

SURVEYOR

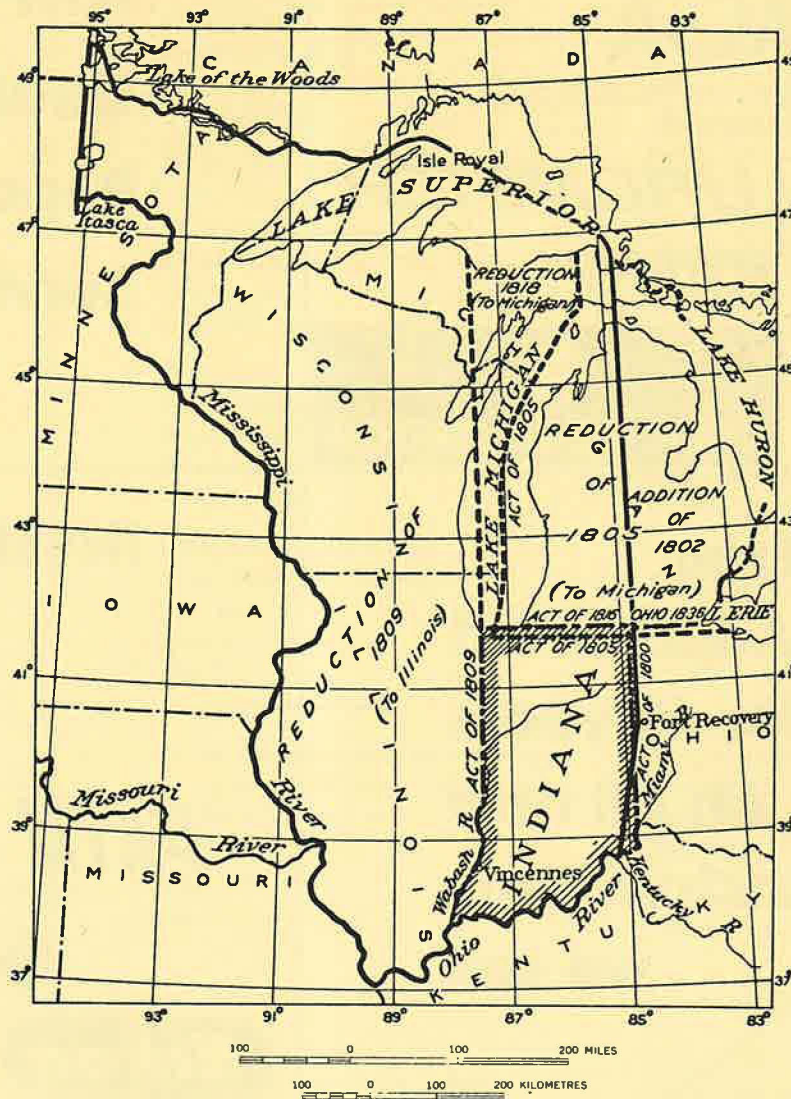
HOODS



VOLUME 4
NUMBER 1
WINTER 1977



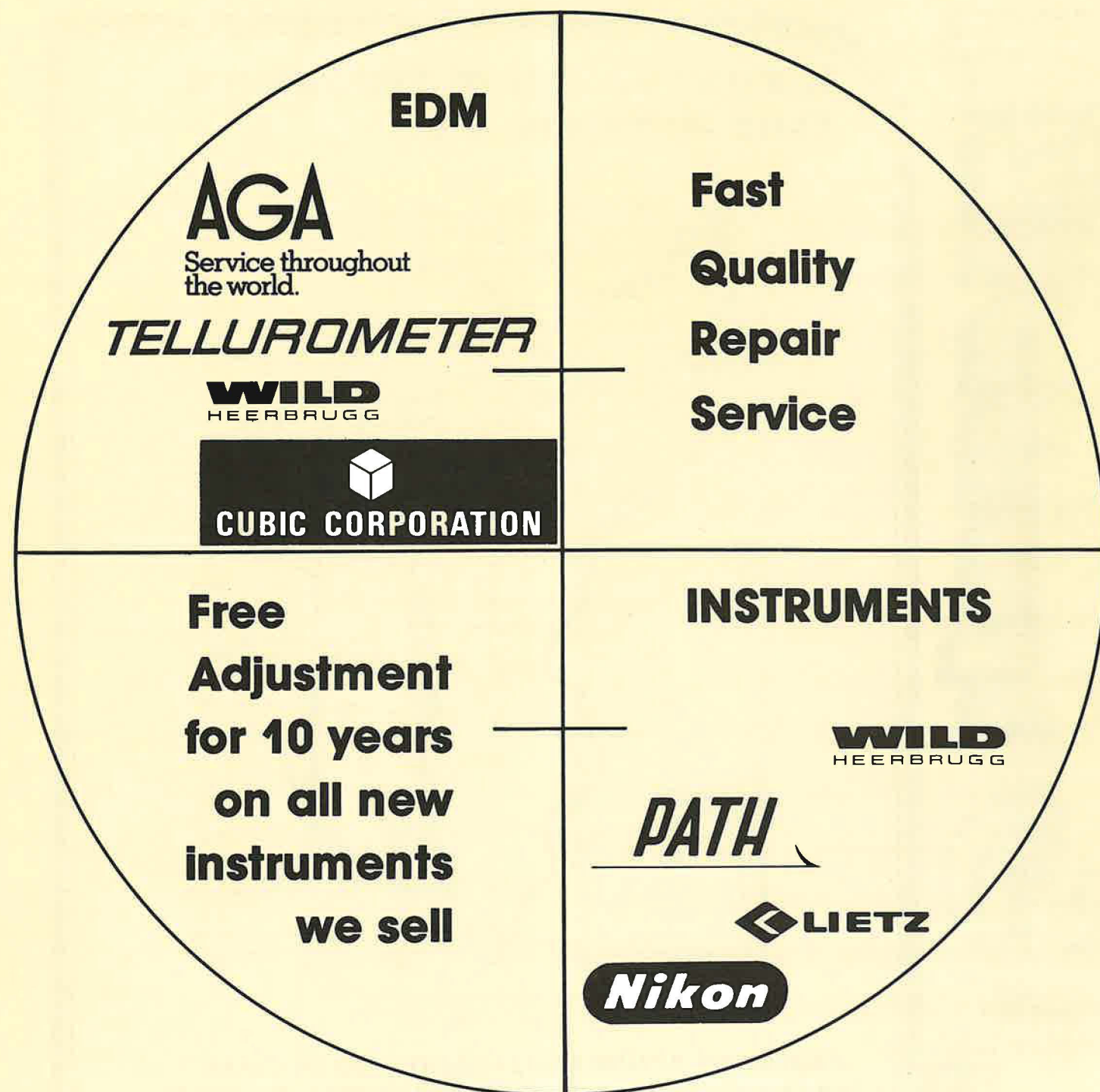
Indiana Society of Professional Land Surveyors, Inc.



• INDIANA'S BOUNDARIES • SURVEYING IN CLARK'S
GRANT • LAND PARCEL IDENTIFICATION • TRI-STATE
CONVENTION COMPACT • 1977 CONVENTION HIGHLIGHTS
• 1976 BOARD RESUME • 1977 BUDGET • 1977 OFFICERS,
DIRECTORS, COMMITTEES • PURDUE CHAPTER DINNER

HICKERSON INSTRUMENT CO., INC.

SURVEYING INSTRUMENTS - SALES AND SERVICE



6009-11 E. 34TH STREET, INDIANAPOLIS, IND. 46226, PHONE (317) 547-7667

INSTRUMENTS • DRAFTING ROOM FURNITURE • BLUE LINE MACHINES & PAPER •
E.D.M. EQUIPMENT • OFFICE FURNITURE • FIELD SUPPLIES

HOOSIER SURVEYOR

VOLUME 4, NO. 1, WINTER 1977

Committee Assignments (1977)

Annual Program

Roger Woodfill (Chairman)
Orwic Johnson
Emil Beeg
John McEntyre (Special Advisor)

Budget & Finance

David Wolf (Chairman)
Orwic Johnson

Scholarship

John Fisher (Chairman)
Charles Budnick
Lloyd Kemmer
Phil Burress
Brad DeReamer

Workshops

Charles Budnick (Chairman)
Roger Woodfill
Charles Campbell
Al McConahay

Ethic & Business Practices

Brian Dickerson (Chairman)
Bill Tanke
John McEntyre
Wes Day
Gene Darnell

ISPLS - County Surveyors Association

Joint Coordinating Committee
Bill Tanke (Chairman)
Wes Day
John McNamara
Zohrab Tazian

Legislative

Luther R. Condre (Chairman)
Nelson Prall
Wes Day
Orwic Johnson
David South
John V. Schneider

Membership

Don Gwinnup (Chairman)
Jim Morley
Brad DeReamer
John V. Schneider

Newsletter Advertising

Emil Beeg (Chairman)

Perpetuation Program

John McNamara (Chairman)
Byron Brady
Julio LaFrossia
William Land

Publications

Ken Curtis (Chairman)
Rex Bowman
John McEntyre
Warren Marks

Registration & Recertification

Richard Beck (Chairman)
Gary Kent
Lee Bender
Greg Asher

Registration Board Liaison

John V. Schneider (Chairman)

COVER: The cover picture is a figure from the Geological Survey Professional Paper 909 entitled Boundaries of the United States and The Several States by Franklin K. VanZandt, which diagrams the historical boundaries of Indiana. The portion covering Indiana is reproduced in this issue.

EDITOR'S NOTE:

Deadlines for copy for various planned issues of the HOOSIER SURVEYOR are as follows:

Winter issue - January 31
Spring issue - April 30
Summer issue - July 31
Fall issue - October 31

The HOOSIER SURVEYOR is reproduced by the Printing Department of Marbaugh Engineering Supply Co., Inc., Indianapolis, Indiana.

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.

Editorial/Advertising offices: 1224 North Capitol Ave., Indianapolis, IN 46202 (Telephone: 317-634-6206). Advertising rates, closing dates, circulation data on request. Contributed articles, photographs subject to space limitations.

Kenneth S. Curtis
Editor

OFFICERS AND DIRECTORS FOR THE YEAR 1977

President

John V. Schneider
65 Bay Shore Court
Carmel, Indiana 46032

President-Elect

Roger Woodfill
R. R. 1, Box 20, Pribble Rd.
Lawrenceburg, Ind. 47025

Vice-President

Orwic Johnson
P. O. Box 1171
Columbus, Ind. 47201

Secretary-Treasurer

David K. Wolf
R. R. 1, Box 45
Garrett, Indiana 46738

State Office ISPLS

1224 North Capitol Ave.
Indianapolis, Ind. 46202
Phone: 317/634-6206
Secretary: Peggy Archer

Directors

Byron M. Brady
1607 E. Lake Dr., West
Elkhart, Ind. 46514

Charles A. Budnick
2512 Cicero Road
Noblesville, Indiana 46060

Kenneth S. Curtis
2204 Happy Hollow Road
West Lafayette, Ind. 47906

Brad R. DeReamer
601 Chestnut Lane
Greenfield, Ind. 46140

Brian M. Dickerson
2505 Cambridge Road
Lafayette, Indiana 47905

Donald Gwinnup
925 Forest Drive
Anderson, Indiana 46011

James Morley
6608 Kembell Drive
Evansville, Indiana 47710

THE PRESIDENT'S PAGE

PRESIDENTS COMMENTS

By John Schneider

"People, it has been said, can be placed in three classes: The few who make things happen, the many who watch things happen, and the overwhelming majority who have no idea what has happened". As far as our profession and society are concerned, far too many of us fall into the latter classes. Not because we don't have the capabilities, not because we don't care, but primarily because it is just easier to stand back and watch.

The past leadership of our society has guided us admirably. We have, in recent years, weathered numerous storms and have survived stronger then ever. ISPLS is ripe for major advancements, particularly the elevation of our profession to its appropriate place on the professional scale. To accomplish this, we must first build our society to a respectable membership level, publicly promote our society and profession, and develop and support advantageous legislation.

Individually, we are all in a position to assist, and I beg you to come forward. Someone may have an idea on legislation, another may have a legislative contact, another may know the Governor and realize that, damn it, it's time ISPLS had a voice in the Registration Board appointments. Another may desire to address a professional or civic group on the land surveying profession (incidentally, ISPLS is purchasing and will have available to its members very shortly, an excellent film for this purpose), and yet another may only know of and contact a potential member. Individually our efforts may not seem like much, but collectively, we can make great strides.



1977 ISPLS officers are, left to right, Orwic Johnson, vice-president; Roger Woodfill, president-elect; John Schneider, president; and David Wolf, secretary-treas.



John Schneider
President



1977 ISPLS board of directors, front row, left to right, Orwic Johnson, Charles Budnick, Byron Brady, David Wolf; second row, John Schneider, Brad DeReamer, Brian Dickerson, Ken Curtis, and Roger Woodfill. Absent was Jame Morley and Don Gwinnup.

TRI-STATE LAND SURVEYORS' CONVENTION FOR FEBRUARY 1978 INDIANA — OHIO — KENTUCKY

Letter of Intent
(February 3, 1977)

- WHEREAS Professional Land Surveyors in the Commonwealth of Kentucky, the State of Ohio, and the State of Indiana share mutual interests, problems and goals; and
- WHEREAS Professional Land Surveyors of all three states are organized into similiar, ACSM recognized, professional societies; and
- WHEREAS each of these societies traditionally hold an annual convention of their general membership in the winter months; and
- WHEREAS it would benefit members of all three organizations to convene in joint session to learn from each other; and
- WHEREAS a tristate meeting would attract prominent speakers and commercial exhibitors, and create favorable public relations

BE IT RESOLVED:

That the three independent state professional land surveyor societies join together to hold a convention on February 16, 17, 18, 1978.

That said convention will be held in the greater Cincinnati area. (actually at the Drawbridge Motor Inn, Ft. Mitchell, Kentucky, at I-75 @ Buttermilk Plaza near Cincinnati airport.)

We, the undersigned, hereby indicate that the membership of our individual societies intend to participate in aforesaid tri-state conference, and that we will notify the other signed by March 15th. 1977 should the societies we represent elect not to support the above proposed conference.

John L. McMichaels, President
Kentucky Section — American Congress on Surveying and Mapping

Gilbert H. Smith 1978 Conference Chairman
Professional Land Surveyors of Ohio

Roger Woodfill, President-Elect
Indiana Society of Professional Land Surveyors, Inc.

SURVEYING AND MAPPING AWARD RECEIVED BY KENNETH S. CURTIS

Philadelphia, Pa., Sept. 29 -- Kenneth S. Curtis of West Lafayette, Ind. today received the Surveying and Mapping Award from the American Society of Civil Engineers. The award was made at the Annual Convention here.

The Surveying and Mapping Award is given to a member of the Society who has made a definite contribution to the advancement of surveying and mapping, either in teaching, writing, research, planning, design, construction, or management.

Mr. Curtis is professor of surveying and mapping in the school of civil engineering at Purdue University, where he was awarded a Bachelor's and Master's degrees. In addition to having taught 30 years at Purdue, he has had several full-time work experiences with private photogrammetric concerns and government mapping agencies, including the RCA Missile Test project and U. S. Coast and Geodetic Survey.

With ASCE, he has served in the Surveying and Mapping Division as newsletter editor, journal editor, and five years as secretary of the Executive Committee. His main concerns have been in education and technical literature information retrieval.

The ACSM Council of Sections and Affiliates met for two afternoon sessions, February 28 and March 1, and—for a couple of reasons—it was an unusually nostalgic series of meetings. First, Walt Robillard was stepping down as chairman of the Land Surveys Division of ACSM, and he delivered a poignant farewell address to the assembled delegates. He senses a rekindling of interest at a state society level in the future of land surveying, and he feels that only through a unified effort can the land surveyors deal with the problems that will be facing them as professional practitioners. Without interest and activity at a state level, the national society would be powerless.

Attendance was up slightly, with 46 of the 73 eligible Sections and Affiliate Societies being represented by delegates. Thirty Sections and affiliates had submitted their required (?) written reports, and Indiana is still hanging in there with an unbroken record. Several interesting items were abstracted from these reports:

1. Twenty-five of the reporting 30 societies conduct fairly regular continuing education seminars, but only 3 provide any sort of full-time undergraduate student scholarship;
2. Only two societies reported dues increases;
3. Plat Acts and Right-of-Entry bills lead the list of popular legislative proposals (sound familiar?);
4. Many states are concerned about Land Surveyor registration and Registration Board activity, particularly in the area of "sunset" legislation;
5. Two state societies are considering switching to paid professional management, and number of them are using I. C. Systems, Inc., for past-due collections, with favorable results.

Credentials checks were more stringent at this meeting. Only official delegates previously designated in writing, or alternates bearing written authorization, were recognized as voting

COSA delegates. All others were considered visitors and were allowed to speak, but not vote. This is to be the style for future meetings, also.

The major item of business at this meeting was the discussion and favorable recommendation of a revised set of By-Laws for the Land Surveys Division, which were then adopted by the LSD Board and the ACSM Board. These revisions will affect ISPLS in two ways:

1. COSA will now relate directly to the LSD Board, rather than simply having committee status, which was the old relationship;
2. LSD Board members will now be elected on a regional basis. Indiana is part of a 5-state area—Michigan, Wisconsin, Illinois, Indiana, and Ohio—which will elect one director each year to the LSD Board. Detailed nomination and election procedures will be outlined in official mailings later this year.

These revisions, however, will only affect our relationship with the Land Surveys Division. All of the responsibilities of an affiliate society to ACSM remain as they have been. (Incidentally, these by-law revisions were prepared and shepherded through approval by Don Schultz, an ISPLS member from Cincinnati. He did an outstanding job, and he deserves your thanks and congratulations when you see him next.)

New LSD officers were installed by incoming ACSM President Ellsworth Stanley: Ed Brownell - Chairman; Walt Robillard - Immediate Past Chairman; John McEntyre (WHO?) - First Vice-Chairman; LaMonte Urban - Second Vice-Chairman; Lew Boyd - Secretary-Treasurer; Don Schultz, Bob Carpenter, and Paul Lapham - Directors.

Back in the opening paragraph, I noted that this was a nostalgic meeting for a couple of reasons, and then mentioned only one. The other reason is that this was my last meeting—and this is my last report—as a COSA Delegate for ISPLS. The next stop for Lois and me is Texas (if we ever sell our house), which will unblock the delegate's position for someone else. It has been a tremendously worthwhile experience, and I know I have gained much more than I've given. Thanks, y'all.

If I'd had **HARRISON's** 200 years ago, my corners would still be marked!

George Washington, along with the other surveyors of his day, scrounged around and used whatever was available to mark corners—a rock, a glass bottle, a wooden post, a cannon ball.

The profession has changed radically over the last 200 years. Today's surveyors use Harrison markers. They are made of cast iron—the metal proven to last for centuries. They are in a patented design to withstand side thrusts and to crack off when accidentally struck. (The base continues to maintain its position.)



Nobody these days has to use unproven material or unstable shapes.

So, take a tip from the nation's #1 surveyor and your corners will be marked for many centennials to come.

With Harrisons you won't have to become President to make your mark!

HARRISON marker and instrument CO.

Box 588, Anoka, MN 55303, or call
Dave Johnson at (612) 421-1445.

SUSTAINING MEMBERS

The following are sustaining members of the Indiana Society of Professional Land Surveyors. The Society appreciates their continued participation and encourages your support of these firms.

AIR MAPS, INC.
336 Jay Dee St.
Elkhart, IN 46514

CHICAGO AERIAL
2140 S. Wolf Road
DesPlaines, IL 60018

DICKERSON AERIAL SURVEYS
729 S. Fourth Street
Lafayette, IN 47905

**HARRISON MARKER &
INSTRUMENT CO.**
P. O. Box 588
Anoka, Minnesota 55303

HICKERSON INSTRUMENT CO., INC.
6009-11 E. 34th St.
Indianapolis, IN 46226

G. LENGEMANN CO.
2314 N. Fifth St.
Niles, Michigan 49120

**NATIONAL SURVEYING
INSTRUMENTS, INC.**
4050 W. Parker Ave.
Chicago, IL 60639

**PIONEER NATIONAL TITLE
INSURANCE CO.**
155 E. Market St.
Indianapolis, IN 46204

SCHONSTEDT INSTRUMENT CO.
1775 Wiehle Ave.
Reston, VA 22090

HIGHLIGHTS OF 1976 BOARD OF DIRECTORS MEETINGS

The 1976 Board of Directors took office full of hope and enthusiasm for the coming year. The Society had been under professional management for over a year. It appeared that membership was increasing and while the budget was still a problem, when the dues were paid and new members added, all should be well.

The first Board meeting was held Feb. 20, 1976, with Brian Dickerson, President. A summary of the 1976 Annual Meeting was given showing convention costs of \$5,992.91 and income of \$9,196.00. There had been 171 men and 40 wives registered. Committee appointments were made. It was suggested by Tom McComb that one board member serve on each committee, but not as chairman, to keep things rolling. Other routine business was conducted.

The Board met again on March 25, 1976. It was announced that Wes Day's court case was ended and the Attorney General would not appeal it. In order to improve our financial position, a Firm Membership was suggested. A discussion on the ISBH acceptance of plans certified by an L.S. was held. The report on this appeared in the Fall Newsletter.

The Board was presented with a letter from McComb and Associates announcing their intent to terminate the management contract.

At the April 29, 1976 Board Meeting, plans for the Firm Membership progressed. The future management of ISPLS was discussed. John Schneider had been in touch with Herbert Zinsmeister, President of ISPE and there was a good chance of obtaining a working relationship between the two Societies.

The Board met May 20, 1976 and formally terminated the McComb contract and signed an interim contract with ISPE to take over the routine duties of the Society. No executive directorship was included in this agreement and the Board Officers would be more deeply involved in management. The Society would maintain its identity with separate phone, etc. Of grave concern to the Board, were the 146 unpaid members and all efforts were made to contact them. Also the Firm Membership program was started.

There being a majority of the Board Members present at the June 5 Workshop, a special meeting was called to discuss the transition from McComb to ISPE. John Schneider performed an outstanding job in handling the logistics of the move. It was also discussed at this meeting that New 1975 members had not received any mailing because their names had not been added to the mailing list. Brian sent a letter of apology to these people.

Routine business was conducted at the July 17, 1976 Board Meeting. A report was given by the Annual Convention Committee and all was under control.

A meeting was held October 23, 1976 to finalize the plans for the Convention. It was decided at this meeting that July 1 would be the cut off date for payment of dues, at which time, members would be dropped.

The Board met on January 26, 1977 with concern over what the unusually severe weather would do to Convention attendance. Luther Condre reported on the two bills that the Society has before the Legislators and urged the Society to support them. The Board approved the purchase of 30 conference chairs, desk, shelving, etc. for use at the office. A 3 year contract with ISPE was discussed.

And so, 1976 ended with the Society functioning well under new management, all bills paid, and some active steps taken to improve membership, strengthen the Society and improve Land Surveying in Indiana, through Legislation.

Submitted by Orwic A. Johnson, Sec., Treas. 1976

The following is a list of ISPLS member firms:

Anderson & Associates, Engineering
222 East Main Street
P. O. Box 585
Lebanon, IN 46052

B & K Engineering, Inc.
P. O. Box 546
Kendallville, IN 46755

H. R. Blankenknecht & Son
P. O. Box 157
Jeffersonville, IN 47130

Edwin O. Boyd
602 Main Street
Petersburg, IN 47567

Brady Land Surveying, Inc.
55308 Jay Dee Street
Elkhart, IN 46514

Columbus Surveying & Engr. Co.
P. O. Box 1171
Columbus, IN 47201

Paul I. Cripe, Inc.
150 East Market Street
Indianapolis, IN 46204

Richard E. Davidson
125½ West Main Street
Portland, IN 47371

Dickerson Aerial Surveys
729 S. Fourth St.
Lafayette, IN 47905

District 9 Land Survey Co.
202 West High Street
Lawrenceburg, IN 47025

John R. Donovan
2030 Inwood Drive
Fort Wayne, IN 46805

John E. Fisher
1526 Main Street
Lafayette, IN 47905

Indiana Surveying Co., Inc.
25 West Main Street
Greenfield, IN 46140

Mid-States Engr. Co., Inc.
107 North Pennsylvania Street
Indianapolis, IN 46204

O'Brien Engineering
448 Meadow Lane
Madison, IN 47250

Plumb, Tuckett & Hubbard
6481 Taft Street
Gary, IN 46410

Reid, Quebe, Allison, Wilcox & Assoc.
Inc.
3901 Industrial Boulevard
Indianapolis, IN 46254

Schneider Engineering Corp.
3675 N. Post Road
Indianapolis, IN 46226

Sieco, Inc.
309 Washington Street
Columbus, IN 47201

Alan Stanley & Associates
15½ S. Indiana Street
Greencastle, IN 46135

William S. Tanke
R. R. 4, Tower Road
Valparaiso, IN 46383

Weihe Engineers, Inc.
10505 N. College Avenue
Indianapolis, IN 46280

INDIANA SOCIETY OF PROFESSIONAL LAND SURVEYORS
PROPOSED 1977 BUDGET

INCOME		PROPOSED 1977
I-10	Regular Members	\$10,600.00
I-11	Associate Members	600.00
I-12	Junior Members	1,000.00
I-13	Student Members	100.00
I-20	Hoosier Surveyor	1,000.00
I-30	Annual Conference	8,500.00
I-31	Manuals	500.00
I-32	Workshops	4,000.00
I-33	Firm Memberships	3,000.00
I-34	Sustaining Members	700.00
I-40	Interest	25.00
TOTAL INCOME		\$30,025.00
EXPENSES		
P-30	Payroll Expenses	\$ XX
P-40	Accounting Service	250.00
		\$ 250.00
S-10	Rent	\$ 1,200.00
S-20	Telephone	1,000.00
S-30	Office Supplies	700.00
S-31	Management Fee "McComb"	X
S-32	McComb Expenses	X
S-33	Office Expense "ISPE"	3,600.00
S-40	Postage	1,000.00
S-41	Rowland Printing	X
S-50	Secretarial (Part time)	500.00
S-60	Sales Tax	70.00
		\$ 8,070.00
G-10	Hoosier Surveyor	\$ 4,000.00
G-30	President's Contingency	150.00
G-50	ACSM Delegate	1,000.00
G-60	COSA Delegate & Conf.	200.00
G-70	Travel, PR, Legislative	2,000.00
G-90	Insurance	300.00
G-91	Employee Insurance	-0-
G-110	Annual Conference	6,500.00
G-111	Summer Workshops	3,000.00
G-112	Manuals	1,000.00
		\$18,150.00
C-60	Awards	100.00
C-80	Committee Expenses	300.00
C-81	Membership Development	1,000.00
C-82	Scholarship Fund	510.00
C-83	Safety Deposit Box	10.00
C-84	Newsletter Editor	500.00
C-85	Accumulative Fund "A"	100.00
MS-10	Misc. State Expense	1,035.00
		\$ 3,555.00
TOTAL EXPENSES		\$30,025.00

INDIANA FACTS & FIGURES

The 1976-77 edition of the Indiana Industrial Directory, published by the Indiana State Chamber of Commerce, contains many interesting and informative facts and figures about our state. Here is a sampling:

Indiana is 38th in physical size, 12th in population, 9th in industrial production, and 8th in agricultural production. Its 5.3 million people produce \$3 billion worth of farm marketings, and \$30 billion worth of manufactured goods a year. Indiana is the 8th largest exporting state in the nation.

Indiana ranked 11th in the number of patents granted during 1975. Thousands of new discoveries and technique innovations have occurred in Indiana in modern times, including: stainless steel, aluminum castings, purification and mass production of insulin and penicillin salts, the all-transistor automobile radio, heavy duty automatic truck transmissions, and measles vaccine.

Indiana provides about two-thirds of all building limestone quarried in the U. S.

Indiana ranks first in the production of mobile homes and recreational vehicles, caskets and other morticians goods, wood office furniture, storage batteries, fractional horsepower motors, pistons and piston rings, magnetic wire and phonograph records.

Indiana ranks second in the production of raw steel, truck trailers and chassis, margarine, steel bars, fabricated metal for bridges, basic gelatin, electric coils and transformers.

Indiana ranks third in the production of prefabricated wood buildings, industrial capacitors, motor vehicle parts and accessories, and parts for internal combustion engines.

DATES TO REMEMBER

June 6-14, 1977 XV Congress of the International Federation of Surveyors (F.I.G.) in Stockholm, Sweden.

June 20-24, 1977 Ninth National Surveying Teachers' Conference at University of New Brunswick, Fredericton, New Brunswick, Canada. Practitioners are also invited.


October 18-21, 1977 Fall Convention of American Congress on Surveying and Mapping, Little Rock, Arkansas.

February 16-18, 1978 Tri-State Land Surveyors' Convention Indiana, Ohio, and Kentucky, at Drawbridge Motor Inn, Ft. Mitchell, Kentucky, on I-75 near Cincinnati airport.

NEWNOTES

John F. McLaughlin, head of the School of Civil Engineering, Purdue University, will become Assistant Dean of Engineering at Purdue University on July 1, 1977. He will be responsible for alumni relations as well as handling various programs within the Schools of Engineering. He has headed the School of Civil Engineering since 1968. A 1950 graduate of Syracuse University, he received his graduate degrees from Purdue University. His area of technical interest include concrete and concrete aggregates. He is Vice President of the American Concrete Institute. A committee has been appointed to select a new head for the School of Civil Engineering. We all wish John success in his new assignment. He will be remembered by Indiana land surveyors for his continued support for the inauguration and successful offering of the new four-year professional land surveying program at Purdue.

AIR MAPS, INC.



DO YOU HAVE A ROUTE STUDY, DRAINAGE PROBLEM, SUBDIVISION DESIGN, VOLUME COMPUTATION OR TAX ASSESSMENT JOB COMING UP?

A practical and rewarding alliance could develop;

The diversified topographic and photographic capabilities of Air Maps, Inc., and your needs.

55316 JAY DEE ST. ELKHART, INDIANA 46514 219-293-5242 OR 293-6423

INDIANA'S BOUNDARIES

Editor's note: The following article on Indiana's boundaries is taken from an excellent 191 page Geological Survey Professional Paper 909 entitled Boundaries of the United States and the Several States by Franklin K. VanZandt. It was published in 1976 (\$5.20) and supercedes several earlier editions from 1885 to 1966. Figure 26-Historial diagram of Indiana appears on the cover.

INDIANA

By the act approved May 7, 1800, to take effect on and after July 4 of that year, the "Territory northwest of the River Ohio" was divided into two parts, the eastern part to retain the old name, the western part to become the Territory of Indiana. (See fig. 26.) The description of the boundary line between these two Territories is given in the act (2 Stat. L. 58) as follows:

That from and after the fourth day of July next, all that part of the territory of the United States northwest of the Ohio River, which lies to the westward of a line beginning at the Ohio, opposite to the mouth of Kentucky river, and running thence to Fort Recovery, and thence north until it shall intersect the territorial line between the United States and Canada, shall, for the purpose of temporary government, constitute a separate Territory, and be called Indiana Territory.

* * * * *

That whenever that part of the territory of the United States which lies to the eastward of a line beginning at the mouth of the Great Miami river, and running thence due north to the territorial line between the United States and Canada, shall be erected into an independent state, and admitted into the Union on an equal footing with the original states, thenceforth said line shall become and remain permanently the boundary line between such State and the Indiana Territory, anything in this act contained to the contrary notwithstanding.

The line from the Ohio River running northeastward to Fort Recovery was the boundary of an Indian cession established by the "Greenville treaty" of 1795 (Royce, 1899, p. 654).

In the Ohio enabling act (of 1802) provision was made for the addition to Indiana Territory of a triangular strip of land between Ohio and that Territory and of that part of the Territory northwest of the River Ohio north of the limits of the new State (Ohio) and east of Indiana (2 Stat. L. 174), as follows:

All that part of the territory of the United States northwest of the river Ohio heretofore included in the eastern division of said territory, and not included within the boundary herein prescribed for the said state, is hereby attached to and made a part of the Indiana territory.

The admission of Ohio as a State removed from Indiana Territory a narrow strip about 1¼ miles wide north of Fort Recovery. (See fig. 26.)

One June 30, 1805 (2 Stat. L. 309), by an act approved January 11, 1805, the northeastern part of Indiana Territory was cut off and organized as Michigan Territory. For the divisional line between the two Territories, see Michigan, page 127.

On March 1, 1809, by an act approved February 3, 1809, Indiana Territory was again divided, and the western part was organized as Illinois Territory (2 Stat. L. 514). For a description of the line separating these two Territories, see Illinois, page 116.

On December 11, 1816, Indiana was admitted as a State with the limits as given in the following extract from the enabling act (3 Stat. L. 289), approved April 19, 1816, which have not since been changed:

the said State shall consist of all the territory included within the following boundaries, to wit: Bounded on the east, by the meridian line which forms the western boundary of the State of Ohio; on the South, by the river Ohio, from the mouth of the Great Miami River, to the mouth of the River Wabash; on the west by a line drawn along the middle of the Wabash, from its mouth to a point where a due north line drawn from the town of Vincennes, would last touch the north-western shore of the said river; and from thence by a due north line, until the same shall intersect an east and west line drawn through a point ten miles north of the southern extreme of Lake Michigan; on the north by the said east and west line until the same shall intersect the first-mentioned meridian line which forms the western boundary of the state of Ohio.

A provision in this act required that the boundaries as therein described be ratified by a constitutional convention to be called; otherwise they would be fixed as described in article 5 of the ordinance of 1787. By ratifying them, June 29, 1816; Indiana missed an opportunity for including in its limits a considerably larger territory than it now has. There was a similar proviso in the enabling act of 1818 for Illinois.

The north boundary of Indiana is parallel to and 10 miles north of the line which runs due east from the southern extremity of Lake Michigan (3 Stat. L. 289). A survey of this line was made in 1827 in accordance with the congressional act of March 2 of that year.³³ The original plat of the survey was filed in the surveyor general's office in Chillicothe, Ohio, and a copy in the General Land Office in Washington. The approximate latitude as determined in 1827 is 41° 47' 43" N., but measurements by the Geological Survey near the east end (Marshall, 1916, p. 305) give the latitude as 41° 45' 33" N. The mark nearest Lake Michigan is in lat 41° 45' 36.07" N., long 86° 46' 03.36" W. (1927 N.A.D.). Parts of this line were retraced in 1828, 1834, 1839, and 1842 by the General Land Office.

For a description of the east boundary, see Ohio, page 114. For a description of the west boundary, see Illinois page 116.

The south boundary is the low-water line on the north side of the Ohio River. This interpretation was given by the Supreme Court (18 U.S. 374) to the phrase "northwest of the river Ohio" in the cession to the United States by Virginia of its territory on the northerly side of the river. This was reaffirmed in an opinion in Indiana v. Kentucky, (136 U.S. 479) in 1890. The low-water line of 1792 was fixed as the true boundary, this being the date of Kentucky's admission to the Union.

In 1942 and 1943, the two States passed acts with identical descriptions of surveys of the 1942 low-water line. Congress approved these acts on June 29, 1943 (57 Stat. 248).

A report from the Indiana State Highway Commission in 1969 gives the results of an exhaustive study of the location of the low-water line in 1792. Old surveys, records, and maps were consulted, and the report concludes that the boundary as of that date could be recovered.

³³4 Stat. L. 237. For map and description, see U.S. Cong, (1828).

MICHIGAN (127)

Michigan was organized as a Territory June 30, 1805, from the northeastern part of Indiana Territory. (See fig. 31.) The following clause from the act dividing Indiana Territory defines its limits (2 Stat. L. 309):

* * * from and after the thirtieth day of June next, all that part of the Indiana territory which lies north of a line drawn east from the southerly bend or extreme of Lake Michigan, until it shall intersect Lake Erie, and east of a line drawn from the said southerly bend through the middle of said lake to its northern extremity, and thence due north to the northern boundary of the United States, shall, for the purpose of temporary government, constitute a separate territory, and be called Michigan.

ILLINOIS (116)

Illinois Territory, originally part of the Territory northwest of the Ohio River and subsequently a part of Indiana Territory, was organized by act of February 3, 1809 (2 Stat. L. 514), effective March 1, 1809. The following clause from the act separating it from Indiana Territory defines its boundary(see fig. 26):

* * * from and after the first day of March next, all that part of the Indiana territory which lies west of the Wabash river, and a direct line drawn from the said Wabash river and Post Vincennes, due north to the territorial line between the United States and Canada, shall, for the purpose of temporary government, constitute a separate territory, and be called Illinois.

Illinois was admitted as a State with its present boundaries by resolution approved December 3, 1818 (3 Stat. 536). The enabling act defines these boundaries as follows (3 Stat. 429): * * * the said State shall consist of all the territory included within the following boundaries, to wit: Beginning at the mouth of the Wabash

River; thence up the same and with the line of Indiana, to the north-west corner of said state; thence, east with the line of the same state, to the middle of Lake Michigan; thence north along the middle of said lake to the north latitude forty-two degrees thirty minutes; thence west to the middle of the Mississippi river; and thence down along the middle of that river to its confluence with the Ohio River; and thence up the latter river along river along its northwestern shore to the beginning: * * *

The eastern boundary of Illinois was ordered surveyed in 1810 in connection with the work of the General Land Office. In 1821 the Legislatures of Indiana and Illinois ordered a survey of their common boundary. A commissioner representing each State was appointed, and the line was run and marked with wooden posts the same year from a point "opist the Vincennes Hotell on the N.W. Bank of Wabash river" northward to Lake Michigan. There is a signed copy of the field notes in the Indiana State Library at Indianapolis.

The Geological Survey determined the position of a large stone post on the north bank of the Wabash where the State boundary line leaves the river as lat 39°20'57.6" N., long 87°31'52.9" W. At lat 41°17'53" N., the longitude of the line is 87°31'36.5" W.

OHIO (114)

The west boundary of Ohio is that fixed by the enabling act—a line due north from the mouth of the Miami River.³² It was surveyed and marked in 1799 from the south end northward to Fort Recovery as the first principal meridian of the General Land Office. (See fig. 26.) This line was extended to the present northwest corner of the State in 1817.

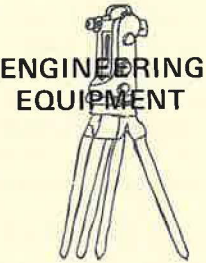
³²The present mouth of the Miami River is a short distance east of the mouth in 1799.



AUDIO-VISUAL
SALES/RENTALS



DRAFTING
SUPPLIES AND
EQUIPMENT



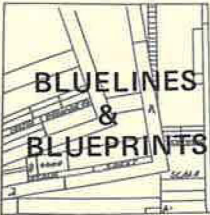
ENGINEERING
EQUIPMENT

MARBAUGH ENGINEERING SUPPLY CO., INC.

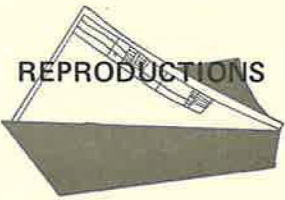
121 West North Street, Indianapolis, Indiana 46204

Phone: 632-4322

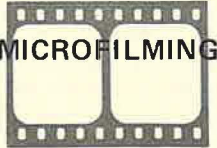
MARBAUGH... A NAME YOU CAN DEPEND ON.



BLUELINES
&
BLUEPRINTS



REPRODUCTIONS



MICROFILMING



PRINTING
&
COMPOSITION

LAND PARCEL IDENTIFICATION FOR AUTOMATED LAND INFORMATION SYSTEMS

DARRELL R. DEAN, JR., Teaching Assistant *
Surveying and Mapping
Purdue University

RECOGNITION OF NEED FOR MORE EFFICIENT SYSTEM

The impetus for a computerized information system grew out of a need for an improvement in the present land title system. It is well known, to the surveyor, that to find perimeter descriptions—for the property being surveyed and for the adjoining properties—it may require considerable skill and time in searching the public records. It is equally well known to abstractors and attorneys that all the elements for a title search cannot always be obtained with certainty. These factors of time and uncertainty are frustrating to the professionals and costly to society.

In 1963 the American Bar Association's Section on Real Property, Probate, and Trust Law created a Committee on the Improvement of Land Title Records to work toward modernization of land records through proper and efficient use of technological developments, including computers, and the enactment of needed laws. This committee recognized that perhaps a multi-discipline approach was needed. Subsequently, through the efforts of the legal, the surveying and mapping, and the land title communities as well as backing from some governmental agencies, conferences were held to look into the problems associated with land data systems.

The first two conferences—one in Cincinnati, Ohio (1966) and the other at Mackinac Island, Michigan (1966)—dealt with determining general problems concerned with automated land information systems and how they might be solved. Similar conferences were also held in Canada. The third conference—in Atlanta, Georgia (1972), the CLIPPP Conference—concerned itself with the selection of an identifier to link all data with a specific land parcel and the definition of just what a parcel should be. Subsequent to the CLIPPP Conference, the North American Institute for Modernization of Land Data Systems was incorporated to help evolve and implement modern land data systems in North America. This organization held a conference in the spring of 1975 and concerned itself with the conceptual, technical, and operational aspects of a modern land information system.

SOME BASIC PROBLEMS

The following are some of the pertinent findings that can be inferred from the first two conferences:

1. Large volume of data in more than one location: not efficiently organized for volume processed.
2. Many branches of government collect, organize, and use data which are related to specific parcels of land: land use, resources, people, titles.
3. There is often duplicate effort in collecting and processing land data: perhaps one-third of the data are collected in duplicate.
4. Nonstandard method of data collection and processing: makes multiple use and comparison of data among government agencies difficult or impossible.

A SOLUTION TO PROBLEMS

The conclusion was that an integrated land information system with development input from many disciplines was needed to eliminate duplication and provide for the efficient handling of data. There is a need for more than just the automation of the present system. This would not eliminate duplication or provide for an easy interchange of information. Also, automation for single purposes is very expensive and has not always proved totally acceptable. Some planning agencies have initiated computerized land information systems only to find that their

information was outdated in a short time and that updating the information was prohibitively expensive.

CHARACTERISTICS OF A MODERN SYSTEM

Professor Robert N. Cook (1966) of the University of Cincinnati has outlined some characteristics of what might be the ultimate in the way of automated land information systems. These are characteristics of what Professor Cook calls the CULDATA—Comprehensive, Unified Land Data—System. The characteristics are as follows:

1. Comprehensive—must be comprehensive to meet total governmental—local, state, and federal—responsibilities and needs with no unnecessary duplication.
2. Unified—so that data can be compared and aggregated with data of the same type from other systems.
3. Description of land by use of coordinates which are tied into the national control system and which meet recognized legal standards for land descriptions.
4. A modern system of land title records with an index by parcels as well as by owners.
5. Use of the same parcel identifier for land title, taxation, land use, and land planning.
6. Use of a national grid, or two or more compatible grid systems of which at least one meets legal standards of accuracy for land surveys, as well as meets requirements for the national mapping program using the modern technology of photogrammetry and remote sensing for collecting environmental data.
7. Use of a national system of code numbers to identify natural persons, corporations, and organizations.
8. Use of a uniform method of coding data so that it can be efficiently stored and with the proper software be manipulated to yield any possible combination in an output tabulation.
9. Must be compatible with manual techniques and be susceptible of stepwise implementation.

PARCEL IDENTIFIER

The problem of determining what the parcel identifier, mentioned in characteristic number five should be, was considered at the CLIPPP Conference in Atlanta in 1972. At this conference a definition of a parcel was also established. This was important because of the various types of data that may be linked to the land (e.g., what might be a satisfactory unit or area for planning data may not be satisfactory for land title data). The definition of a parcel is as follows:

"A parcel is a contiguous area of land described in a single description in a deed or as one of a number of lots on a plat; separately owned, either publicly or privately; and capable of being separately conveyed. For ease of indexing data, a segment of a street, highway, railroad right-of-way, pipeline, or other utility easement maybe treated as though it were a parcel." (Moyer and Fisher, 1973)

The various types of identifiers that were considered could be classified into two groups: (1) noncoordinate systems and (2) coordinate systems. Some examples of noncoordinate systems are: (1) street address, (2) grantor-grantee index, (3) block and parcel system used in some cities, (4) U.S.P.L.S. digits along with perhaps an arbitrary parcel number, and (5) map-based systems—based on tax assessor's map—which generally consist of a book number, sheet number, block number, and arbitrary parcel number.

* On leave from Glenville State College, Glenville, West Virginia

Some examples of coordinate-based identifiers are those based on: (1) latitude and longitude (2) U.T.M. grids, or (3) the state plane coordinate grids. Consideration was also given to identifiers based on a combination of coordinate and noncoordinate numbers.

The conferees in Atlanta recommended a standard parcel identifier based on plane coordinates of the visual center of the parcel. They also recognized the need for more than one type of identifier. This recommendation was modified to some extent by Moyer and Fisher, the editors of the conference proceedings, to be an identifier based on the state plane coordinate grids. Moyer and Fisher recommend that the basic identifier be a 15-digit number consisting of three elements. The three elements are:

- 1) State number (from Federal Information Processing Standards (FIPS) = 2 digits
- 2) County number (from FIPS) = 3 digits
- 3) Parcel number (state plane coordinate values to nearest ten feet for the visual center of the parcel) = 5 digits for X coordinate and 5 for Y coordinate

In addition a check digit is recommended to be appended to the basic identifier.

VERTICAL PARTITIONING

For vertical partitioning it is recommended that a Z coordinate or elevation above sea level be used. It is also recognized that other identifiers might be more suitable for a particular use (e.g., apartment numbers for condominiums). In any event the vertical partition identifiers would be stored in a separate file, but, of course, linked to a horizontal location with the standard parcel identifier.

IMPLICATIONS FOR SURVEYING

Some implication of a CULDATA System for the surveying community are:

1. Does not mean large-scale surveying operations to resurvey each individual property.
2. Perhaps addition control surveying will be needed—particularly for mapping.
3. The surveyor, particularly the county surveyor, should make recommendations for tax mapping, keeping in mind that the maps should be based on sufficient control so that a state plane coordinate grid could be over laid on it.
4. The surveying profession as a whole may be called on to upgrade surveying practices so as to be commensurate with the advantages of using a state plane coordinate grid.
5. When the system is implemented, it should make the surveyor's job of acquiring record information considerably easier.

REFERENCES

- Cook, R. N. and J. L. Kennedy, Jr. (eds.), 1967. *Proceedings of the Tri-State Conference on a Comprehensive, Unified Land Data System (CULDATA)*. University of Cincinnati, Cincinnati, Ohio.
- White, J. P. (ed.), 1968. *Proceedings of a Workshop on Problems of Improving the United States System of Land Titles and Records*, July 25-29, 1968, Indiana University, Indianapolis Law School, Indianapolis, Indiana.
- Moyer, D. D. and K. P. Fisher, 1973. *Land Parcel Identifiers For Information Systems*. American Bar Foundation, Chicago, Illinois.
- _____, 1975. *Proceedings of the North American Conference on Modernization of Land Data Systems (A Multipurpose Approach)*, North American Institute for Modernization of Land Data Systems, Washington, D.C.

EDITOR'S NOTE: This article is from *Proceedings of the 62nd Annual Road School*, March 9-11, 1976; Series No. 147, Engineering Extension Series, Purdue University.

**For the first time
everyone in Indianapolis
can get everything
in graphic services
under one roof!**

Photographic Reproduction
For engineers, photo reproductions on film & paper in any size you need. Fast, reliable service, no matter how big a rush you may have.

Engineering Microfilm
Complete microfilm services at very reasonable rates. Special attention paid to those important drawings. Don't hesitate to call us at a moment's notice.

White Printing
For architects, engineers and students, the fastest white prints in town. Everything from quick check prints to a complete repro job. Pick up & delivery service, of course.

Offset Printing
Headquarters for quantity printing of letters, envelopes, reports, vouchers, newsletters, bulletins, etc. We do it the right way, the first time.

Drafting Equipment
For the professional, the finest equipment at prices consistent with your needs. Drafting Tables... Staedtler Mars and Rapidograph Humidor Pen Sets.

Copying
If you have one piece, ten pieces, 100 or 1000, we'll do it for you fast, courteously and correctly. You can't find service like that everywhere!

Diazo Prints
First choice of architects, engineers, designers, surveyors... everywhere. Also fluorescent type. Diazo prints for checkprinting and home use. Complete supplies and equipment.

Audio-Visual
Modern, compact audio-visual equipment improves your business, sharpens your sales presentations, clarifies your thinking. Reasonable rentals.

gsf printExpress
2260 Distributors Drive
Fletcher Industrial Park
Indianapolis, Indiana 46241
317-241-2877
We'll help you express yourself. Fast and inexpensively.



THE FOLLOWING COMMERCIAL EXHIBITORS PARTICIPATED IN THE RECENT INDIANAPOLIS CONVENTION. THEIR SUPPORT WAS GREATLY APPRECIATED.

Hickerson Instrument Co., Inc.
6009-11 East 34th Street
Indianapolis, Indiana 46226
Marty Mueller

Surdex Corporation
25 Mercury Blvd.
Chesterfield, Missouri 63017
Glen R. Buckland

Harrison Marker & Instrument Co.
P. O. Box 588
Anoka, Minnesota 55303
David Johnson

Keuffel & Esser Co.
309 Era Drive
Northbrook, Illinois 60062
Phil Sandoz

Brunning Division, A/M Corp.
2626 E. 46th Street
Indianapolis, Indiana 46205
Robert S. Benton

Hewlett-Packard
148 Weldon Parkway
Maryland Heights, Missouri 63043
Rob Cochran

Wang Laboratories, Inc.
8790 Purdue Road
Indianapolis, Indiana 46268

Schonstedt Instrument Co.
1775 Wiehle Avenue
Reston, Virginia 22090
O. K. Davis

Technical Advisors, Inc.
4455 Fletcher Street
Wayne, Michigan 48184
Edwin W. Miller

G. Lengemann Company
2314 N. 5th Street
Niles, Michigan 49120
Gerhard Lengemann

National Surveying Instruments Inc.
4050 W. Parker Avenue
Chicago, Illinois 60639
Joel Newton

Accu-Air Surveys, Inc.
P. O. Box 1000
Columbus, Indiana 47201
Weldon Carlin

GAF
2040 S. Lynhurst Dr.
Indianapolis, Indiana 46241
Stuart Goldner

Marbaugh Engr. & Supply Co.
121 W. North Street
Indianapolis, Indiana
Charles Marbaugh

Seiler Instrument & Manufacturing Co.
170 E. Kirkham Avenue
St. Louis, Missouri 63199
Herb Wiess

Ellubusch Instrument Co.
4509 Vine Street
Cincinnati, Ohio 45217
Philip Fischer

Mid-States Engr. Corp.
107 N. Pennsylvania Street
Indianapolis, Indiana 46204
Sol Miller

Dietzgen Corp.
250 Wille Road
Des Plaines, Illinois 60018
C. M. Wessman



ATTORNEY GENERAL'S
OPINION SOUGHT

For several years George A. Trabits, Warrick County Surveyor, has been concerned about surface mining and corner perpetuation. Over a year ago he wrote to Theodore L. Sendak, Attorney General, State of Indiana, as per the letter reprinted below in which he asked for an official opinion on section corner restoration. In October 1976, Mr. Sendak informed George Trabits that an opinion would not be forthcoming unless the request was forwarded by a state legislator. He is now submitting the request through a legislator. When, and if, an opinion is made, it will be printed in the Newsletter.

GEORGE ALLEN TRABITS
WARRICK COUNTY SURVEYOR
BOONVILLE, INDIANA 47601

May 20, 1974

Dill Bivens
Amox Coal Company
Chandler, Indiana 47610

Dear Mr. Bivens:

In 1965 the Indiana General Assembly passed the "Perpetual Corner Records Act" whereby starting with the year 1966 the County Surveyor must establish and reference at least 5% of the original government corners in his County annually.

In 1973 this office established a program for the perpetuation of such corners.

To date most of our work has been in the southern portion of the County.

Original government corners are obviously nonexistent in old strip mine areas. The possibility exists without adequate precautions that additional corners will be lost in areas yet to be strip mined.

This office is referencing and certifying as many corners as possible per year; however in strip mined areas conventional referencing alone will not perpetuate these corners.

Therefore, where at all possible, it is requested that existing corners you encounter be tied in to your mine coordinate system so that re-establishment of such corners can eventually be accomplished.

Sincerely,

George Allen Trabits
Warrick County Surveyor

GAT/lb
cc file

GEORGE ALLEN TRABITS
WARRICK COUNTY SURVEYOR
BOONVILLE, INDIANA 47601

July 29, 1975

Theodore L. Sendak
Attorney General, State of Indiana
219 State House
Indianapolis, Indiana 46204

Re: Official Opinion Section Corner Restoration

Dear Mr. Sendak:

Warrick County has large reserves of coal as one of its natural resources. Surface mining has been and is the prime recovery method in use. Past surface activity has involved contour mining which is limited by the amount of cover over the vein. Contour mining is often limited so far as vast surface area disturbance. Present surface mining activity involves area mining where a large amount of contiguous surface area is disturbed.

This creates a problem with section corner perpetuation that is not unique to Warrick County. Many corners have been lost by past mining activity. Restoration is difficult because all accessories pertinent to the corner in question have been destroyed. Restoration can only be completed by proportionate measure to interdependent corners. Corners now existing and corners that may exist are in jeopardy in mining areas. Corners now existing are those that have been officially perpetuated using conventional referencing methods. In mining areas both the corner and references are destroyed. The current statute concerning landmarks (Burns 10-4512) has not been enforced locally but would probably serve as an inconvenience rather than a deterrence. Corners that may exist are those that have not been officially referenced. Although this office's perpetuation program is active there are many such possible corners that are mined through. Realizing this problem on May 20, 1974 a letter was sent to each coal operator in Warrick County stating the problems. (Copy enclosed). At this date I have not received any official replies from the coal operators.

Because protection and perpetuation of government corners directly affects descriptions and boundaries of real property I request your official opinion on the following:

1. Concerning the problem of previously destroyed corners. Would aerial photographs taken before surface mining activity lend support to the past existence of a corner? (Fence rows, tree lines, roadways, etc.) If so, could such aerial photographs be considered as evidence for use in corner restoration? Are the past coal operators responsible for the restoration of such corners?

2. Concerning the problem of officially perpetuated corners

(cont.)

Page 2
Re: Official Opinion Section Corner Restoration

located in the mining area. In lieu of prosecution concerning landmarks can the County Surveyor require the mine operator to reference the corners, by a proven and reconized method of survey, to monuments outside the mining area? Then, could the County Surveyor require corner replacement after mining reclamation?

3. Concerning the problem of corners that may exist that have not been officially referenced. Because the law provides for the protection of known corners as being the County Surveyor's responsibility can the County Surveyor require the mine operator to make a reasonable search for possible corners and reference found corners, by a proven and reconized method of survey, to monuments outside the mining area? Then, could the County Surveyor require corner replacement after mining reclamation?

Sincerely,

George Allen Trabits
George Allen Trabits
Warrick County Surveyor

GAT/bw

Encl.

HIGHLIGHTS OF 4th ANNUAL RECOGNITION DINNER OF PURDUE STUDENT CHAPTER A.C.S.M. - I.S.P.L.S., APRIL 1976



Seventy-seven student land surveyors, faculty, wives or girl friends, and invited guests attended dinner held at The Oaks Smorgasbord, West Lafayette



Guest speaker Walter G. Robillard, Regional Land Surveyor, U.S. Forest Service, and Chairman of Land Surveys Division of ACSM.



Roger Fine, left, of Crawfordsville receiving the ISPLS \$500 Scholarship from Roger Woodfill, chairman of the ISPLS Education Committee.



Bill Watson, left, of Mt. Morris, Illinois, receiving the Faculty Award from Prof. Curtis as the Outstanding 1976 Graduating Senior Award.



Other outstanding seniors receiving ACSM membership awards were, left to right, Bruce Copp, Kevin Potter, and Gary Kent.



May 1976 graduates attending dinner included, seated, left to right, Kevin Potter, Ronald Wharry, Bruce Copp, Gary Smith; standing, Jeffrey Jones, Phillip Burress, Timothy Warner, Gary Kent, and Vernon Shanklin. Several others were unable to attend.



August or December 1976 graduates attending included, seated, left to right, Jeffrey Tuttle, James Kovas; standing, David Wonn, William Watson, and Patrick Cunningham.



1976-77 School year officers of Purdue Student Chapter, ACSM-ISPLS, are seated, left to right, Roger Fine, president; Julian Rouch, vice-president; standing, Jeff Tuttle, director; David Bortner, treasurer; Charles Storey, secretary. Other directors not present were David Moore and Dennis Singer.

PRESENT DAY SURVEYING IN CLARK COUNTY, INDIANA

BY ROLLYN H. BLANKENBEKER
CLARK COUNTY SURVEYOR

I was asked to write this article on the problems of modern day surveying in George Rogers Clark's Grants as compared to the United States Government Systems of rectangular Surveys, but first a little more on the history of the Illinois Grant.

As was stated in an earlier article by Ken Curtis, Clarks original surveys were to be 500 acres each. Generally, they are in the shape of a rectangle, and are 266 2/3 poles, by 300 poles, or 4400 feet by 4950 feet. One of the exceptions to this is Grant No. 8 which is an 8 sided figure because it matches the boundary of the original Town of Clarksville, and Grant No. 7 which is approximately a triangle due to the bend in the Ohio River. Due to the odd shape of the Illinois Grant as a whole, the Fractional Sections which about the Grants also have unusual shapes. This author has been told by older surveyors that the Illinois Grant was the first land surveyed out of the Northwest Territory, and that the basis for the Grant lines was determined by the Ohio River, which runs approximately N.50° E from Grant No. 1 which is just above the falls of the Ohio River to Grant No. 6, a distance of approximately 5 miles and at 90° to this line or N.40° W. If this is true, this author has not been able to validate these claims. These magnetic bearings have been found to be approximately 5° off of true North or N.35°W. and N.55°E. .

Some of the problems of surveying in the Grants! A copy of the Original Survey Record Book is located in Jeffersonville, (the Original Volume was deposited with the Historical Bureau of the Indiana Library by the Clark County Recorder in 1925). It has the description of each individual Grant, but most descriptions call for the corners to be "Two black oaks, and a spanish oak", which, as you know, is not a very definite point. To my knowledge, no monuments were ever set by the original surveyors. Also, the original descriptions are for each individual survey, but many of the Grant Corners are off-set corners. The distances between these off-set corners, if measured, were never recorded.

The majority of the Grants were left as 500 acre tracts, but several were sub-divided into 100 acre tracts, and these smaller tracts were given a letter designation, usually A,B,C,D, and E. Most of these sub-divided Grants were lettered the same way (Grant No. 13 is typical of this), but not all and this can cause confusion to the modern surveyors. For instance, if a current deed says, "Beginning at the North corner of Letter B", In Survey No. 13, this would be the North corner of the Survey. But in Survey No. 30 it is a point S.40° E. 83 1/3 poles or 1375 feet from the North corner of the Survey. In Survey No. 57, it is a point S.50°W., 200 poles or 3300 feet from the North corner of the Survey.

The Original Grant lines were straight lines between the corners, but very few of the Surveyors since the Original Surveys have honored this. Some of the reasons are:

1. The corner is in-excessable, -The State Line, County Line, and Grant Corners are under water of the Ohio River, etc.
2. Rough terrain-Clark County varies in elevation from 383 to 1037 feet above mean sea level.
3. Economics-The cost of surveying a line from one corner to the other corner (one mile plus or minus) was more than the value of the land being surveyed.

The reasons just stated are a problem to the present day Surveyors in that one deed may call for a line from one original corner to another original corner, but the deeds for properties in the adjacent Grant may call for the Grant line to have many angles and this can create serious gaps and/or overlaps.

Since the original description of a particular Grant only describes the outside boundary, every tract of land that has been sold out of that Grant is described by a metes and bounds description and in some Grants this amounts to several hundred parcels. This creates a problem to the retracement Surveyor, because of ambiguity of some deeds, calls left out, gaps, overlaps, calls reversed, errors in acreage, unrecorded subdivisions and very few deeds that relate to each other. Almost all property in Clark County is described by metes and bounds, or as some people humorously refer to it, "leaps and bounds".

One particularly difficult survey that my late father and I completed in December of 1970, was situated in Survey No. 199 of the Illinois Grant and in Fractional Sections No. 2, and No. 11, T-1-S, R-5-E. (See enclosed drawing). A Mr. Speth came to us in the fall of 1970 and asked that we survey all of the property his late Great Grandmother, Emely Honneus, owned in the area just mentioned. We agreed to do the survey and after approximately one month, it was finished. Mr. Speth did not know exactly how much property

she owned and upon researching the deed records in the Recorders Office at the County Court House, we found that Mrs. Honneus and husband had acquired the land in seven deeds, the oldest being recorded in 1852, and the latest was recorded in 1892. One of these descriptions is recorded in Deed Record Book No. 65, Page No. 198 and was recorded on 14 January, 1875. It is typical and reads as follows:

This indenture witnesseth that Mary A. Reynolds and James P. Reynolds of Clark County, in the State of Indiana convey and warrant to F.H.C. Honneus of Clark County, in the State of Indiana for the Sum of one hundred and ten dollars, the following Real Estate in Clark County in the State of Indiana to wit: Being part of Survey No. 199 of the Illinois Grant and bounded as follows: Beginning at a stone South corner of Leney Merrills land in said No.; Thence South 42°E.21 1/2 poles along the Grant line to the Creek; Thence down said creek with its meanders to Shoemakers Mill lot line 45 6/10 poles; Thence North 22 1/2°W. 24 6/10 poles to Lucy Merrill line; Thence with said line to the place of beginning containing Six acres more or less. Also a strip of land in Said No. Fifteen feet in width. Commencing at the mouth of Turkey Run; Thence at a Northerly direction along the line to Merrills land. Containing one half acre more or less. In witness where of, the said Mary A. Reynolds and James P. Reynolds have hereunto Set their hands, and Seals this 14th day of January A. D. 1875.

Mary A. Reynolds
James P. Reynolds

State of Indiana SS
Clark County

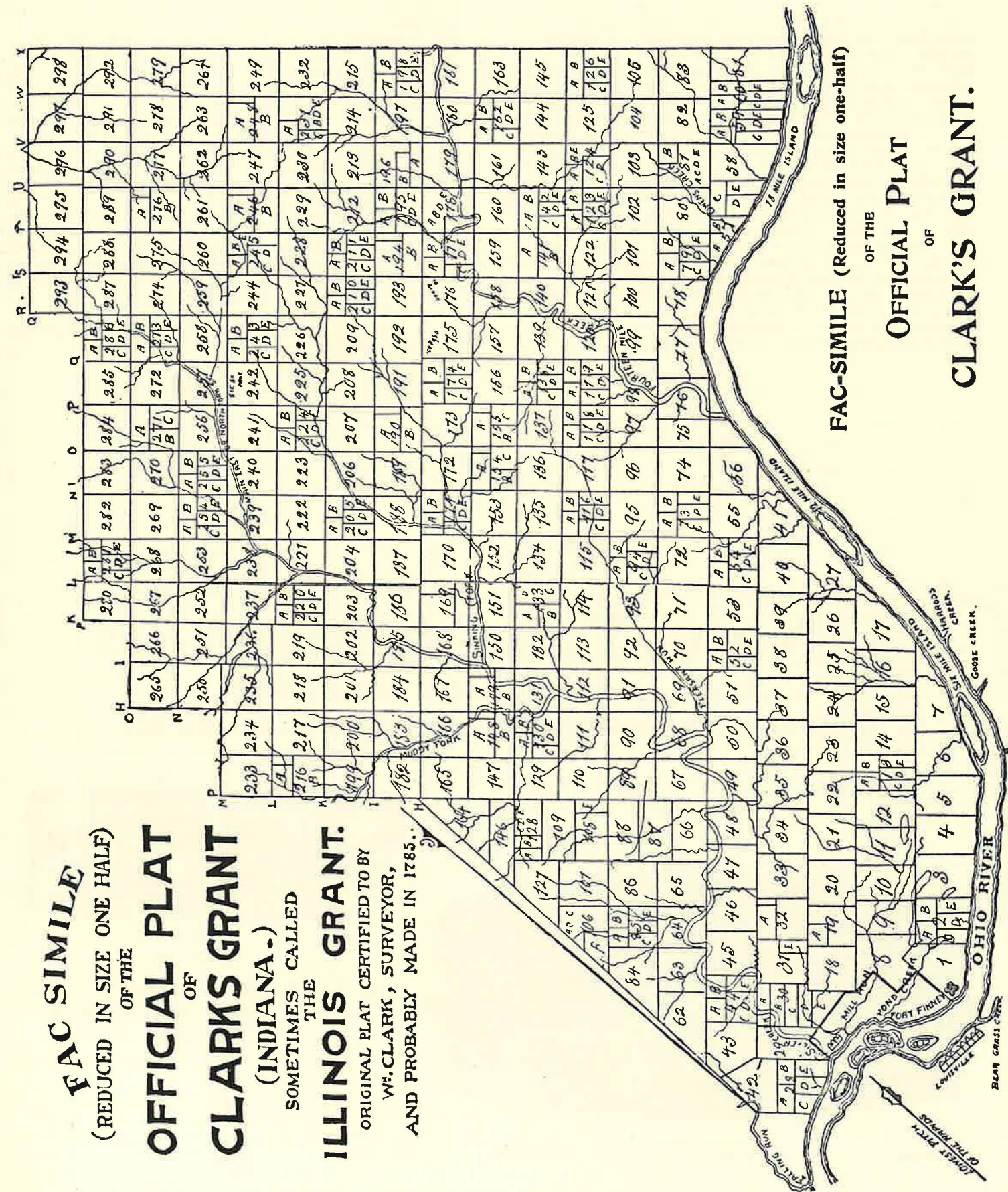
Before me, Levi P. King, a Justice of the Peace in and for Said County this 14th day of January 1875 came Mary A. Reynolds and James P. Reynolds and acknowledged the Execution of the annexed Deed. Witness my hand and official Seal this fourteenth day of January 1875.

Levi P. King (Seal)
Justice of the Peace

Two of the seven tracts had been sold for non-payment of Real Estate Taxes in 1946 to a Mr. Lee Williams and wife. Mr. Speth informed us that Mr. Williams was related to Mrs. Honneus and to include these two parcels in the Survey. As you can see on the map, Muddy Fork Creek runs through the area of the survey and in some places it is the boundary line. The property is heavily wooded and is in general, quite low and swampy. The creek floods every year, and temporarily inundates virtually all of the land that the Survey encompassed. One of these two tax title deeds had no description except "35.5 acres in Section No. 2 in Carr Township", nor could we find a description in a previous deed. The boundary had to be determined by adjoining deeds. As you have just read, some of the deeds called to adjoin to the boundaries of Shoemaker's Mill Lot, and an old cemetery. One of the adjoining deeds (The Keibler tract) is described as follows:

"54 acres of land in No. 199 of the Illinois Grant to be laid off in a square form in the North end of the tract of land purchased by John S. Pool of the Snow heirs and to be surveyed with lines running parallel with the Grant line". This is not a good description, but it indicates the land was surveyed, so we checked every preceding deed for the 54 acres and found that they all read exactly the same, back to 1865, when it was originally deeded out of a larger tract of land. So we concluded the 54 acres is still waiting to be surveyed. In the field, we could not physically locate the boundaries of the old cemetery, nor was there any clue as to where the "Shoemaker Mill" site had been located. At this point, my chief of the party, Cecil Rowland remarked, "What we need is an aerial photo taken in 1880", and I recalled what Walter Strahl, a former County Surveyor in Floyd County, Indiana had told me, "The easiest way to retrace the original lines of William Clark's Surveys is to drink the same brand of whiskey he did, but the hard part is in determining what that brand was". We managed to do the survey despite these handicaps. We did find 9 existing monuments that we used for control to complete the Survey.

The Weisenback tract was found to be landlocked and we were called back at a later date to survey a roadway to serve as access to his property. Also, we wrote a description for a 1.129 acre strip of land in 1974 which was deeded to the adjoining 12.8 acre because the cultivation line was not the same as the property line.

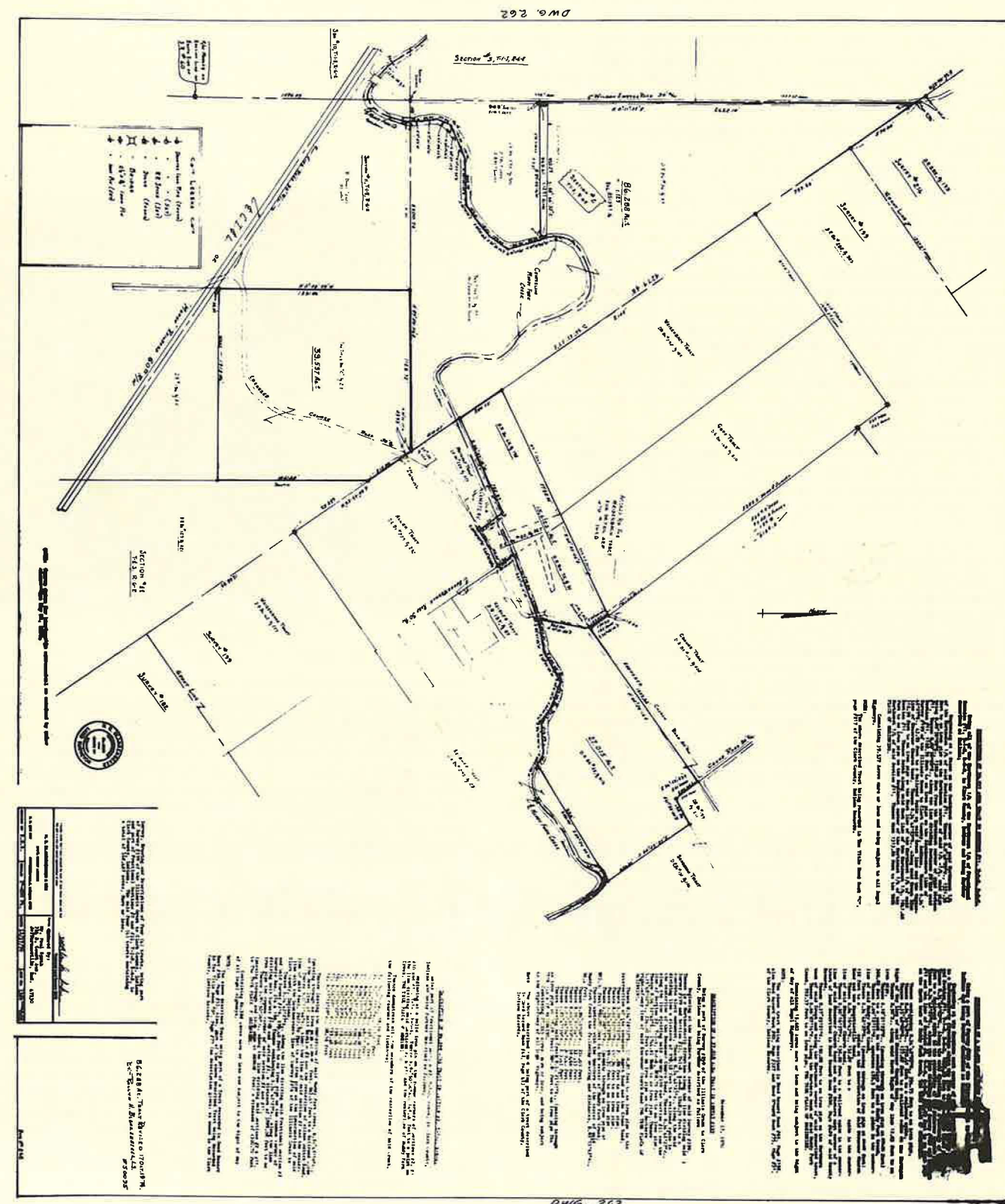


Not all surveys in Clark County are as difficult as this one was, but there seems to be more in Clark County than in other County's in Indiana.

Another problem that this author has incurred is the line between Surveys No. 201 and No. 218. In the original Survey Record Book, these Grants were recorded as 500 acres each, but in fact, Survey No. 201 is approximately 650 acres, and No. 218 is approximately 550 acres. The excess has been the problem since 1828. At that time a Newton Laughrey bought all of Survey No. 218 at a tax sale from persons unknown but he also took possession of approximately 150 acres in Survey No. 201 as there was no record owner of same at that time. He called the total 700 acres all in Survey No. 218. The same year he sold 100 acres to Ret. Gray (It was the 150 acres in Grant No. 201), and in 1845 he sold the balance of 400 acres, (It was all of Survey No. 218), to William Whitesides. Whitesides divided and sold this in 8 tracts totaling 550 acres. (The correct amount of Survey No. 218). From this you can see how the mistake occurred. All of the deeds since 1845 to date reflect this mistake except those descriptions written since 1960 when it was discovered that the Grant line between Survey No. 201 and No. 218 was really 1150 feet Northwest of where the deeds say it is. This author resurveyed the land between the paper Grant line and the true Grant line for the current owner in connection with a lawsuit over same. The court ruled in 1973 that the other surveyor was in error, but the deeds remain unchanged to date and will no doubt be a problem at some future date to other Surveyors.

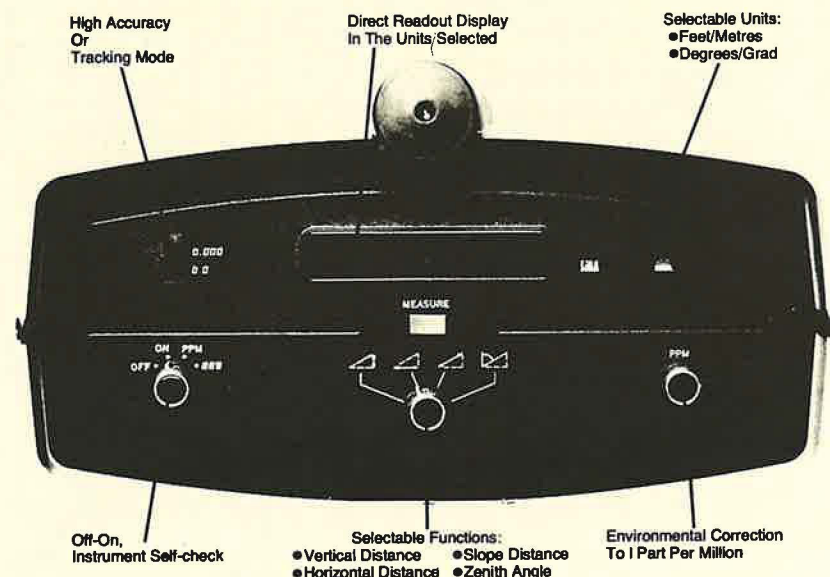
At another time the author was hired by a local Attorney to determine how much property remained in the Sam Stone Estate situated in Survey No. 58. Bull Creek runs generally North and South through the approximate center of Survey No. 58 and empties into the Ohio River. This is a major creek and is the property line for the majority of tracts that adjoin it. Some deeds began at the North corner of Survey No.58, but most of the deeds began "In the center of Bull Creek and in the centerline of the bridge on Bull Creek Road". In plotting the original deed and the sell-offs, it was apparent there was a gap of 600 feet on one side and an overlap of an equal amount on the other side. The question was why? The bridge was built in 1911 according to the County Engineers Records. By observation in the field, the answer was not evident. So as most surveyors say "Back to the drawing board"! After approximately 4 hours of research in the Records Office the answer was found. In 1937 the Corps of Engineers took flowage easements over all property that had been inundated by the completion of the McAlpine Dam at the falls of the Ohio. The deed pertaining to the area being surveyed stated that the bridge over Bull Creek would be moved 600 feet upstream and the road would be re-routed to it. Once that fact was found, the survey became less difficult. The tract surveyed totaled 22 acres with 1800 feet of creek frontage.

In conclusion, surveying in Clark's Grant is sometimes difficult, but always interesting.



New-Total Station.

Angle and automatic horizontal distance measurements from one instrument.



7301 NORTH SHADELAND AVENUE
INDIANAPOLIS, INDIANA 46250
317/842-1000



Sales and service from 172 offices in 65 countries.
P.O. Box 301 Loveland Colorado 80537

BUCKNER MAKES IT AND IT WAS WORTH IT!

EDITOR'S NOTE: The following editorial appears in the Ohio Surveying News, February 1977, and was written by the editor R. Ben Buckner of Columbus, Ohio. He did make it to Indianapolis and appeared on the program a day later than originally scheduled. It was not a waste of time, Ben, and the land surveyors of Indiana appreciate your dedication!

EDITORIAL

Richmond, Indiana, Howard Johnson's Motor Lodge, Room 215, January 28, 1977, 8:45 A.M. What am I doing here, you ask? It's a long story that started somewhere around 1950 or so, I suppose. My Sunday School teacher was a figurehead in my community who inspired many boys in many ways. He organized the first youth basketball team and sponsored many for membership in Demolays, including this writer. He was a Surveyor. So I might blame him in part. Or, perhaps it was my high school math teacher who brought out my mathematical talents. He was also a positive influence as he played Santa Claus each year in a little shack on the Court House square. Later, in college, Surveying was associated with a faculty all of whom were dedicated to their profession. People like Milton Schmidt and Winfield Eldridge had their hand in putting me where I am now — in Room 215 along I-70 in Indiana. People who command respect have a way of causing things with which they are associated to seem respectful. Such has been the case with surveying. I suppose if the people I'd known in surveying early in life had been anything other than solid citizens and dedicated people, I would have chosen another profession.

My career has brought me in contact with many people who have left their impression. In recent years I have learned that everyone in the profession is not a Saint or a Santa. We have many Scrooges with a "Bah-Humbug" approach as well. I have witnessed and been a part of the struggle between engineers and surveyors (or, is it survey engineers and surveyors, or, perhaps geometronists and surveyors — maybe, professional surveyors and surveyors?) I have seen drunken chairmen presiding over national meetings, foolish and inept individuals elected to office and accepting committee assignments that they have neither the time or the inclination to work on. I have listened to the same issues being argued year after year at both national and state conferences and observed groups wasting time being bogged down in senseless piecemeal solutions because they are unwilling to look deeper into the real gut issues.

I have witnessed, with agony, the petty politics and attempts to undermine the work of some, and have caught the brunt of some of this unprofessional conduct myself. It all makes one stop and pause on such a day as this and ask whether the surveyors of America want to improve, whether they have the maturity and dedication to stand on their own feet, whether they possess the necessary qualities to be able to confer and resolve issues without fighting, and if some of them really get much fulfillment other than the thrill of battle itself.

I don't want to give the impression of a pessimist, but rather that of a realist. We have national leaders who flit around the country telling of how rosy things are for the profession and we have people on the other extreme who scarcely can comprehend the simplest of issues and wonder what all of the fuss is about. We've got to start telling it like it is. Some must come down out of the dream world and others must educate themselves concerning the issues. Leaders must develop true leadership traits, strike the thirst for power and mere prestige from their ambitions and learn to guide and direct our destinies.

In 1977 we are faced with the same and a few newer and more complex problems which parallel the energy crises itself in importance as pertains to our profession. We have inadequate laws regarding preserving survey evidence, an office of county engineer which has outlived its usefulness as pertains to surveying, unwillingness of surveyors to insist that state laws be passed to require recording of surveys, lack of education and petty fears that continuing education will somehow damage the brain, no written standards, and continual infighting that itself defines the common denominator of our problems. On the national scene we see a national registration exam that has taken hold partly as a convenience for boards who can't find surveyors who are willing or able to write exam material; we see engineering groups all over



Ben Buckner

who are addressing themselves to accreditation of curricula, registration, and legislation for surveyors while the surveyors sit back and draw in the dirt or play amusing little word games at conventions and meetings. We see awesome national movements to define surveying as a trade and pressure from bureaucrats and wellmeaning civil rights groups to make sure that we have "equal opportunity", all of which complicates and sometimes runs adverse to efforts to upgrade registration and education. We have people passing registration exams who can't perform basic surveying calculations or analyze the simplest boundary problem, and nobody cares enough to raise a little hell about it. Add to this the movements toward unionization, "sunset legislation", and citizen groups wondering why we need registration anyway, and we have real problems. Yet, we continually waste time on the symptoms (those "shoddy practitioners," for example) instead of formulating the issues and problems.

So, what am I doing here in this motel room? I'm supposed to be in Indianapolis giving a presentation to the ISPLS on ancient history of surveying. But, a blizzard is raging outside. And, in my forced hibernation, the above thoughts have passed through my mind. Is it really worth it to go to speak to a surveyors' group? Do the surveyors of Indiana or any state really care who or what is on their meeting program as long as they get away from their job for a few days? Will my presence or presentation stimulate them or bore them? Has 10 years of college education and several more of self study really been worth the sacrifices?

I just don't know if facing the 40MPH blizzard and associated risks are worth the effort. I am bogged down by the weather, but also feel "snowbound" and unable to move forward amidst a tide of passivity and dissension. Will I turn around and head back to the warmth and security of my home or the ivory tower at the university or will I once again venture out into the uncertain and risky experience of dedicating time to a floundering profession?

I can't blame my Sunday School teacher, high school math teacher, or college instructors, but only myself for being stuck here today. But realizing that I can turn around and go back is a relatively new revelation. Which will it be today, Columbus or Indianapolis? Somehow this decision right now seems very important.

In 1976 an association was formed between Carlisle Madson of Hopkins, Minnesota and R. Ben Buckner of Columbus, Ohio for the reprinting of significant surveying books which are out-of-print and of current practical value to the surveyor. These two men are actively involved in the profession of surveying and well qualified to adjudge which books are most valuable. Dr. Buckner, who has developed most of the core program for the Bachelor of Science in Surveying degree at The Ohio State University, teaches what may be the first and only complete college course in surveying history. He has also presented several lectures on history of surveying. Carlisle Madson has long held a keen interest in surveying history, particularly concerning public lands resurvey problems. Mr. Madson is Executive Vice President and principal surveyor of Schoell & Madson, Inc., Consulting Engineers and Land Surveyors. He is well known for his overall leadership in the profession and many will remember his "Compilation of Rules for Land Surveyors" printed and reprinted in several state newsletters. Both men are registered surveyors and are considered leaders in the profession. Both are members of the ACSM Historical Surveying Committee recently formed by President Sam Baker and chaired by Walt Robillard, LSD Chairman.

The books being reprinted by Madson and Buckner are sold by Landmark Enterprises, owned by Roy Minnick, Senior Boundary Officer for the California State Lands Commission. Mr. Minnick also teaches surveying at Sacramento State College and has developed a course on boundary relocation. His mail order book business grew from a desire to make available his own lecture notes as well as other books on surveying. Landmark was started to overcome the lack of variety and frequent unavailability of books for fellow surveyors and students. Under his direction Landmark remains interested in professional surveying and in survey education. A portion of every book printed by Landmark is used to support a survey scholarship in the Sacramento City College survey program. Students are also employed in the bookstore operations. Roy will be remembered to many for his publication "Day of the Landmark" which appeared in the ACSM Bulletin and several state newsletters.

These three gentlemen have a sincere interest in education of practicing surveyors and hope that making books available will help improve practices. At present, the following reprints by Buckner and Madson are available:

Stewart, Lowell S. Public Land Surveys: History, Instructions, Methods. (originally published by Collegiate Press, Inc., Ames, Iowa, 1935) \$8.95, hardbound, 185 pages.

Hodgman, F. Land Surveying. (originally published by F. Hodgman, Climax, Michigan, 1913). \$11.50, hardbound, 472 pages.

In early 1977, the following two books will also be available:

Mulford, A. C. Boundaries and Landmarks. (originally published by D. Van Nostrand, 1912). paperback, 90 pages.

Hawes, J. H. Manual of United States Surveying. (originally published by Government Printing Office, around 1871). hardbound, 240 pages.

The reprints are facsimile reproductions made directly from an original copy, printed and bound using high quality methods as with modern textbooks. Prices are kept as low as possible and are well under the costs for modern texts. Any one would be a low-cost bargain considering their relative value in surveying practice. Facsimile reprints are emphasized here, but it should be mentioned that Landmark's catalog contains over 50 other titles, both current and reprinted material.

For a catalog write to Landmark Enterprises, Ft. Sutter Station 160502, Sacramento, California, 95816.

PHOTOGRAMMETRY



AERIAL PHOTOGRAPHY
TOPO-PLAN MAPS
ORTHOPHOTOMAPPING
VOLUMETRIC INVENTORIES
PLAN & PROFILE MAPPING
DATA DIGITIZING
PRECISE FIELD SURVEYS

25 MERCURY BLVD.
CHESTERFIELD, MO.

314 532-3427

**PUBLICATIONS AVAILABLE FROM
ISPLS HEADQUARTERS**

I.S.P.L.S. Surveying Publication Series

Quantity	Publication	Cost to Member	Cost To Non-member
_____	Manual No. 1 - <u>The Perpetuation of Corners in Indiana</u> by John G. McEntyre (June 1972), 100 pages.	\$ 5.25	\$ 7.50
_____	Manual No. 2 - <u>The Indiana State Plane Coordinate System</u> by Kenneth S. Curtis (June 1974), 196 pages.	\$ 5.25	\$ 7.50
_____	Manual No. 3 - <u>Law and Surveying</u> (including Surveyor's Guide to the use of a Law Library and Indiana Statutes related to Land Surveying), by Darrell R. Dean & John G. McEntyre, (April, 1975), 120 pages.	\$ 5.25	\$ 7.50
_____	Manual No. 4 - <u>Meridian Determination by Solar and Polaris Observation</u> , by Kenneth S. Curtis, (June, 1975), 194 pages.	\$ 5.25	\$ 7.50
_____	Manual No. 5 - <u>Computer Programs (HP-65 Documentation)</u> by Charles C. Campbell (February 1976), 219 pages and contains 50 surveying programs.	\$30.00	\$45.00
_____	Manual No. 6 - <u>Establishment of Boundaries by Unwritten Methods</u> by John G. McEntyre (June 1976), 171 pages.	\$ 5.25	\$ 7.50
_____	Manual No. 7 - <u>Optical Distance Measurement</u> by Kenneth S. Curtis (June 1976), 169 pages.	\$ 5.25	\$ 7.50

Name _____

Street _____

City _____ State _____ Zip _____

Member ISPLS yes _____ no _____

Total Amount Enclosed \$ _____

Mail To: **Indiana Society of Professional Land Surveyors, Inc.**
1224 N. Capitol Ave.
Indianapolis, Ind. 46202

(*Price includes postage)



DICKERSON AERIAL SURVEYS

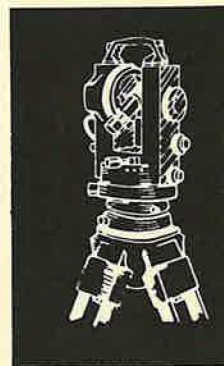
729 S. FOURTH STREET, LAFAYETTE, IN 47905 317-474-9279

BRIAN M. DICKERSON PE, L S

THE HOOSIER SURVEYOR
Indiana Society of Professional Land Surveyors, Inc.
1224 N. Capitol Avenue
Indianapolis, Ind. 46202

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

G. Lengemann Company



We are distributors for;

Kern; Wild; Lietz; K & E; David White; Gurley; Nikon; Geotec; Dietzgen;

Shonstaedt magnetic locators

Aqua Valve Box locators

Chicago Steel tapes

Lufkin Tape measures

Plastic flagging, spray paint, range poles, level rods.

Hand levels, PK Nails, Rolatapes, Lumber Crayons, Safety Equipment, Traffic Cones.

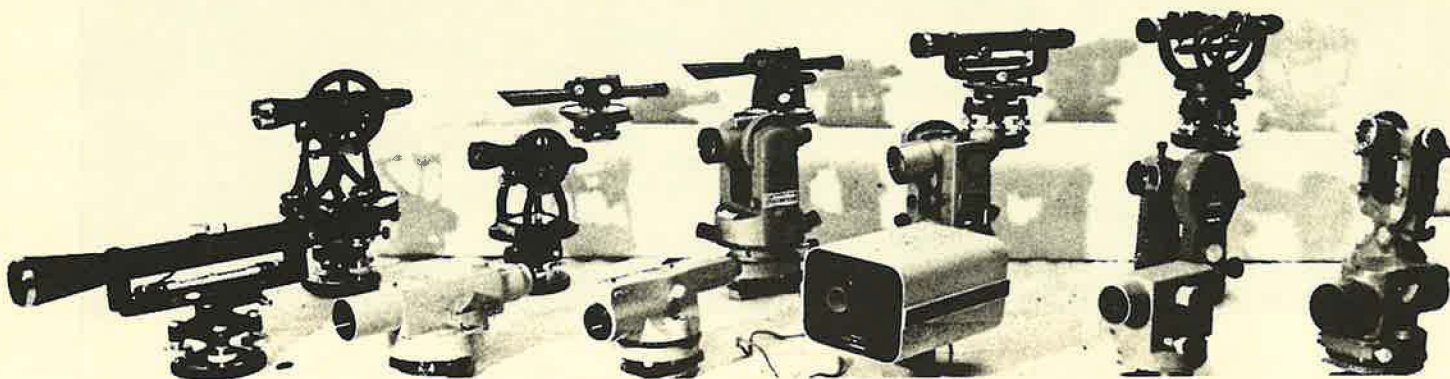
Instrument Rentals including;

E.D.M. Measuring Equipment

Lease Purchase available

SERVICE IS OUR BUSINESS

Complete service and repair on
all makes and models of surveying
instruments specializing in repair
of dropped theodolites and
automatic levels.



2314 No. Fifth St. • Niles, Michigan 49120 • 616-684-2116
Off Boys Ranch Rd. • Altoona, Florida 32702 • 904-669-4991

Complete Repair Service On All Types and Makes of Surveying Instruments in Both Locations