russ Kastle.

A prototype of the 1993 roster was approved and Roger was directed to print and distribute the roster.

The BOD approved a balanced budget of \$9,150.00 for 1994.

...continued page 22

Milton Denny of Alabama has agreed to advance some front money if SHS can obtain permission to reprint the "Abe Lincoln Book".

A plaque was presented to the Michigan Museum Foundation for their past support and cooperation.

The Mount Diablo Surveyors Historical Society was accepted as an affiliate of SHS.

Russell E. Kastelle submitted a report on the post card project. Five hundred and twenty five picture post cards of a, Keuffel & Esser Company, Surveyors Compass used in the early years of minning in North Dakota were printed. Members should have received their copy as their membership renewal notice by now. This and future cards of various vintage survey instruments are expected to become a collectable.

Roger Woodfill is now the Executive Secretary for SHS. He has been busy consolidating SHS cash assets as well as inventorying SHS equipment. We all owe Roger a debt of gratitude for all his hard work. I believe Roger will provide the much needed stability for SHS to continue to grow.

Thank you for the opportunity to serve as your NSPS Governor. Please contact me at 1-812-379-1525 if you have any questions or comments.

## P.O.B. ANNOUNCES NEW SEMINAR ON CONSTRUCTION SURVEYING

P.O.B. Publishing Company, publisher of P.O.B. Magazine, announces the debut of its newest seminar - Construction Surveying.

Construction Surveying is a one-day, six-hour program designed for surveyors, civil engineers, and field crew personnel interested in improving their construction surveying skills. The speaker, Milton E. Denny, PLS, is a well-known, national speaker on surveying and mapping topics. He will discuss project start-up, construction stake-out, construction surveying equipment, limiting your liability, marketing your services, and much more.

Construction Surveying is currently scheduled in the following locations:

|                  |          |
|------------------|----------|
| Indianapolis, IN | March 29 |
| St. Louis, MO    | March 30 |

P.O.B. Publishing Company is introducing a special \$125 each registration rate for Construction Surveying. Those interested in attending can contact Jill Zimmer, Special Projects Assistant, at 313/981-4600 or write to P.O.B. at 5820 Lilley Road #5, Canton, MI 48187.

P.O.B. began sponsoring seminars in 1986 to meet the current information needs of surveyors, civil engineers, and related mapping professionals. Today, our seminars are a leading source of continuing education in the industry. We stand behind our satisfaction guarantee policy - if for any reason an attendee is dissatisfied with a seminar or conference we present we will fully refund their registration fee.

## CHAPTER NEWS

### 1994 OFFICERS AND DIRECTORS

#### Central Indiana Chapter ISPLS

|                |               |
|----------------|---------------|
| President      | John Bauer    |
| Vice President | Peter Arnold  |
| Secretary      | Greg Garrison |
| Treasurer      | Bryan Catlin  |
| Director       | Evan Evans    |

#### Hoosier Hills Chapter ISPLS

|                |               |
|----------------|---------------|
| President      | Chuck Coyle   |
| Vice President | Ken Anderson  |
| Treasurer      | Orwic Johnson |
| Secretary      | Perry Cloyd   |
| Director       | Jon Monies    |
| Director       | John Kurtz    |

#### Initial Point Chapter ISPLS

|                     |                 |
|---------------------|-----------------|
| President           | Paul Moffett    |
| Vice President      | Ron Vuckson     |
| Secretary/Treasurer | Frank Ballintyn |

#### Northeast Chapter ISPLS

|                     |              |
|---------------------|--------------|
| President           | Joel Hoehn   |
| Vice President      | Bruce Franke |
| Secretary/Treasurer | Gale Fansler |

#### Northwest Chapter ISPLS

|                     |                |
|---------------------|----------------|
| President           | Ed Hutson      |
| President Elect     | Emil Beeg, Jr. |
| Secretary/Treasurer | Steve Krull    |
| Director            | Jim Gorski     |
| Director            | Don Bengel     |
| Director            | Rich Hudson    |

#### Southwest Chapter ISPLS

|                |              |
|----------------|--------------|
| President      | Alvin Paul   |
| Vice President | Rodney Young |
| Director       | Stuart Hein  |

#### St. Joe Chapter ISPLS

|                     |                                      |
|---------------------|--------------------------------------|
| President           | Not Available At Time Of Publication |
| Vice President      |                                      |
| Secretary/Treasurer |                                      |

## SAFETY ENGINEERING

by Ron Koons, RoSaKo Enterprises, Middletown, Indiana

This month we are going to discuss a topic that has received tremendous attention over the past few years. SAFETY ENGINEERING is a process of developing a work plan or procedure that builds in safety factors. In its basic form, Safety Engineering is quite simple. Let's give a quick example. You need to survey in the vicinity of a major state highway. Your work will require approximately 4 hours of the crew's time. During the morning and afternoon drive times traffic is several thousand cars per hours. From 9 AM to 3 PM the traffic is tremendously reduced. You tell the crew to do their work during the time period of least traffic. You have just practiced a basic form of Safety Engineering.

The key is that you shouldn't stop at scheduling. Make sure all other safety factors have been considered. Is all of the Personal Protective Equipment (PPE) being utilized that the job requires? (Reflective vests, hard hats, etc.) Have warning signs been placed at the appropriate places? (Survey crew placards) Have warning devices been properly placed to protect the employees? (cones, barricades, etc.) If the crew's vehicle is within the highway boundaries or in any other danger zone is it protected? (flashers, beacons, strobes, cones, etc.) In some cases a trained flagperson may even be required to further insure the safety of your crew. Making all of these items a part of your daily work routine is practicing Safety Engineering for the protection of your workers.

**You are attempting to build in safety to all of your work when establishing a Safety Program.**

To stretch the definition a little, we could even consider your Safety Program as a form of Safety Engineering. You are attempting to build in safety to all of your work when establishing a Safety Program. With your continued Safety Meetings you are reaffirming your commitment to your employees performing their work in a safe manner.

Just as when a building may collapse, an employee being injured quite often is a failure in the engineering being properly followed. If all of the proper safety precautions have been engineered into the project and the employees ignore certain aspects, then the potential for an injury becomes greater. Likewise, you must be certain that the engineering was correct.

OSHA is looking into process management for all industries to make sure that Safety Engineering is being considered. From steel foundries & manufacturing plants to construction and meatpacking, the procedures must be of a nature to assure all employees safety and well being.

If you do all of the above, maybe you should add S.E. to the P.E. S. at the end of your name!

## SUSTAINING MEMBERS

THANK YOU FOR YOUR CONTINUED SUPPORT!!

**CMD & ASSOCIATES, INC.**  
655 West Thirteen Mile Rd., Ste 203  
Madison Heights, Michigan 48071  
(313)585-1110

**G. LENGEMANN COMPANY**  
4086 Pendleton Way  
Indianapolis, Indiana 46226  
(317) 542-7673

**HARRISON MARKER AND INSTRUMENT COMPANY**  
P.O. Box 66  
Anoka, Minnesota 55303  
(612) 421-1445

**HAYES INSTRUMENT CO.**  
502 S. Cannon Blvd.  
Shelbyville, Tennessee 37160  
(800) 251-1280

**MARK - IT**  
3162 East 46th Street  
Tucson, Arizona, 85713  
(800) 323-4578

**NIKON INC., INSTRUMENT GROUP**  
1300 Walt Whitman Road  
Melville, New York 11747  
(800) 231-3577

**SEILER INSTRUMENT & MFG. CO.**  
6330 E. 75th Street  
Indianapolis, Indiana 46250  
(317) 849-7090

**SURV-KAP, INC.**  
P.O. Box 27367  
Tucson, Arizona 85726  
(602) 622-6011

# CALENDAR

**March 18, 1994**  
Floodplain Management Workshop, Ramada Inn, Columbus, Indiana, For Registration Information Call Columbus/Bartholomew Planning Department (812) 376-2550

**March 18, 1994**  
Southwest Chapter Meeting, Dinner, 6:00 p.m., Meeting 7:30 p.m., The Log Inn, Warrenton, Indiana

**March 26, 1994**  
ISPLS Board of Directors Meeting, Purdue University

**March 26, 1994**  
Purdue Student Chapter ACSM-ISPLS, 22nd Annual Student Recognition Banquet, University Inn, W. Lafayette, IN, \$18 per person for alumni, faculty, or guest, \$16 per person for students. Mail to: Purdue Student Chapter ACSM-ISPLS, Purdue Univ., 1284 Civil Engineering Building, W. Lafayette, IN. 47907-1284 Reservations no later than March 21. Make checks payable to Purdue Student Chapter ACSM-ISPLS.

**March 29, 1994**  
P.O.B. Seminar - Construction Surveying, Speaker Milton Denny, PLS, Indianapolis, Indiana, Contact: Jill Zimmer 313/981-4600.

**March 31 and April 1, 1994**  
7th Annual Geographic Information Systems Conference, Baltimore Maryland. Contact: John Morgan, III. Phone 410/830-2964.

**April 15, 1994**  
ISPLS Spring Workshop, Topic "Rule 12", Holiday Inn, Plymouth, Indiana

**April 23-28, 1994**  
ACSM/ASPRS Annual Convention. Reno, Nevada. Contact: ACSM, 5410 Grosvenor Lane, Bethesda, MD 20814-2122. Phone 301/493-8245

**May 5-7, 1994**  
1994 NCEES Central Zone Meeting, Embassy Suites Hotel, Indianapolis, IN

**May 21, 1994**  
ISPLS Board of Directors Meeting, Headquarters

**June 10, 1994**  
ISPLS Workshop, Topic "Rule 12", Holiday Inn East, Indianapolis, Indiana

**July 9, 1994**  
ISPLS Board of Directors Meeting, Headquarters

**August 13, 1994**  
ISPLS Board of Directors Meeting, Headquarters

**August 15-19, 1994**  
Triennial U.S. Army Corps of Engineers Surveying & Mapping Conference, Marriott Hotel, New Orleans, Louisiana


**September 30, 1994**  
ISPLS Fall Workshop, Topic: "Rule 12", Brown County State Park, Nashville, Indiana

**October 23-28, 1994**  
GIS/LIS '94 Annual Conference & Exposition & ACSM/ASPRS Fall Convention. Phoenix, Arizona. Contact ACSM. Phone 301/493-0200.

**January 18-20, 1995**  
**ISPLS Conference, Merrillville, Indiana**

**February 27 - March 3, 1995**  
ACSM/ASPRS Annual Convention and Exposition, Charlotte, North Carolina

# FIRM MEMBERS



**DONOVAN ENGINEERING**  
2030 INWOOD DRIVE  
EXECUTIVE PARK  
FORT WAYNE, IN 46815


**JOHN R. DONOVAN P.E. & P.L.S.**

OFFICE 424-7418  
HOME 483-3313

---

**KIRBY BROTHERS SURVEYING CO.**

*Vasco Kirby*




4333 W. 96th Street  
Indianapolis, IN 46258

Phone: 876-8188  
Fax: 876-8189

---

**MSE Surveying**




Surveying  
Engineering  
Digital Mapping  
Landscape Architecture

841 North Meridian Street  
Indianapolis, IN 46204 1061  
317 634-1000  
317 634-3576 FAX

**Jeffrey A. Blayross, L.S.**  
Director, Land Surveying

---




**SCHNEIDER ENGINEERING CORPORATION**  
Civil Engineering - Land Surveying

**JOHN V. SCHNEIDER, P.E.L.S.**  
PRESIDENT

3020 N. Post Road  
P.O. Box 26068  
Indianapolis, Indiana 46226-0068

OFFICE: 317-898-8282

---




**ANDERSON & ASSOCIATES**  
Carl M. Anderson, Founder

Specialists in Land Development

**CARY B. DODGE, R.L.S.** Phone: (317) 482-6141  
(317) 873-2818

---



**WEIHE ENGINEERS INC.**

10505 N. College Indianapolis IN 46280 (317) 846-6611

**ALLAN H. WEIHE, P.E., L.S.**  
PRESIDENT

CIVIL ENGINEERS LAND SURVEYORS LAND PLANNERS

# FIRM MEMBERS

|  |   |   |
|--|---|---|
|  <p>Effective Solutions &gt;&gt;&gt;</p> <p>7140 Waldemar Drive<br/>Indianapolis, Indiana<br/>46268-4192<br/>317.299.7500<br/>Fax: 317.291.5805</p>   |  <p><b>R.M. Stoepelweh, P.E., PLS</b><br/>President</p> <p>(317) 849-5935</p> <p>CONSULTING ENGINEERS-LAND SURVEYORS<br/>1946 Algonquin Dr. P.O. Box 509067 Indianapolis, IN 46250 1-800-728-4917 FAX: (317) 841-5942</p>  | <p>Boundary Surveys Subdivision Design Plot Plans Construction Surveys</p> <p><b>JOHN H. STEPHENS, R.L.S., Inc.</b></p> <p>1345 Wabash St<br/>Wabash, IN 46792</p> <p>Bus 563-4467<br/>Home 563-6080</p>  |
| <p>WILLIAM W. BASSETT, P.E., L.S. PRESIDENT</p> <p><b>WILLIAM W. BASSETT &amp; ASSOC., INC.</b></p> <p>Engineers - Designers - Surveyors</p> <p>212 E. LINCOLN ROAD KOKOMO INDIANA 46902<br/>PHONE &amp; FAX 317 453-9300</p>  | <p><b>VESTER &amp; ASSOCIATES, INC.</b><br/>SURVEYING &amp; SUBDIVISION DESIGN</p> <p><b>PATRICK N. CUNNINGHAM, R.L.S.</b><br/>PRESIDENT</p> <p>308 COLUMBIA ST.<br/>SUITE 101<br/>LAFAYETTE INDIANA 47901</p> <p>TELEPHONE (317) 742-8479</p>  | <p><b>McM</b></p> <p><b>McMAHON ASSOCIATES, INC.</b><br/>ENGINEERS • ARCHITECTS<br/>PLANNERS • SURVEYORS</p> <p>952 STATE ROAD 2<br/>VALPARAISO, IN 46382<br/>PH (219) 462-7743<br/>FAX (219) 464-8248</p>  |
|  <p><b>Hershel W. Manhart, L.S.</b><br/>Vice President, Land Surveying</p> <p>2801 S. Pennsylvania St.<br/>Indianapolis, IN 46225-2322<br/>317 786 0461<br/>800 321 6959<br/>FAX 317 788 0957</p> <p>PROFESSIONAL ENGINEERS ARCHITECTURE ENVIRONMENTAL TRANSPORTATION</p> | <p>Telephone 882-9301</p> <p><b>SITE LINE, INC.</b><br/>Land Surveying and Civil Engineering</p> <p>John H. Silnes L.S.</p> <p>461 West Main, P.O. Box 802<br/>Greenwood, IN 46142</p>  |  <p><b>United Surveying, Inc.</b><br/>LAND SURVEYORS AND ENGINEERS</p> <p>Daniel R. Woo, L.S.<br/>President<br/>Res (317) 894-8172<br/><b>United Surveying, Inc.</b><br/>5332 N. Temple Avenue<br/>Indianapolis, Indiana 46220<br/>Phone: (317) 253-4996<br/>FAX: (317) 253-5385</p>                       |
|  <p><b>CHET SKWARCAN</b><br/>Professional Engineer<br/>Land Surveyor</p> <p><b>JOHN W. WEAVER &amp; ASSOC., INC.</b><br/>CONSULTING ENGINEERS<br/>LAND SURVEYORS</p> <p>801 W. Boardwalk Ave., (E. 8th St.) IN 46214<br/>(317) 294-1830 Fax (317) 290-8386</p>          | <p><b>ASA</b><br/>Alan Stanley &amp; Associates, Inc.<br/>LAND SURVEYING</p> <p>DAVID HELTON, L.S.<br/>JOHN PHILLIPS, L.S.<br/>PH 317-663-2714<br/>FAX 317-663-1227</p> <p>122 E. WALNUT ST.<br/>GREENCASTLE, IND 46135</p>   |  <p>LAND AND PROJECT SURVEYORS</p> <p><b>ARTHUR F. HAUFLE, INC.</b><br/>(FOUNDED 1895)</p> <p>THE MAJESTIC BUILDING<br/>SUITE 302<br/>47 S. PENNSYLVANIA ST<br/>INDIANAPOLIS IN 46204<br/>TELE (317) 632-5003</p>  |
|  <p><b>ROSS O. HOLLOWAY</b><br/>PROFESSIONAL<br/>LAND SURVEYOR</p> <p><b>HOLLOWAY AND ASSOCIATES, P.C.</b></p> <p>P.O. Box 234<br/>Mooreville, IN 46158</p> <p>Telephone 317-831-7918</p>   |  <p><b>James E. Dankert, P.E., L.S.</b></p> <p><b>PAUL L. CRIFE, INC.</b></p> <p>7172 Graham Road • Indianapolis, Indiana 46250<br/>(317) 842-8777 • Fax: (317) 841-4788<br/>Land Development Engineers • Land Surveyors • Architects • Land Planners</p>                      |  <p><b>FINK ROBERTS &amp; PETRIE, INC.</b></p> <p><b>Jerry L. Carter, L.S.</b><br/>Survey Department Manager</p> <p>3307 West 96th Street<br/>Indianapolis, Indiana 46268<br/>317-872-8400 Tele 317-876-2408 Fax<br/>Structural Engineering • Civil Engineering<br/>Industrial Buildings • Surveying</p> |
|  <p><b>AMERICAN CONSULTING ENGINEERS, INC.</b></p> <p>• CIVIL • ENVIRONMENTAL • SURVEYING<br/>• STRUCTURAL • ARCHITECTURAL • PLANNING</p> <p>4165 MILLERSVILLE ROAD INDIANAPOLIS INDIANA 46225<br/>DT. (317) 547-5580 FAX (317) 543-0270</p>                            |  <p><b>RQAW</b><br/>CONSULTING ENGINEERS<br/>ARCHITECTS<br/>INDIANAPOLIS • SOUTH BEND</p> <p><b>J. EDWARD DOYLE, P.E.</b><br/>PRESIDENT</p> <p>REID OUEBE ALLISON WILCOX &amp; ASSOCIATES INC<br/>1755 KINGSWAY DRIVE • SUITE 400 • INDIANAPOLIS IN 46205<br/>317 255 6060</p> |  <p><b>MARBACH &amp; BRADY</b><br/>LAND SURVEYING, INC.</p> <p>85306 Jay Dec Surri • Elkhart, Indiana 46514</p> <p><b>Christian F. Marbach, R.L.S.</b> (319) 893-8611<br/>President FAX (219) 854-7464</p>   |

## THE HOOSIER SURVEYOR

Indiana Society of Professional Land Surveyors, Inc.  
55 Monument Circle, Suite 1222  
Indianapolis, Indiana 46204

Bulk Rate  
U. S. Postage  
PAID  
Indianapolis, Ind.  
Permit No. 4056



WHAT MARKER MEETS  
ALL OF MY NEEDS?

Harrison has developed a variety of markers to satisfy the many demands made upon surveyors. Each member of the Harrison family of markers—the STANDARD, the EXTENDIBLE, the SLIMLINE, and even the DRIVABLE—has the important permanence features that have made Harrison markers number one in America. Check out the Harrisons that are available to meet *your* needs and fit *your* budget.

# THE ANSWER IS Harrison!

For information WRITE  
or PHONE

**HARRISON**  
**marker CO.**

Box 66, Anoka, MN 55303  
(612) 421-1445