

SURVEYOR

HOODSIEER

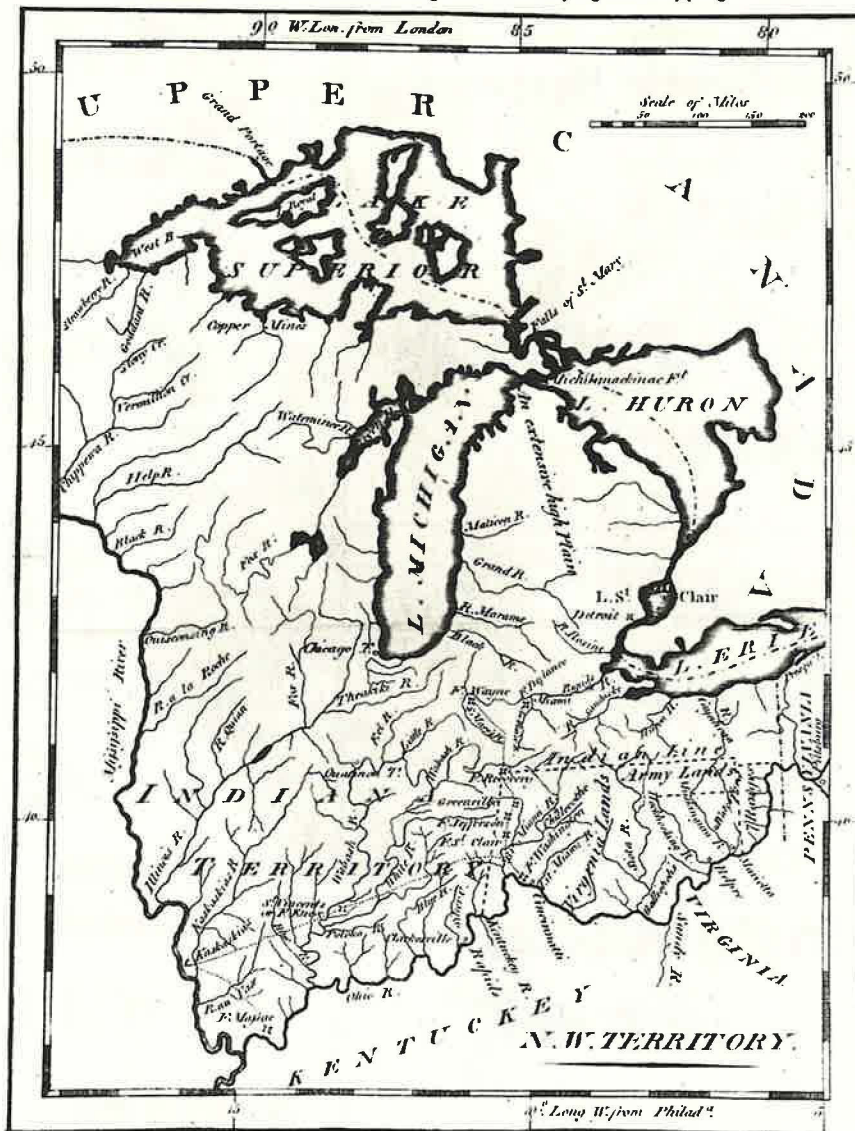


VOLUME 7
NUMBERS 3 & 4
SUMMER-FALL 1980



Indiana Society of Professional Land Surveyors, Inc.

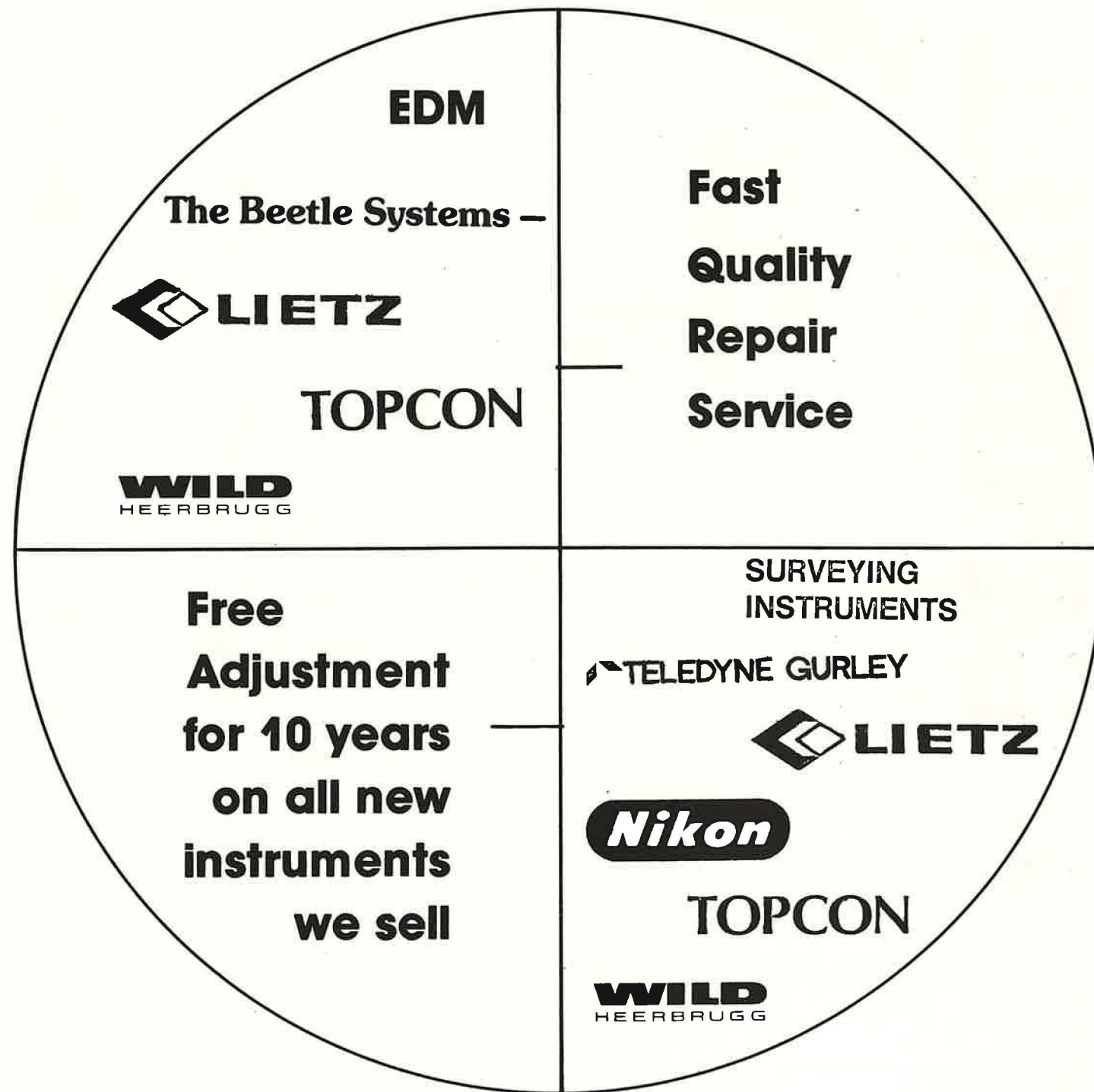
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HOOSIER SURVEYOR

VOLUME 7, NO. 3 & 4, Summer & Fall 1980

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COVER: Mathew Carey's map of the Northwest Territory was a part of the 1801 edition of his American Pocket Atlas published in Philadelphia. This map is a part of a library exhibit on "Indiana and The Old Northwest" being held on the third floor of Indiana State Library and Historical Building, Indianapolis, to commemorate the 150th anniversary of the Indiana Historical Society. The exhibition will run from October 31 to February 28, 1981 and contains historical maps, documents, writing, and drawings that should be of interest to land surveyors.

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

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Kenneth S. Curtis Editor
Gary Kent Associate Editor

THE PRESIDENT'S PAGE

PRESIDENT'S MESSAGE

By C.A. Budnick

In my last message, I spoke of the need for broadening and expanding our education and training for those who are embarking on a surveying career.

Now let us examine the educational needs of the practicing Professional Surveyor. In order to do this, we must first determine what a professional is. Both Webster's Dictionary and Roget's Thesaurus: Use the words "skilled" and "learned" in defining the word professional. In The Sociology of Education, Dr. Olive Banks states: "While there may be no exact definition of a professional, there is general agreement that a professional occupation is one that entails a long period of specialized training and a defined field of knowledge." However, I believe that W. Somerset Maugham said it best: "One of the greatest differences between the amateur and the professional is that the latter has the capacity to progress."

If we combine the key words in the above definitions, we could say that a professional is one who advances in his skill and knowledge - one who continues to develop his professional capabilities. It is this concept of a professional that has led to the idea of making continuing education a requirement for re-licensure. While this subject evokes much division amongst the engineering and surveying communities, I believe that if the surveying community doesn't recognize its responsibilities in this area, the results could be fatal.

The impact of technological change on the surveying profession is beginning to accelerate rapidly. In the next decade, the range of knowledge that will be required at any point in time may become overwhelming. Consequently, the professional of the future will have to undergo re-training in several disciplines throughout the length of his surveying career. Ten years ago, the Ring of Iron study summarized the professional's responsibilities in this area very succinctly: "Since accountability is the hallmark of any profession, surely there is reason for insisting that its members maintain and enhance their ability to account to society for their actions. The dynamism of tomorrow's technology will soon render today's techniques obsolete. The half-life of the content of the present engineering curriculum is no more than five years and so there is a compelling need for the continuing education of the engineer, together with a requalification process. In this way, assurance can be given to those served by the profession that it intends to fulfill its obligation to the society." (Ring of Iron: A Study of Engineering Education in Ontario - 1970, Phillip Lapp, Director)

Other professions are recognizing their responsibilities in this area. The trend toward mandatory continuing professional development is on the increase. Between thirty percent, and fifty percent of the states have continuing education requirements for accountants, veterinarians, physicians, and pharmacists; while approximately twenty percent have requirements for dentists, lawyers and social workers.

Recognition of these responsibilities by the surveying community could go a long way in improving the public's image of the surveyor as a professional. Certainly it cannot be argued that the concept of requiring continuing professional development for re-licensure is not a sound one, and if we can agree on this, then all that remains is to agree on a plan of implementation. If we disagree, then we are avoiding our professional responsibilities and should be prepared to accept the consequences.



Charles Budnick
President



NEW ADDRESS

8714 East 21st Street
Indianapolis, IN 46219

IMPORTANT DATES TO REMEMBER

January 28-30, 1981

1981 Annual Meeting of Indiana Society of Professional Land Surveyors, Holiday Inn, (I-65 and U.S. 30), Merrillville, Indiana.

February 22-27, 1981

ACSM-ASP Annual Meeting and Exhibit, Washington Hilton Hotel, Washington, D.C.

May 7-8, 1981

Spring Workshop, Indiana Society of Professional Land Surveyors, Purdue University, West Lafayette, Indiana. Topic: Retracement Workshop to be conducted the Bureau of Land Management.



The ISPLS Board of Directors met on Saturday, October 18, at McCormick's Creek State Park, Spencer, IN, at the close of the Fall Workshop on Storm Drainage Design. Those present, besides Ken Curtis, the picture-taker, were seated (left to right) David Wolf, Chuck Budnick, Al McConahay; standing, John Whitlock, William Davis, and Jerry Martin.



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M E M O

Address reply to: _____

DATE: 15 October, 1980

TO: All Members of ISPLS

RE: Mortgage Inspections for The Indiana Housing Finance Authority

As many of you are aware, from reports in the "Compass Newsletter", Wes Day of the Standards Committee has been actively developing a "Standard Mortgage Inspection Report" to be used on all Mortgage Inspections in Indiana. This action was prompted by concerns of the Title Underwriter's and Banking Community.

Recently however, the "Indiana Housing Finance Authority" came into being and issued their own "Surveyor's Certificate" to be used on projects that are funded through them. Due to both personal concerns and those expressed by some of our members, I asked Wes Day to compare the Housing Authority's Certificate with ours and report his findings.

A report of Wes' findings follows along with a draft of the two page "Indiana Mortgage Inspection Report" that is to be adopted by the Society. If you have any comments concerning this report, please put them in writing and forward to ISPLS Headquarters no later than November 30, 1980.

As to the Housing Finance Authority's Certificate? First, I urge you to write the Executive Director and inform him of your personal concerns and request that they adopt our Certificate.

Mr. Phillip E. Gutman,
Executive Director and General Counsel
Indiana Housing Finance Authority
P.O. Box 11468
Fort Wayne, IN 46858

Second, I have requested two of our Director's, David K. Wolf and William S. Davis to contact Mr. Gutman personally to request adoption of our Certificate.

Third, I recommend that until this matter is resolved, that you alter the Housing Authority's Certificate by deleting certain phrases and adding qualifying statements that will limit your liability to only those things which you can control.

Professionally,

C.A. Budnick, President

TO: Charles Budnick, President
Indiana Society of Professional
Land Surveyors

FROM: Wesley L. Day, Member
Survey Standards Committee

re: Mortgage Inspections for the Indiana
Housing Finance Authority

Following is the report you requested on mortgage inspections for the
Indiana Housing Finance Authority.

SURVEYOR'S CERTIFICATE

Recently, Indiana Land Surveyors have been asked by lenders
participating in the Indiana Housing Finance Authority (hereinafter
"Authority") Program to sign the following letter of certification:

(To be prepared on the letterhead of a licensed surveyor)

Date

Participating Lender
Participating Lender's Address

Indiana Housing Finance Authority
Authority's Address

Dear Sir or Madam:

I am an Indiana Registered Land Surveyor (See Comment 1
following) and on (insert date) I made a survey and
a physical inspection of real property located at
(insert address) and shown on the accompanying survey entitled:

I hereby certify to you, (See Comment 2 following) based
upon my inspection, that there is no evidence of any easements,
recorded or not recorded, other than as shown on the plat of
survey which I have certified to you with respect to such
property, and that there is no evidence of overlaps,
encroachments or boundary line disputes except as shown on such
plat of survey. (See Comment 3 following)

Very truly,

(To be signed by the
licensed surveyor)

Registered Surveyor No. _____

(Impress seal here)

October 2, 1980

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Comment 1 - It is apparently required that the certification be made
by an Indiana Registered Land Surveyor. (See later comment under
"Legal Description" relative to Civil Engineers)

Comment 2 - Since the words of certification are not qualified by the
phrase "to the best of my knowledge, etc.", an underwriter
for errors and omission insurance might not honor a claim against the
surveyor using this certificate on the theory that the certificate
constituted a guarantee by the surveyor. Speakers representing these
underwriters at some of our recent annual meetings have indicated
that this might be their position.

Comment 3 - The wording relative to "overlaps, encroachments or
boundary line disputes" would require absolute accuracy of location
for the inspection. This would require an Indiana Land Title Survey
(or better), rather than the limited purpose and limited accuracy
"Mortgage Inspection" that is currently the industry norm and readily
accepted by lenders and title insurance underwriters for transactions
involving single family residential properties. Because of the
limited purpose and limited accuracy, the American Congress of
Surveying and Mapping has adopted a resolution urging that these
documents be called "Inspections" rather than "Surveys", in the hope
that they will not then be used by the owner for purposes other than
that for which they were done.

Summary - The problem pointed out in Comment 2 can be solved by
revising the wording to include the phrase "to the best of my
knowledge". This has been done by some surveyors and to the best of
my knowledge has not yet been challenged.

There is no simple solution to the problem pointed out in Comment 3.
The only cases where it would be safe to use this wording as given
would be where no evidence of use or occupation was observed on or
near the exterior title lines or any interior easements that fell
within the limits of: (1) The accuracy of measurement of the field
work performed; (2) The amount of uncertainty introduced by the
nearby occupation lines or monuments found (or not found); (3) The
amount of uncertainty introduced by an ambiguous or faulty
description provided for inspection. Because of these factors, all
properties that have fences, walls, hedges, etc., on or near these
lines and many other properties, would require that an Indiana Land
Title Survey be done. Because such a survey is so much more
expensive than the mortgage inspections currently being accepted by
most lenders and title insurance underwriters, I would suggest that
surveyors should get written authorization before proceeding with an
Indiana Land Title Survey.

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(C) A description of a parcel bounded on all sides by dedicated
streets or alleys can acceptably refer to the bounding lines of the
streets or alleys along. (See Comment 10 following)

(D) The Participating Lender must check the Mortgage, title
insurance binder or policy, the deed, and the survey to assure that
the legal description contained or referred to in each document is
consistent with that in the others. (See Comment 11 following)

Comment 4 - It appears that only "whole" lot descriptions or traverse
type metes and bounds descriptions are acceptable.

Comment 5 - It is not clear whether a physical monument is to be set
or a record monument would be suitable. If the requirement is for a
physical monument, why would it not be desirable to set monuments on
all the corners of the tract?

Comment 6 - Why should the use of interior angles be dependent on the
beginning point being "located on a dedicated public street line or
other properly fixed mark". The logic is tortuous.
Interior angles offer no advantage over exterior angles or
deflection angles.

Comment 7 - Civil Engineers have not been permitted to do surveys in
Indiana for almost 20 years!!! This item is not consistent with the
form certification that requires that it be signed by an Indiana
Registered Land Surveyor.

Comment 8 - "Prudent private institutional investors" normally rely
on a financially responsible title insurance underwriter to determine
the adequacy of a land description.

It is foolishness to allow a non-defined curve to be used in a
description that is controlled by a set of "standards". This
deviation from a rigid standard would mean that no mathematical
closure would be possible.

Comment 9 - It is not true that two descriptions are necessary "if
the plot is located on two sides of a public way". It is not only
"customary to describe an easement appurtenant to a fee parcel by
using a separate parcel description", it is mandatory.

Comment 10 - Although this is not a particularly good way to
describe a parcel, it is acceptable. It also appears to be
inconsistent with the previous "standards".

Comment 11 - This seems to be the only "standard" that is clear and
consistent with current practice in real estate transactions. (Item
11) is clear statement of fact, not a standard.)

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Legal Description

Requirements for "Legal" descriptions used on documents for
transactions involving The Indiana Housing Finance Authority are set
out in their program guide as follows:

Section 2.13. Legal Description. (A) For all Mortgage Loans,
the legal description as set forth in the mortgagee's title insurance
policy and other documents must be metes and bounds or by reference
to a lot and block on a recorded map or plat. A metes and bounds
description should comply with the following standards: (See Comment
4 following)

(1) the beginning point should be established by a monument
located at the beginning point, or by reference to a nearby
monument; (See Comment 5 following)

(2) the sides of the subject property should be described by
giving the distances and bearings of each (in lieu of bearings,
it is equally acceptable to use the interior angle method if the
beginning point is located on a dedicated public street line or
other properly fixed mark); (See Comment 6 following)

(3) the distances, bearings, and angles should be taken from
a survey, or recently recertified survey, in either case dated
within thirty days prior to the Closing Date, by a licensed
civil engineer or registered surveyor; (See Comment 7 following)

(4) curved courses should be described by data including:
(a) length of arc; (b) radius of circle for the arc; and (c)
chord distance and bearing, except that, if deemed adequate
locally by prudent private institutional investors, when a
curved course is part of a dedicated public street or road line,
that course may be described merely by indicating the distance
and direction which that course takes along the street line
from the end of the previous course; and (See Comment 8
following)

(5) the legal description should be a single perimeter
description of the entire plot and division into parcels should
be avoided unless a special purpose of the specific Mortgage
Loan is served (a division would be necessary, however, if the
plot is located on two sides of a public way; it is also
customary in many areas to describe an easement appurtenant to a
fee parcel by using a separate parcel description). (See
Comment 9 following)

(B) A description composed of lots and blocks which includes
reference to a recorded map or plat on which the lots and blocks are
delineated is usually deemed adequate.

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SUMMARY - This attempt to establish "standards" for land descriptions
is very confused. It also runs counter to long standing, well
settled practices now used in real estate transactions. It is very
unusual for anyone to force an owner to get an expensive survey
simply because they don't like the type of description he now has,
such as: 1. A proportional part of a government section, for
instance, "The North Half of the Northeast Quarter of Section 14
---"; 2. "The South 60 feet of Lot 12 in --- Addition". It is
not clear that either of these descriptions would be acceptable.

Item (D) seems to be the only thing resembling a valid requirement
that is consistent with current practices. The balance of the
"standards" are now left to people who are qualified to determine the
acceptability of the land description.

Surveyors who might attempt to comply with these "standards", will
probably find themselves in trouble with all the parties involved in
the transaction and with a substantial survey bill that the owner
won't pay.

RECOMMENDATIONS - The members of our society, Title Underwriters of
Indiana, Inc., The Indiana Bankers Association, The Savings and Loan
League of Indiana, Indianapolis Mortgage Bankers Association, Inc.,
Indiana Mortgage Bankers, Inc., and the Authority should be advised
of the problems pointed out in this report.

It is my opinion that the new proposed "Mortgage Inspection Report"
(The final (?) draft of which is enclosed) will satisfy any real
needs of the Authority in these mortgage transactions. Many title
people and surveyors have provided assistance in the design of this
report and the minimum requirements for the report in an attempt to
meet the real needs of the various parties involved in a mortgage
transaction. The problems are such that although the inspection
requires the expertise of a surveyor, the accuracy of location can be
limited to that required to certify to the major features under
consideration. This lower cost approach will suffice in most
mortgage transactions without the necessarily greater expense for the
higher degree of accuracy required for an Indiana Land Title Survey.

It is also recommended that a copy of said final draft be forwarded
to the Authority together with a request for a meeting to discuss the
possible substitution of that report for their certificate and the
abandonment of their "Legal Description Standards". Another way to
approach the problem is to convince the Authority to rely entirely on
the title policy for the transaction as other lenders do. The result
is the same.

INDIANA MORTGAGE INSPECTION REPORT

UNDER NO CIRCUMSTANCES SHOULD ANY DATA HEREIN BE USED FOR CONSTRUCTION OR ESTABLISHING BOUNDARY OR FENCE LINES.

OWNER OR BUYER:
PROPERTY ADDRESS:
PROPERTY DESCRIPTION

DESIGNATED PARTIES

MORTGAGEE	REFERENCE NO.
OR ASSIGNEES	
TITLE CO.	REFERENCE NO.

I, the undersigned, an Indiana Registered Land Surveyor, hereby certify that on the date shown, I supervised the inspection of the real estate described herein at the Address indicated. THIS INSPECTION REPORT WAS PREPARED FOR USE BY THE DESIGNATED PARTIES ONLY AND FOR NO ONE ELSE. THE ACCURACY OF THE LOCATION DATA SHOWN IS LIMITED TO THAT REQUIRED BY THE "INDIANA MORTGAGE INSPECTION REPORT" MINIMUM REQUIREMENTS UNLESS OTHERWISE SPECIFIED AND EXPLAINED ON THIS DOCUMENT. IF A MORE ACCURATE OR DETAILED LAND SURVEY IS DESIRED OR IF CORNER MONUMENTS ARE REQUIRED, AN INDIANA LAND TITLE SURVEY SHOULD BE ORDERED.

I further certify that to the best of my knowledge that this Inspection Report conforms with the Indiana Mortgage Inspection Report Minimum Requirements as adopted by the Indiana Society of Professional Land Surveyors on (Date) and approved by the Title Underwriters of Indiana, Inc. on (Date).

CERTIFICATION DATE

SURVEYORS SIGNATURE _____

SURVEYORS JOB NO.

SEAL

INDIANA MORTGAGE INSPECTION REPORT

MINIMUM REQUIREMENTS

AS OF _____ (DATE)

Indiana Mortgage Inspection Reports are to be executed by an Indiana Registered Land Surveyor. They are for use on one to four family residential tracts, not exceeding six acres in size. The instructions for this inspection are as follows:

The accuracy of location for this inspection shall be plus or minus one foot on tracts in platted subdivisions and plus or minus two feet on other tracts, unless otherwise specified and explained on the drawing.

The inspection shall show the record description, if any, and conform with it.

The drawing shall show the following:

1. Location, dimensions and description of all buildings or other permanent structures; BUT EXCLUDING FENCES, HEDGES, OR SIMILAR ITEMS. Show their location by the shortest dimension to exterior boundaries.
2. The extent of encroachment on to the property or the abutting property of buildings or other permanent structures, including driveways (with driveway width shown), BUT EXCLUDING FENCES, HEDGES, OR SIMILAR ITEMS. Do not label driveways as "Common" or "Joint".
3. Any visible physical evidence of use which lies outside the platted easements or other recorded easements created by documents furnished by the client.
4. Lakes, open ditches, streams or rivers, BUT EXCLUDING TILE DRAINS, on or abutting on the premises being inspected. Show locations by dimension only when the buildings or permanent structures are 75 feet or less from the top of the bank of ditches, streams or rivers which are possible legal drains.
5. Roads, streets, or alleys on or abutting the boundaries of the inspected property, with any known width, right-of-way lines, name, and location clearly indicated.
6. Platted easements and setback lines and any other record easements or setback lines CREATED BY DOCUMENTS FURNISHED BY THE CLIENT, BUT EXCLUDING THOSE CREATED BY ZONING ORDINANCE. Show the recording data for such items not created by plat.
7. The drawing scale; a north arrow; date of certification; surveyors signature, address, seal, job number, and company name; names of: owner or buyers; mortgagee; title company as required and any associated reference numbers; and, property address.
8. Certification or recertification date within 30 days of submission.
9. Any exception to these requirements.
10. The minimum acceptable surveyor's Certificate is shown on page one. The content and format shall be as shown on page one, but the type size and spacing may be altered to suit so long as the finished form is neat and clearly legible. The sheet size for the reports shall be no less than 8 1/2 inches by 11 inches and no greater than 8 1/2 inches by 14 inches. The surveyors name, address and phone number may be shown at the top or bottom margin if desired.

LONG-TIME SURVEYING TEACHER RETIRES

EDITOR'S NOTE: The following are the remarks made by Professor Kenneth Curtis at the retirement dinner held for Professor Lloyd Kemmer on April 2, 1980 in the Faculty Lounges of the Purdue Memorial Union.

It is my pleasant assignment to review some of the varied experiences which our honored retiree, Lloyd Homer Kemmer, claims as his very own. Some are probably not aware of his background and I will attempt to cover the highlights.

World War I essentially began on June 28, 1914, when the Archduke Franz Ferdinand of Austria was shot by a young Slav nationalist. Just six weeks before this event happened, a boy was born on a farm in Grant County, Indiana, near Marion. Lloyd Kemmer grew up there with his younger brother Paul and sister Martha and attended Sweetser High School for 3 years before the family moved to near New Haven, just east of Fort Wayne, where he graduated from New Haven High School in 1931. It was during his senior year there that he met Doris Rothgeb who six years later became his wife. Lloyd's father worked for the State Highway Dept. and later the Moellering Construction Co. of Fort Wayne and Lloyd's interest in Civil Engineering came through summer jobs with the State Highway and the construction company. At an early age, his dad took him ice fishing and to athletic contests, particularly baseball games. His dedication to these interests and other "trivia" has continued to this day.

Lloyd graduated from Purdue in 1935 with BS CE. During his undergraduate days, he was a member of Acacia fraternity and served as its president. He was also a member of Chi Epsilon, CE honorary. His brother, Paul, and sister, Martha, graduated from PU in Forestry and Home Ec. respectively. After he graduated, Lloyd became a half-time teaching assistant as he worked on an MSE degree (with a major in Transportation) which he received in 1938. In the meantime, Doris had been working as a bank teller back home in New Haven. They were married in 1937. After completing the MS degree, he became a full time instructor in CE at Purdue. Thus, starting in 1935, he is, this Spring, completing 45 years of service to Purdue University and his profession. Most of his teaching assignments have been with surveying and mapping courses. He has witnessed the declining emphasis in surveying education through the years, which at one time, was required of all freshmen engineers and has declined until today when even the CE is only required to take one two-credit course. However, considering the heavy enrollments during the early years, the estimate is that probably over 10,000 students have learned some surveying with his assistance. Lloyd's teaching experience has included 19 summers with Purdue's Summer Surveying Camp. This type of instruction was discontinued after the 1960 summer camp. Many interesting teaching experiences took place at Ross Summer Surveying Camp (now the 4-H Club Leadership Camp) about 10 miles SW of the campus overlooking the Wabash River. During three summers in the early fifties, Lloyd also taught at the Summer Surveying Camp of Stevens Institute of Technology in New Jersey.

We will be forever grateful to Lloyd for his interest and dedication to the teaching of surveying at Purdue!

In recent years his teaching assignments have only been part-time because of over-riding involvement in counseling and other administrative duties in Civil Engineering. In the mid and later fifties, as the result of several retirements including George Springer, B.B. Lewis, and Ben Petty, Lloyd became the departmental Schedule Deputy, the Registration Deputy, the Building Deputy, the Space Deputy, Secretary of the CE Faculty, Undergraduate Scholarship Representative, Representative to the University Placement Service, Keeper of Personnel Records and Employment Opportunities, Coordinator of undergraduate registration counseling, counseling of transfer students, CODO students, re-entries and readmissions, and certification of degree candidates. You name it! Lloyd Kemmer is involved somehow! And we're probably missed some of his duties! Lloyd was the first awardee of the Ross Judson Buck Outstanding Civil Engineering Counselor Award in 1976. All of us in CE are indebted to him for his valuable contributions in these very important administrative functions.



Lloyd H. Kemmer, retiring after 45 years teaching at Purdue University.

He is a registered professional engineer and a registered professional land surveyor in Indiana. His professional societies include NSPE, ISPE, ACSM, ISPLS, ASCE and ASEE. He had to be a member of the latter two because Prof. Ralph B. Wiley insisted on this, essentially as an unwritten part of the teaching contract.

Two of Lloyd's most memorable summers were in 1941 and 1951. In 1941, instead of teaching at camp, he was, with several other including Professors John Matthews and Marion Todd, employed by C. H. Hard Co. in the design and layout of Camp Atterbury south of Indianapolis. This involved road and bridge investigations and design and required lengthy boundary surveys.

In 1951, instead of teaching at camp, he was working for Metcalf and Eddy at the new Air Force Base under construction at Thule, in the very northern part of Greenland.

While Lloyd was a student at Purdue, he was involved in the ROTC, (field artillery). This accounts for his military leave during World War II (1942-46). War was declared on Dec. 7, 1941. By Feb. 13, 1942 (just 2 mos. later) Lloyd and Ed Thoma, who was also on Purdue's CE staff, departed for Ft. Bragg, N.C. and left Virginia Thoma and Doris behind on S. Grant St. and Sheetz St., respectively, to share a car and kids. (Judy Kemmer and David Thoma).

In a few weeks, Lloyd was reassigned to Ft. Benning, GA and Ed to Ft. Sill, OK. Lloyd arrived at Ft. Benning just as General Patton was making a hell-raising, farewell speech to the Second Armored Division. Lloyd was assigned to the 92nd F.A. Bn. in the Second Armored. He trained and maneuvered across the South for several months before leaving for Ft. Dix, NJ. In fact, he was on maneuvers when his second daughter, Janet, was born and he wasn't told about it for 3 days.

The Division arrived in Africa and encamped Christmas Eve 1942 near the city of Casablanca. They followed on the heels of the First Armored Division across North Africa to Sicily. After leaving the Mediterranean and looping out into the Atlantic to divert the enemy, they landed in Southampton, England near where they remained on the Salisbury Plains. (Where Stonehenge is located.) His unit landed June 12, 1944 on the beach 6 days after D-Day and continued through France to Berlin, coming home about Sept. 1945.

He has attended several 2nd Armored reunions. We're not sure he served directly under Gen. George Patton, but somewhere he picked up some of his attributes.

Lloyd and Doris have three fine daughters who all graduated from Purdue. The Kemmers are long-time members of the First United Methodist Church in W.L.

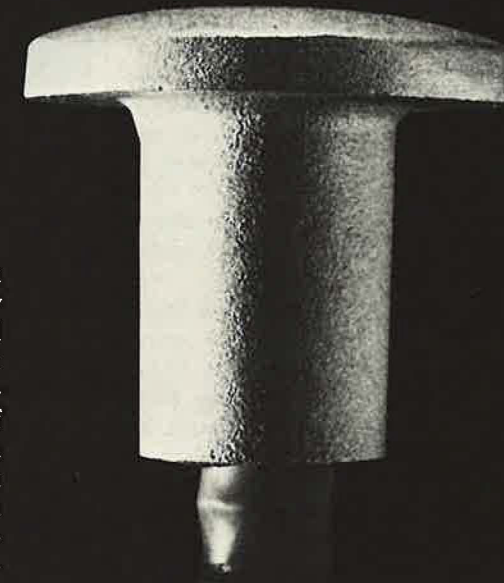
Lloyd has been a member of the Lafayette Exchange Club for about 12 years. He is a past president and currently serving as Secretary.

He is a member of the Lafayette Geographic Society, currently vice-president, and will be next year's president.

And now we know a little more about this fellow that we are honoring tonight. God Bless You, Lloyd and Doris and may the years ahead be good to both of you!

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PHOTO HIGHLIGHTS OF STORM DRAINAGE DESIGN WORKSHOP

October 16-17, 1980 McCormick's Creek State Park
Spencer, Indiana



Canyon Inn at McCormick's Creek State Park was an excellent site to hold the workshop.



Even though the lights were out for about an hour Friday morning, Paul Douglass, Associate Professor of Construction at IUPUI, was able to carry on near a window.



Excellent meals & lodging were included in the cost of the workshop.



The two instructors, Prof. Paul L. Douglass, left, of IUPUI, Indianapolis, and Mr. Zafar S. Ansari, of Ansari and Associates, Indianapolis, both registered professional engineers, conducted the two-day workshop on Storm Drainage Design.



Forty-eight participants attended the short course and profited from the experience.



The ISPLS Education Committee, primarily members Lowell Hamilton and Dallas Montgomery, were responsible for the fine arrangements. Thanks fellows!

Drainage and the Subdivision of Land

by Kurt W. Bauer

Executive Director,
Southeastern Wisconsin
Regional Planning Commission

The basic concepts underlying urban storm water drainage are undergoing revision. The old concepts sought to eliminate excess surface water during and after a rainfall as quickly as possible through an efficient drainage system, a system usually consisting of enclosed conduits, although sometimes consisting of improved open channels. Although convenient for individual sites undergoing conversion from rural to urban use, application of this concept has been the major cause of increased flooding downstream. This downstream flooding is, moreover, often accompanied by other serious problems, such as erosion and sedimentation, water pollution, and diminished water supplies. Although the problems created by application of the traditional approach to urban storm water drainage were more or less acceptable when urban development was compact and confined to relatively small areas, these problems have become increasingly serious, aggravating, and unacceptable as the pattern of urban development has changed and urban land uses have diffused over ever larger areas of the earth's surface.

The new concepts emphasize retaining or detaining rainfall on site even at some localized inconvenience, thus reducing both the total and the peak rate of runoff and protecting against increased downstream flooding. The new concepts look to controlling the quality, as well as the quantity, of runoff and seek to manage storm water as a potentially valuable resource rather than as a nuisance to be disposed of as quickly as possible.

Basic Principles of Storm Water Management

Some of the basic principles involved in the new concepts of storm water management include:

1. The amount and rate of water leaving a site should not be significantly different after than before development.
2. Storm water runoff systems should fulfill two basic objectives: (a) they should prevent significant property damage and loss of life from any reasonably foreseeable rainfall event, and (b) they should provide an acceptable degree of convenient access to property during and following frequent rainfall events. The total storm water management system of an area should, accordingly, consist of a minor and a major element, the former operating frequently, the latter only infrequently. Both elements should incorporate the use of storage and recognize temporary ponding within the system as a potential design solution rather than a problem.
3. Storm water should be treated as a component of the

total water resource of an area, and consideration should be given to using storm water to replenish those resources.

4. The control of water quality as well as quantity should be incorporated into the design of the drainage systems.

5. Since every parcel of land is a part of a larger watershed, the storm water runoff management solution for each development should be set within the context and be supportive of a comprehensive plan for the entire watershed. In this way, the storm water runoff management should seek to accommodate water from upstream sources while mitigating the impacts of outflow on downstream areas.

The application of these principles to their fullest extent requires not only changes in storm water system design methodologies but also changes in traditional land subdivision design practices. The changes in the latter must recognize that the storm water management system required for an area is basically dictated by the land subdivision design for the area; and, therefore, storm water drainage needs should be carefully considered in land subdivision design. The purpose of this paper is not to discuss the principles involved in the new concepts of storm water management but to discuss land subdivision design practices that facilitate the application of those basic principles.

Land Subdivision Design Considerations

Like any design, however, a land subdivision design represents a compromise among competing and even conflicting objectives; and drainage considerations should not dominate the design any more than should any of the other considerations—a balanced approach is required. Land subdivision is far more than a means of marketing land; it is the first step in the process of building a community. Much of the form and character of a community are determined by the quality of its land subdivisions and the standards which are built into them. Once land has been divided into blocks and lots, streets established, and utilities installed, the development pattern is permanently established and unlikely to be changed. For generations the entire community, as well as the individuals who occupy such subdivisions, will be influenced by the quality and character of their design.

A good subdivision design should create building sites which meet the requirements of modern family life. The sites should not only be presently marketable, but should remain competitive with future developments, thereby presenting a stable and liquid investment, and they should

be so arranged in relationship to the rest of the urban community as to provide the best possible urban environment. Such design can be achieved through the effective application of three basic design principles. These principles are easy to enumerate but very difficult to apply.

The **first principle** of good subdivision design is that the design must provide for certain external factors of communitywide concern which affect the proposed subdivision. Provision should be made in the design for the proper extension of major thoroughfares, for the dedication of needed school and park sites, for the extension of utility trunk lines, and for the preservation of major drainage channels and of related floodlands. The proper consideration of these factors in the subdivision design requires the existence of both comprehensive community and comprehensive watershed plans; the lack of such plans can be a severe handicap to good subdivision design. Consideration should also be given in the design to the relation of the subdivision to other external factors, such as local, community, and regional shopping centers; place of employment; educational and recreational facilities; and public transportation.

The **second principle** of good subdivision design is that the design must be properly related to proposed and existing land uses. The layout of a subdivision is inseparable to the use to which the land is to be put. Moreover, adjacent land uses must be considered in the design. Some, such as parks, parkways, certain types of institutional uses, and bodies of surface water, may be definite assets to be utilized in the design to create value. Others, such as cemeteries, railroads, power transmission lines, poorly subdivided and unsightly strip commercial developments, may be detriments and require special design techniques. Areas of natural beauty, such as fine stands of trees and high points offering exceptional vistas, should be conserved by the design. Low areas subject to flooding or areas of bedrock outcrop should not be utilized for residential use.

The **third principle** of good subdivision design is proper attention to internal detailing. This includes attention to the proper layout of streets, blocks, and lots and adjustment of the design to the topography and soil capabilities of the site. It is this third principle that dictates, among other considerations, careful attention to drainage in subdivision design.

Street Layout

The street system is the singularly most important consideration in subdivision design, as it is indeed the singularly most important element of the overall community plan. The street pattern forms the framework for the community's development and, to a considerable extent, determines the efficiency of the other functional parts of the community, including the efficiency of the drainage system. In the individual subdivision, the street pattern determines the shape, size, and orientation of the building sites and, to a considerable extent, the character and beauty of residential neighborhoods.

Any street system performs at least four important functions: it provides for the free movement of traffic throughout the community; it provides for access to the individual building sites; it provides the location for community utilities; and it forms an integral part of the community's

drainage system. Sometimes easements are required to supplement the street system for drainage purposes. It should be noted that the first two functions are mutually incompatible and inherently conflicting. From a traffic standpoint, therefore, the street pattern should be functional, providing for at least three principal types of streets: arterials, collectors, and land access streets.

The arterial streets interconnect the various areas of the community and form its major circulatory system. Their purpose is to move traffic quickly and safely. They should be of generous width as specified in the community plan—generally from 120 to 130 feet—and be of proper grade and alignment, adequate continuity, and substantially paved. Direct access to these streets from adjacent property should not be permitted, and intersections to other streets should be held to a minimum.

Collector streets carry traffic from the land access streets to and from the arterial streets. They should be designed to carry moderate amounts of traffic, may in some instances carry bus lines, and access may or may not be limited. They should range in width from 60 to 100 feet.

Land access streets, as the name implies, are intended to provide access to abutting property. They should be designed to discourage use by heavy volumes of through traffic and should be discontinuous and lightly paved. They may range in width from 50 to 66 feet and, today, are often designed as loop or cul-de-sac streets.

With respect to drainage, the depth of flow in gutters and the allowable spread of water across the pavement should be consistent with the functional classification of the street. Arterial streets should remain as free of water as is practicable. Deeper flows and wider spreads can be tolerated on collector and land access streets, although velocities should generally not exceed 10 feet per second. Appreciable amounts of storm water should not be permitted to flow across intersections under normal rainfall conditions; however, collector and land access streets should serve as emergency overflow drainageways to carry runoff in times of excessive rainfall. Thus, during a major rainfall event, the minor, and normally piped, drainage system would be surcharged; and the excess flow carried on the streets and adjacent lawn areas to the reserved major drainage channels.

The subdivision layout should carefully adjust the collector and land access streets to the topography in order to minimize grading and drainage problems and in order to permit the economical provision of gravity flow sanitary sewer facilities. Generally, collector streets should follow valley lines. Land access streets should cross contour lines at right angles. Side hill street locations should be avoided.

Particularly careful attention should be given in the street layout to storm water drainage. The natural streams and watercourses should be the preferred alignments for the major components of the drainage system. The subdivision design should include channels and detention basins within dedicated parks and parkways or other public grounds, preferably along the rear lines of lots. Each open channel to be preserved should have established for it a right-of-way width sufficient to accommodate the major runoff events hydraulically, as well as to provide space along the channel for proper landscaping, for access, and for prop-

er operation of construction and maintenance equipment. Proper design may require some relocation and realignment of natural watercourses. The open channels should be made aesthetic focal points of the design in order to discourage their abuse.

Particular care must be taken when natural drainage channels are proposed to be filled in, built over, or otherwise enclosed as parts of the minor drainage system so that the changes will not obstruct flow through the major system.

The street and lot patterns and grades should be designed around the natural drainage routings. Street layouts and grades should be designed so that the collector and land access streets can, during times of severe runoff events, serve as open runoff channels supplementary to the minor piped storm sewerage system without flooding adjoining building sites. This means that mid-block sags in street grades must be avoided and street grades established so as generally to parallel storm sewer gradients.

Multipurpose Open Space

One of the important considerations in proper storm water runoff management is storage. Provision of storage can reduce peak runoff rates, aid in the replenishment of the ground water supply, provide an attenuation mechanism if storm water is to be treated, and lessen the probability of downstream flooding, stream erosion, and sedimentation. Design of permanent and temporary ponding and storage should be an integral part of the subdivision design process and should consider opportunities within open space and landscaped areas for the creation of such facilities.

Much natural storage is temporary, of small volume, and can be lost through development. This volume can be replaced by using swales, by revegetation, and by utilizing special outlets that meter the outflow from planned ponding areas. Where detention storage is provided, overflow routing must have sufficient hydraulic capacity to assure freedom from significant downstream damage in the event of rare runoff peaks. On-site storage with slow release to surface or ground water can reduce cost of storm water drainage facilities.

Permanent storage in ponds and reservoirs may have multiple benefits, including enhancement of property values, possibilities for boating, ice skating, fishing and swimming, and habitat for migratory wildlife. Temporary storage in dry ponds can also be used effectively for dual purposes. Golf courses, playfields, and parks are examples of compatible uses. Where streets cross drainageways, there is an opportunity to utilize the roadway embankment as an effective dam to create impoundments. Potential overflow areas should be developed as open space so that together the "blue green" development enhances the entire neighborhood.

The wet and dry storage areas can be used to enhance

the value of the lots to be created by the subdivision. This can be done by such techniques as backing lots against the storage areas or, in some cases, opening courts and cul-de-sacs onto streets paralleling the storage areas.

Lot Layout

The primary purpose of land subdivision is the production of building sites, and ideally every lot should provide a good site. In every subdivision, however, there are areas wherein the lots can be comparatively more valuable than others due to the proximity of such features as existing tree growth, a park or parkway, a natural watercourse, or a storm water detention or retention area. Considerable skill is required to produce comparable value in the less attractive areas of the same subdivision.

In general, all lots within a given subdivision should have approximately the same area. Minimum lot areas and frontages are specified by local zoning. Lots should generally be more or less rectangular in shape, and side lot lines should be perpendicular and radial to the street right-of-way line. Corner lots should be somewhat wider than interior lots in order to permit adequate building setback lines to be obeyed on two sides.

With respect to drainage, lots should generally drain either entirely toward the street or both toward the street and the back lot line. In the latter case, lateral drainage along the rear lot lines will be required, necessitating careful attention to grading layout, particularly in flat areas, and the provision of drainage, as well as utility, easements along the rear lot lines. Topography may occasionally require side lot line drainage easements.

Summary

In summary, traditional approaches to urban storm water management are undergoing questioning and change. Past emphasis on the elimination of excess surface water after a rainfall as quickly as possible through an efficient drainage system, thus maximizing convenience at the individual site, is being replaced by concepts that seek to detain and store rainfall where it falls even at the expense of short-term localized inconvenience. Such concepts, moreover, emphasize the need to provide for two separate, although coordinated, urban drainage systems—a minor system to accommodate relatively frequent rainfall occurrences while maintaining convenience and a major system to accommodate the unusual rainfall events while protecting life and property. Application of these developing concepts of urban storm water drainage require consideration in land subdivision design. Properly applied, the developing concepts of urban storm water drainage are compatible with good land subdivision design; and the two design procedures can reinforce each other.

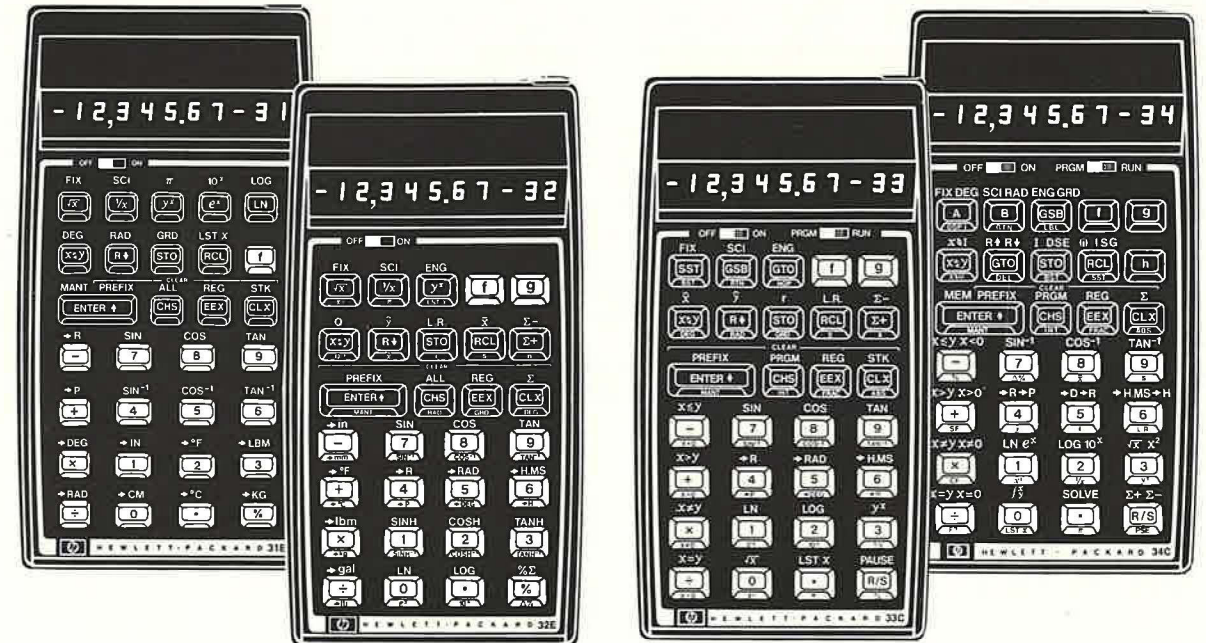
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A.C.S.M. DELEGATE REPORT

FROM: James E. Dankert

DATE: October 21, 1980

SUBJECT: Report as ISPLS Delegate to ACSM - Fall Meeting of ACSM at Niagara Falls, New York - October 7-10, 1980

As delegate, I attended many meetings of the Land Survey Division (LSD) including the nomination committee, membership, and Board Meetings. I also attended the meeting of the Great Lakes Council of ACSM Affiliated Societies. The following is a listing of subjects and decisions reached.

General Comments - There was much evidence of development of sophisticated equipment such as for Inertial Surveying, a complete "digitizer - computer - plotter" system, new EDM's, topographic mapping equipment and much more. Many comments were heard at the meetings that all of the states have ethic problems, improper practice problems, standards problems all of which were familiar bleeps. There were too many interesting subjects being discussed for one to be able to attend all of the discussions and at the same time participate in the business meetings. I will have to read the proceedings to fill the gaps. The Convention Hall facilities were quite good located close to hotels and the sights of Niagara Falls.

Great Lakes Council - This council is chaired by Harold Charlier of Wisconsin. The Council is made up of representatives from Wisconsin, Minnesota, Iowa, Michigan, Illinois and Indiana. Packets of information from each of the state societies were exchanged. Discussions were held on metrication progress, splintering into regions, and railroad abandonment statute to require monumentation. This council compares notes on Midwest common problems.

LSD Meetings - Due to the change in the realignment of ACSM created by the new Constitution and Bylaws, the LSD will be known as "National Society of Professional Surveyors". A copy of the Bylaws for NSPS is attached to this report.* The Bylaws are to be mailed to the states with approval to be voted at the annual ACSM meeting. NSPS will have an annual budget of \$11,000. The NSPS has 14,000 members growing by 3,000 in 1980. ACSM is arranging a system where CEU's will be issued for ACSM workshops and tabulated for recall. There was discussion on State Plane Coordinate system on the North American Datum of 1983. There may be a need for changing the Indiana Statute. New "As Built Survey Standards" are to be sent to the states to be used as a guideline. A Travel Policy for ACSM officers was discussed. The host society will be asked to furnish housing, meals and tickets. The Affiliates will be assessed a fee based upon percentage of membership participation in ACSM.

*Bylaws are on file at state ISPLS headquarters office.

MEMO

Date: 15 October, 1980

TO: All ISPLS Members and Junior Members

SUBJECT: Activity Interest Form

FROM: C. A. Budnick, President

If the Surveying Profession is going to survive the challenges of the eighties, we must have active, aggressive, leaders who are willing to contribute their time and talents in unselfish amounts for the good of all.

Please indicate your willingness to serve by completing the form below and mail today!

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At camp near Branchville

Purdue surveying students get practical training

By KENNETH CURTIS

Purdue University

BRANCHVILLE — Twenty-one Purdue University senior land surveying students are enrolled in a four-week summer field course that involves the surveying of a 36-acre tract leased to the university in northern Perry County.

The tract is a part of the now-defunct government Job Corps Center which was located on U.S. Forest Service property near Branchville on state highway 37. Purdue has renamed the site, the Purdue University Forestry Center, and 40 senior forestry students are in residence for five weeks taking a different required field course under the direction of John Seifert,

forestry center director. Land surveying students and forestry students share the facilities.

The four-credit course is required of all students enrolled in the relatively new four-year course and comes at the end of the junior year and after six to eight on-campus surveying and mapping courses.

The purpose is to tie portions of all previous courses together with an actual practical problem. It is one of the two "capstone" courses in the curriculum. The other is in subdivision planning and design.

Eight years ago, when the course was inaugurated, the students surveyed a Boy Scout wilderness area in Warren County. The next two summers they surveyed YMCA

camps — Camp Tecumseh in Carroll County and Camp Treece in Tippecanoe County. Then for two years the students surveyed the Tippecanoe Battlefield Historical Park at Rattleground, Ind.

This year's project in Perry County is the fourth year the Branchville site has been utilized and is the only site used since the course was moved away from the environs of Purdue's main campus at West Lafayette.

The tract leased to Purdue University is not a square or rectangle but instead is defined by about 30 corners (bearings and distances) protracted on a map of Forest Service land at Branchville.

In the past three years, several types of surveys made up the project. One if a boundary survey which established the lease lines on the ground. Another abutting lease holder is the headquarters of the Branchville sub-district of the Indiana Highway Commission. Since the tract is on government property, no private land owners were involved as adjoining owners. However, in order to properly tie the leased land to the public land survey system of townships, sections, and fractions thereof, it was necessary to locate the section corners and quartercorners of Section 23, a square mile.

With that survey completed, the students have moved to other sections in the Tipton Lake area mostly owned by the government. With the permission of adjacent property owners and under the supervision of USFS personnel, some boundary lines are being marked to USFS standards.

With the help of local residents, adjoining land owners, Forest Service technicians, and much study, these corner stones are being located and perpetuated for future ties. Residents have been very cooperative. In no area, where the course has been taught before, has there been such an elaborate system of found corners, including the 16 corners which were not set in the original surveys in 1905. Daniel McKim, the Perry County surveyor in 1872 carried out an apparently successful program of replacing the original wooden posts with sandstone monuments properly marked and identified. Several corners were previously found and perpetuated by Forest Service personnel. Bearing trees or witness trees are important keys.

One tool used by the land surveyors has been the inspection of both current and earlier aerial photography of the area. The earliest aerial photography of Perry County was in 1940. Subsequent photography 1953, 1958, and 1974 is available from the Agricultural

Stabilization and Conservation Service or the Forest Service.

In northern Indiana, many of the corners are buried under the roads because of the adopted road patterns. Not so, however, in the rolling topography of Perry County where roads rarely follow section lines. Thus, a higher percentage of seasoned corners are being found undisurbed.

After a visit with the "fictitious client", the U.S. Forest Service, at their headquarters in Bedford, the students visited the Perry County Courthouse in Cannelton in order to check on all possible data that might help them, including adjoining descriptions. Offices visited included the auditor and recorder. Additional valuable data were obtained from Frederick Pick and Harold Lynch of the Tell City ranger's office and Ken Anderson of the supervisor's office in Bedford.

In order to complete the problem, a tie to the Indiana State Plane Coordinate System was desirable. This was accomplished by several miles of traverse lines between three horizontal control stations, one about a mile north of Perry Central High School, another about two miles north of Bandon, both near Highway 37, and one near St. Isidore Church east of Bristow. These triangulation stations were originally set in 1946 by the U.S. Coast and Geodetic Survey as a part of a nationwide network. Older residents of the area may remember when the work was completed because the government survey parties built and used steel towers 77 to 116 feet high for observing angles between stations.

All modern equipment, such as electronic distance measuring (EDM) equipment, optical reading theodolites, walkie-talkies, electronic calculators, rola-beam lasers, etc. are used by each student. The students, working in five-man parties, also have an opportunity to use the conventional tape and transit.

The staff consists of this writer and John McEntyre of Purdue

assisted by Darrell Dean, a professor from West Virginia University, two graduate instructors, Roger Durham and Earl Burkholder, and Bob Parks, an equipment technician. All are from the Purdue School of Civil Engineering, except Dean.

Bench marks for vertical control are available in the area as the result of extensive leveling accomplished by the U.S. Geological Survey in 1955 as the elevation control for the state-wide topographic mapping program. Several such bench marks are available in the area. Also several bench marks set by the state highway department along the new alignment of Hwy 37 are available.

Another concurrent project is the preparation of a topographic contour map of the leased tract. This is being accomplished by checker-board mapping and transitstadia mapping using auto-reduction tachometers and plane tables.

Several surveying instrument company representatives are scheduled to visit camp to demonstrate some of the very latest in equipment. Usually some kind of route survey is projected in an area covered by a topographic map. This summer this may be accomplished by helping the Forest Service stake a proposed new access road from camp to the Tipton Lake Access Road. This survey includes laying out horizontal curves, taking cross-sections, setting slope stakes, etc.

Purdue's professional land surveying curriculum is now nine years old and is administered under the School of Civil Engineering. It is the first program in the United States offering a B.S. in Land Surveying and leads directly toward registration as a professional land surveyor.

Surveying instruction has almost been eliminated from the curriculum in civil engineering, necessitating the creation of a separate program. So far, almost 130 students have received a bachelor of science in land surveying from Purdue.



Taking measures

Measuring angles and distances with a theodolite equipped with an electronic infrared distance measuring unit in Purdue land surveying student Rita Brockman of

St. Meinrad in Spencer County, a 1977 graduate of Heritage Hills High School.

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January 28, 29, 30, 1981
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(ALL TIMES ARE CENTRAL STANDARD TIME - C.S.T.)

WEDNESDAY, JANUARY 28, 1981

12:00 - 5:00 P.M. REGISTRATION
1:00 - 4:00 P.M. TOUR - BETHLEHEM STEEL
BURNS HARBOR FACILITIES
4:30 - 6:00 P.M. COCKTAIL PARTY IN EXHIBIT AREA

THURSDAY, JANUARY 29, 1981

8:00 AM - Noon REGISTRATION
8:00 AM - 5:00 P.M. EXHIBITS OPEN (COFFEE AND DONUTS)
9:15 - 11:45 A.M. CONCURRENT WORKSHOPS
(10:15 - 10:30 COFFEE BREAK IN EXHIBIT AREA)

WORKSHOP A. "SOLAR EASEMENTS"
THE USE OF THE SUN TO MEET A PORTION OF OUR ENERGY NEEDS WILL REQUIRE NEW PROCEDURES TO PROTECT THE INDIVIDUALS RIGHT TO UN-OBSTRUCTED SUN-LIGHT. COULD YOU PROPERLY SERVE YOUR CLIENT WITH A SOLAR EASEMENT DESCRIPTION?

WORKSHOP B. "COMMUNICATIONS"
LEARN SOME TIPS AND NEW IDEAS IN THE NECESSARY ACT OF COMMUNICATION, BOTH WRITTEN AND ORAL.

WORKSHOP C. "BACK TO BASICS"
WE ALL NEED TO BE RE-INTRODUCED TO SOME OF THE BASIC PROCEDURES NECESSARY FOR PROPER SURVEYING.

12:15 - 2:00 P.M. LUNCH - SUNSET REPORT - ACKNOWLEDGEMENT OF EXHIBITORS- PRESIDENTS AWARDS
2:15 - 4:45 P.M. CONCURRENT WORKSHOPS
(3:15 - 3:30 COFFEE BREAK IN EXHIBIT AREA)
EVENING HOLIDAY STAR DINNER AND THEATRE (OPTIONAL)

FRIDAY, JANUARY 30, 1981

8:00 - 2:00 P.M. EXHIBITS OPEN (COFFEE AND DONUTS)
9:00 - 10:15 A.M. CONCURRENT SESSIONS

SESSION A. SURVEYING CONTROL FOR CHICAGO'S DEEP TUNNEL PROJECT

SESSION B. 1983 DATUM ADJUSTMENT - STATE PLANE CO-ORDINATE SYSTEM

10:15 - 10:30 BREAK
10:30 - 11:45 A.M. INDIANA - KENTUCKY BOUNDARY - STATUS REPORT
12:15 - 1:45 P.M. LUNCH - ACSM REPORTS - PRESIDENTS COMMENTS
2:00 - 3:45 P.M. MICHIGAN PLAT LAW - A MODEL FOR INDIANA EFFORTS?
4:00 - 5:00 P.M. ANNUAL BUSINESS MEETING
6:00 - 7:00 P.M. COCKTAIL HOUR
7:00 - BANQUET

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BE SENT IN SEPARATE MAILING

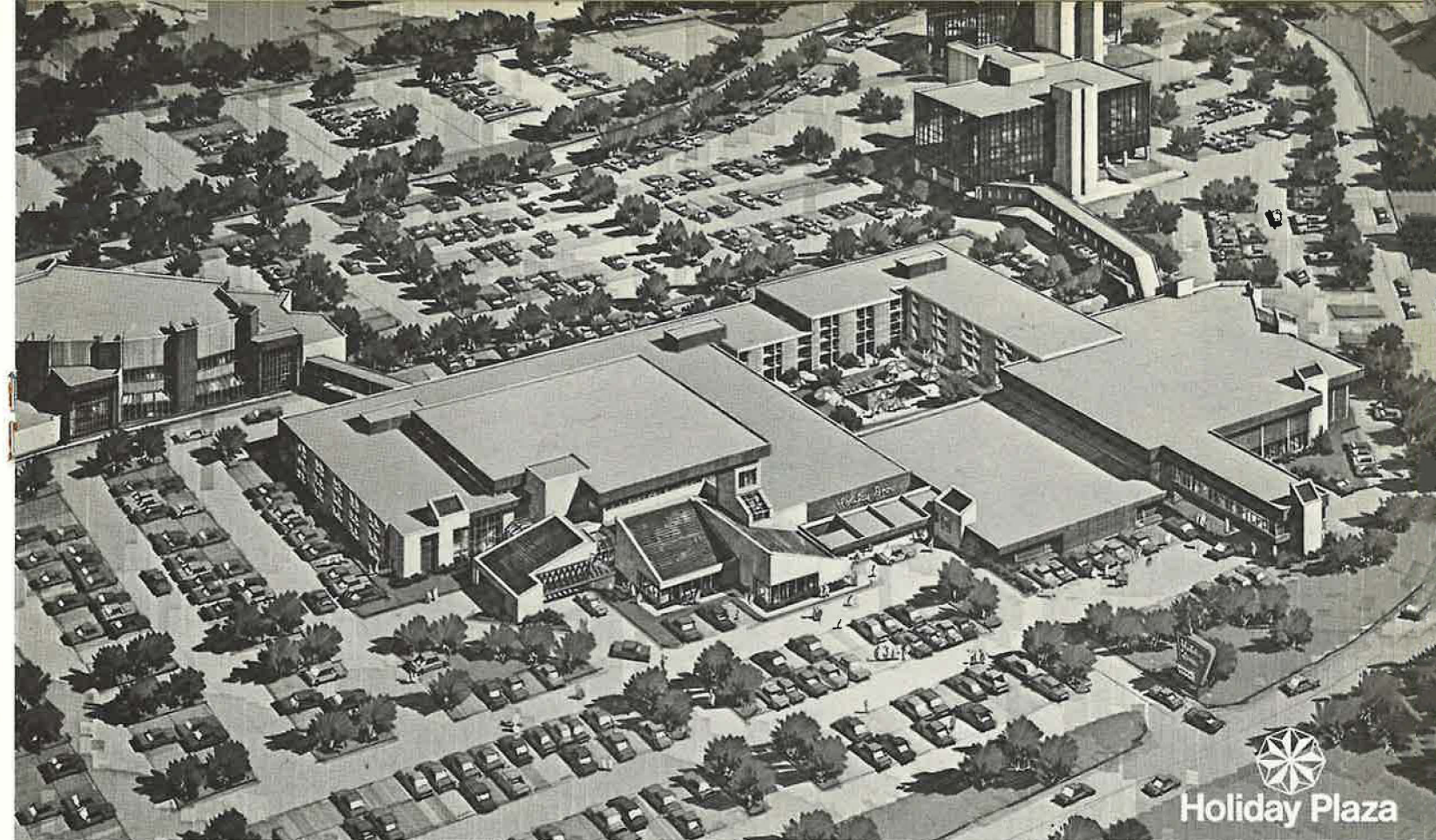


ACSM National President E.R. Brownell of Miami, Florida, will be featured speaker at Friday luncheon.

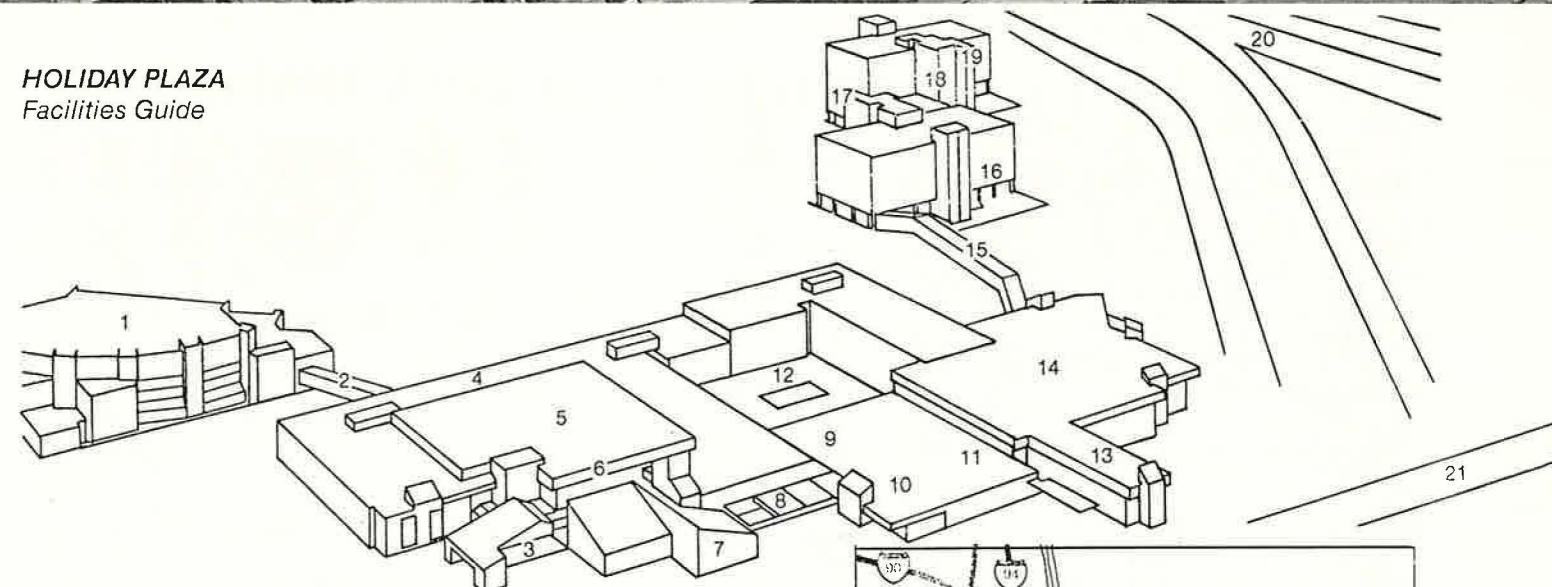


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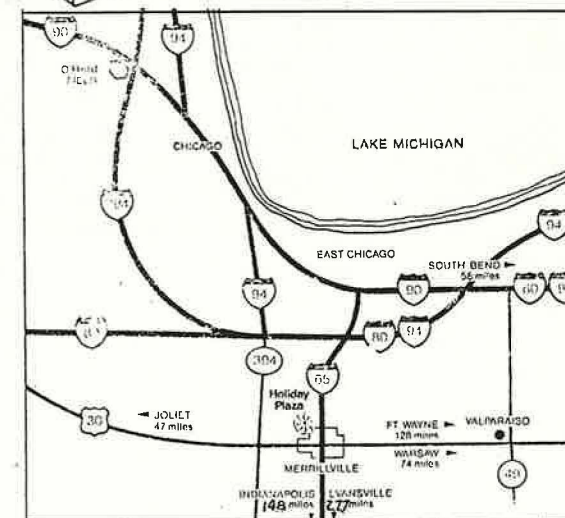
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| 3. Main Lobby/Guest Registration | 14. Admirals Convention Center |
| 4. Bi-Level Suites | 15. Connecting Overhead Bridge |
| 5. Holidome Indoor Fun Center | 16. Shopping Mall |
| 6. Overlook Lounge | 17. Deli and Atrium Restaurant |
| 7. Gift Boutique | 18. ★Twin Towers Offices: Headquarters of Whiteco Industries, Inc. and Whiteco Hospitality Corporation |
| 8. Restaurant Foyer | 19. Admirals Health Club |
| 9. Ginger's Garden Restaurant | 20. Interstate 65 |
| 10. Jolly Ginger's Dining Room | 21. U.S. Highway 30 |
| 11. Jolly Ginger's Lounge/Disco | |





UNION CITY straddles the Ohio-Indiana line because of a survey error by the federal government in 1798 that gave Indiana a piece of Ohio. It took a tavern brawl for officials to discover the mistake.

Living In Twin Towns Can Be Confusing

Ohio, Indiana Burgs Don't Always Agree

UNION CITY, Ohio and Ind. (AP)—This is a tale of two towns with two school systems, two fire departments, two police forces, two area codes—two of almost everything one town needs.

If you're in Union City, Ohio, at 3 o'clock and you need another hour to get things done, just walk across State Line Road. It's 2 o'clock in Union City, Ind. Yes, they even have two ways of telling time in Union City.

You can find Union City, pop. 1,808, in the Rand McNally Road Atlas. On page 78, way out on the western edge of Ohio.

You can find the other Union City, pop. 3,995, on page 34, hanging onto eastern Indiana.

MAYOR JAMES Nelson of Union City, Ohio, said Monday that the two towns are separate and that the people who live on the Ohio side consider themselves Ohioans. But since the post office is in Indiana, all their mail comes addressed "Union City, Ind."

"For instance, if you get a letter addressed to Union City, Ohio, the post office scratches out Ohio and writes in Indiana," he said. "The people in Ohio get kind of mad about that."

The geographical oddity that is Union City can be traced to a survey error by the federal government in 1798 that gave Indiana a piece of Ohio.

But nobody realized there had been a mistake until two years ago when some folks got into a fight outside a tavern near the Indiana state line. The authorities couldn't decide whether the case belonged in Randolph County, Ind., or Darke County, Ohio, so they sent James P. Surber, Darke County engineer, to re-survey the boundary.

He discovered the boundary was off by one-half mile to the east from the bottom of the state to the top—about 100 square miles of error. But he re-established it in the same place anyway.

"I maintain the line is where the line is supposed to be," said Surber. "It's only a problem if someone chooses to make it one."

BUT RONALD L. Tynes, community development director for the Ohio side of the town, says the boundary confusion is "a mess... no ifs, ands or buts about it."

He and other officials on his side of State Line Road want the Ohio-Indiana border shifted to its rightful location because it would yield more tax money. Most of Union City's industries are on the Indiana side of the town.

On the other hand, Bill Fulk, a milk truck driver who is also mayor of Union City, Ind., says

he doesn't want the boundary changed. "It's not a real hot issue now," he said. "But if the line were going to be changed, people would be in an uproar in a hurry."

The federal government and the governments of both states are pretty much staying out of it. The Ohio attorney general's office said in a letter to local officials that a boundary line long recognized "is conclusive, regardless of whether the line was accurately run."

MEANWHILE, RESIDENTS see some good things and some bad things about living in the two towns of Union City.

On the positive side, having two fire departments—there are also two police departments—means the towns have more than their share of fire trucks and firefighters. "It's a joke here that it's hard to keep a cigarette lit in Union City," said one official on the Indiana side.

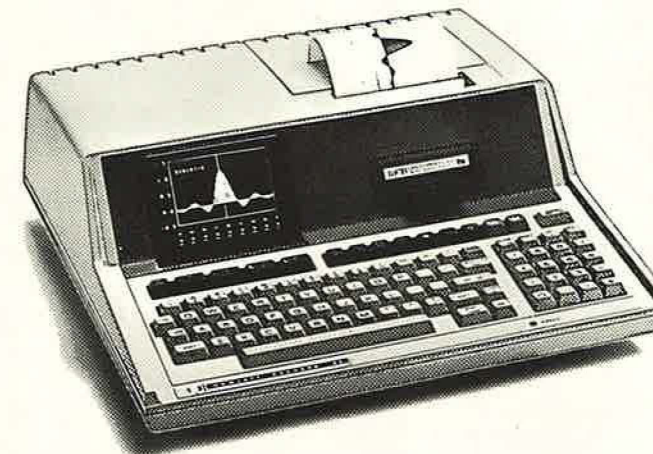
But when summer comes, and Union City, Ohio, goes on daylight savings time and Union City, Ind., doesn't, the grousing starts.

"The factories on the Indiana side run on Ohio time," said Lea Resor, deputy clerk in Union City, Ind. "I don't know why. Maybe you can figure that out."

"But for some people... how should I put this, well, it's their only form of entertainment. Complaining about the two cities, that is," she said. "They don't have much else to do."

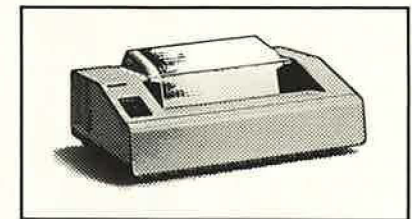
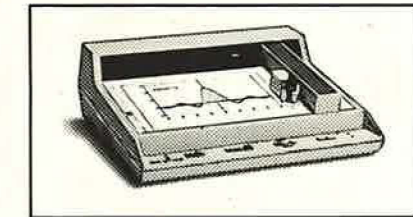
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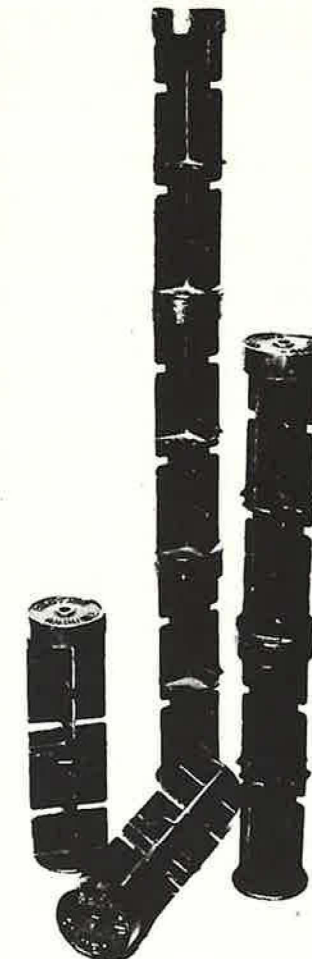
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BUSINESS/FINANCE

Recession Deals Trio Cruel Blow

Business Fights Back, Learns From Adversity

BY JIM SMITH
Business Reporter

Diane Fischer is firmly convinced that she knows now how to cope with recession.

She almost lost her family business learning, though.

Mrs. Fischer, 33, is president of Ellerbusch Instrument Co., 4509 Vine St., St. Bernard.

Founded by her late father, Max Ellerbusch, the firm sells and repairs measuring equipment for surveyors, engineers and builders.

Since it depends on the building trade for its livelihood, Ellerbusch Instrument ebbs and flows with construction trends. When construction booms, Ellerbusch booms. When recession hits, Ellerbusch catches its blow.

THE FIRM was in a dream world a year ago when the latest slowdown struck it from behind with a sucker punch.

"We just hadn't taken enough precautions for a recession," Mrs. Fischer said with characteristic frankness. "Like the school of hard knocks, we had to be hit over the head."

Ellerbusch had been cruising along at full steam in mid-1979.

Annual sales had climbed from \$401,000 in 1976 to \$623,000 in 1978 and seemed to be even stronger in 1979 as the firm took in more than \$100,000 in several different months.

That summer, the company celebrated, throwing a racquetball party for its 18 employees and their guests.

In August, sales reached \$109,000. Then trouble hit.

Suddenly and unexpectedly, sales plummeted to \$50,000 in September.

Business always tapers off in late year as construction slows, so Mrs. Fischer thought at first it was merely the seasonal downswing. But sales kept skidding downhill, out of control.

Over the next five months, Ellerbusch suffered heavy losses. Finally, in February, the family agreed that something drastic—and uncharacteristic—had to be done.

FOR MRS. FISCHER and others in the family, the business had been an intimate part of their lives since childhood. As a little girl her father gave her a tiny watchmaker's lathe and taught her to trim heads off screws.

After taking an education degree, she taught night school for a while, but soon migrated back to the business' comfortable fold.

Her father, Max Ellerbusch, was an intensely warm man who took an interest in nearly everyone he encountered.

When his five-year-old son was killed in 1958 by a teen-age hit-skip driver, Ellerbusch brushed away his initial horror, dropped charges against the youth and gave him a job with his company.

Such compassion often clouded



Enquirer Photo BY MICHAEL E. KEATING
THE RULING triumvirate at Ellerbusch Instrument: from left, Phil Fischer, Mike Ellerbusch and Diane Fischer. That's a computerized electronic distance-measuring device in the middle.

how's business?

Ellerbusch's business judgment.

"Most people are in business to make a profit," Mrs. Fischer said, tears glistening in the corners of her eyes. "For Dad, it was play. He'd give things away. He wasn't a good businessman, but he was a good person."

Preferring the tinkering and repairing to such mundane matters as keeping ledgers, Ellerbusch left finances to others. He bounced through partnerships, corporations and some bankruptcies.

Times often were hard for the Ellerbusches. Mrs. Fischer remembers the winter chill when gas and electricity were shut off at home because the family could no longer pay its bills.

ONCE, ELLERBUSCH got fed up with his partner's financial advice, picked up his tools and walked away from the business, leaving his investment behind him.

He borrowed \$500 and set up shop on his own in St. Bernard.

As Ellerbusch's health began to fail in 1976, members of his family took increasingly larger roles in the business and were running it themselves when he died in January, 1978.

Mrs. Fischer's husband, Phil, 33, is a vice president, as is her brother Mike, 29. She is president, she says, "because I wanted to be," and concedes that the titles are basically meaningless.

"There's honestly not one person who runs the company," she said. "It's almost like running the operation by committee. It has its drawbacks, but there are more advantages."

So it was during an auto trip to a St. Louis trade show last February that the committee convened informally to plan the firm's counterattack to the recession.

"We had delusions," Mrs. Fischer

said. "We thought we were a big company and we behaved like a big company. We hired a lot of people, but we were wrong. We worked on too low a profit margin. Dad always had enough. He wasn't greedy. We were greedy."

THE HARD, cruel truth was that belt-tightening was in order.

Since payroll was the flabbiest, that's where the first tightening came. The family pared the workforce from 18 to seven, catching some highly trained, longtime employees in the trimming process.

"It brought us down to earth," Mrs. Fischer said. "It was painful to me and painful to the employees. I feel very bad. Any change is painful at first. At the time, it was a disaster, but I think it will turn out for the better for everyone."

The end result was that the triumvirate found themselves doing jobs they had performed before taking control of the company.

"Phil's the shipping clerk. Mike's doing repairs. I'm addressing crappy envelopes," Mrs. Fischer said, as her mouth spread into a wry grin. "It was a real slap in the face."

But an even touchier matter was ahead.

Diane and Mike's mother—Ellerbusch's widow, who had worked at the firm for a number of years—was drawing a pension from the company while holding another job. The children grimly concluded that such niceties could no longer be afforded. They bought out her share of the business and cut off the pension.

GRADUALLY, THINGS began to turn around.

The company used its line of credit from a bank to help recoup the losses.

It became more aggressive in sales, hiring a top-notch sales manager despite the financial setbacks to increase personal contacts with potential customers.

For the first time, the firm published a catalog listing all its supplies, a subtle facilitator of phone orders from customers.

It began to concentrate more on outlying areas—Columbus, Dayton, Lexington and the like. The sales force may even be expanded in an effort to stir up more customers.

Mrs. Fischer says the company finally ended its slide in June.

"It's not booming yet, but I'm pleased with the trends. I think it's going to be a hard winter, but we're ready for it."

"Learning to separate personal relationships from business is hard, especially in a family business. In 1979, we were foolish as far as business management. But we learned. We're being very, very careful."

She handed a fistful of phone orders to her husband and glanced out front toward the sales room, where a half-dozen customers were waiting.

That wry smile crept back over her face.

"I think it's going to be a good day," she said.

"How's Business?" profiles people who live and work in Greater Cincinnati.



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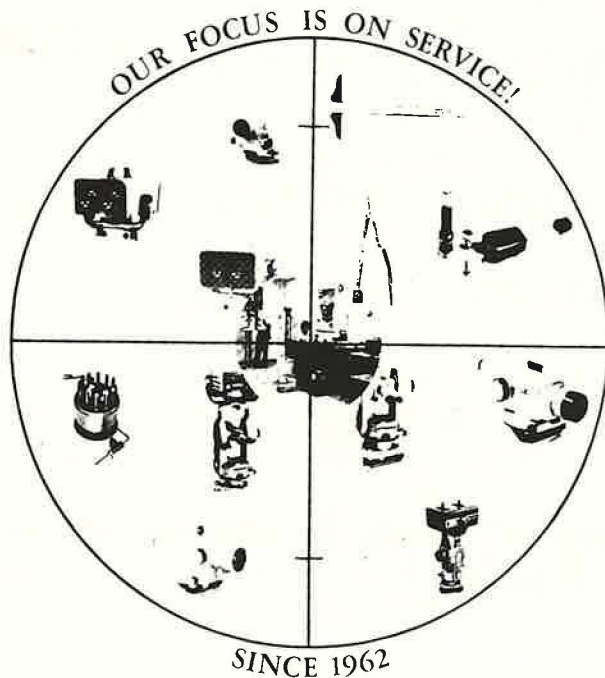
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A letter from the
National Geodetic Survey

Mr. Jose Julio La Frossia
Lake County Surveyor's Office
2293 North Main Street
Crown Point, Indiana 46307

Dear Mr. La Frossia:

From April 1978 through January 1979, the National Geodetic Survey (NGS) canvassed Member Boards of the National Council of Engineering Examiners, all Land Surveyor members of each Board, and the Sections and Affiliates of the American Congress on Surveying and Mapping in an attempt to publicize our "Policy on Publication of Plane Coordinates," and to solicit participation in the reviewing and updating process involving the State Plane Coordinate (SPC) systems in Indiana. The NGS received comments and accordingly is now in a position to make specific recommendations.

The origin of the enabling SPC legislation for Indiana is in Chapter 61 of the Acts of 1951. This Act was derived from a Model Act that appears along with an interpretative summary in our Special Publication No. 235, "The State Coordinate Systems" (1974 revision).

As you recall, two items make corrections to this Act necessary--the 1983 North American Datum and metrication. The NGS "Policy on Publication of Plane Coordinates" discusses these necessary corrections and is again enclosed for your convenience.

Also enclosed is a new Model Act (May 1979) that incorporates the changes mentioned in the policy statement plus other minor corrections (e.g., the name of our organization), but does not incorporate the specific defining constants of the two Indiana zones. These constants should be obtained from your existing Act for the Sections dealing with the 1927 Datum and the same constants with possible modifications (discussed subsequently) for the Sections dealing with the 1983 Datum. Your existing Act and the current Model Act parallel each other, and correlating the two should pose no problem.

This Model Act assumes no Act currently exists and leaves you the choice of submitting this Act as a replacement Act, or use it as a source of the necessary text for an amendment to the existing Act. The Model Act adopts the philosophy that both the SPC system on the 1927 Datum and the SPC system on the 1983 Datum should be legally recognized from the

time of passage of the Act to some date in the future--after which time the 1927 Datum coordinates should not be used. I feel 1990 would permit a reasonable transition period.

Consideration should be given to modifications that might be desirable to the existing Act. Apparently the present transverse Mercator projection constants and the present zone boundaries are adequate since NGS has not received suggestions for change. I have not found any flaws with the originally used boundaries or projection constants. I suggest you validate this assumption locally, especially if there has been any substantial county boundary realignments. The only constant remaining to consider is the metric value assigned to the origin. Currently X = 500,000 feet and Y = 0 are assigned to each of the two Indiana zones, which produce the following table summarizing the ranges of X and Y with these false-origins:

<u>Zone</u>	<u>Range of X (kilofeet)</u>	<u>Range of Y (kilofeet)</u>
East and West	210-790	0-1641

The following items should be considered in the selection of a replacement false-origin:

1. Keeping the number of digits in the coordinate to a minimum. It would be desirable never to exceed six digits (999,999 meters).
2. Creating a new range for X and/or Y in meters on the 1983 Datum that would not overlap the range of X and/or Y in feet on the existing 1927 Datum. If an overlap cannot be avoided, the location of the band of overlap (i.e., where the range of X and/or Y on the 1927 Datum intersects with the range on the 1983 Datum) can be positioned anywhere through selection of appropriate false-origin.
3. Selecting different false-origins (either in X or Y) for each zone so that the coordinate user could determine the zone from the magnitude of the coordinate. This usually requires the "false-easting" to be the smallest in the easternmost zone to avoid X-coordinate values close in magnitude for points near boundaries of adjacent Transverse Mercator zones. It requires the "false-northing" of the northernmost zone to be the smallest for adjacent Lambert Projections for the same reason.
4. Creating different orders of magnitude for X and Y to reduce the possibility of transition errors.

I consider these four objectives to be in the order of importance, although (3) and (4) might be switched. Seldom can both conditions (3) and (4) be simultaneously satisfied.

With Indiana's ranges of X and Y, the following table illustrates five possible false-origins and the resulting ranges of X and Y.

<u>Objectives Satisfied</u>	<u>False-Origin (kilometers)</u>		<u>Zone</u>	<u>Range in Kilometers</u>	
	X	Y		X	Y
1,2,3	100	0	E	11-189	0-500
	100	500	W	11-189	500-999
1,2,3	900	0	E	811-989	0-500
	900	500	W	811-989	500-999
1,2,4	900	0	E	811-989	0-500
	900	0	W	811-989	0-500
1,2,4	100	300	E	11-189	300-800
	100	300	W	11-189	300-800
1,2,3,4	100	250	E	11-189	250-750
	900	250	W	811-989	250-750

In all examples, the Datums are distinguished by the magnitude of the X-coordinate. In the first two examples, the zones are distinguishable by the magnitudes of the Y-coordinate; and in the third and fourth examples, the Y-coordinates are selected so as to be distinguishable from the X-coordinates of that zone. In the last example, all objectives are satisfied by using the magnitude of the X-coordinate to signify not only the Datum but also the zone and simultaneously avoiding the ranges of Y from intersecting the ranges of X so that objective 4 can be satisfied.

In summary, I believe the optimum scheme is accomplished with this fifth example. The user can always distinguish between Datum, between zones, between the X and Y coordinate, while maintaining a six-digit coordinate. These checks can then be added to computer software editing programs. For example, a test on the value of the X-coordinate could be:

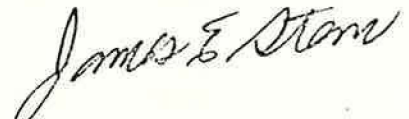
if $X < 200$ km, then you have NAD 83 East Zone,
if $X > 800$ km, then you have NAD 83 West Zone,
and otherwise you would have an NAD 27 coordinate.

At this point, I am presenting these possibilities to you for discussion within the Boards and committees on which you serve as well as any State Societies or any other interested parties. Please be our liaison in the State of Indiana on this matter. With these numbers, the enclosed Model, and your existing Act, you should be able to elect the best way to proceed with your State Legislation.

As a final thought, you might also consider adding new Sections to the Act. For example, a Section could be prepared that would legislate more weight to coordinates when presented as evidence in retracement surveys. Other uses of coordinates could be legislated, such as their use on plats, maps, surveys, etc. Other Society legislative objectives might also be incorporated into this new Act.

Your comments are solicited. If I may be of further assistance, please write or call me at (301) 443-8749.

Sincerely yours,



James E. Stem
Office of the Director
National Geodetic Survey

Enclosures

ISPLS RESPONSE

The ISPLS "1983 Datum Adjustment Committee" (Jose Julio La Frossia, Ray T. Tappan, and Kenneth S. Curtis) have carefully reviewed and studied the above letter from the National Geodetic Survey during the past year and, with the approval of the ISPLS board of directors, have asked that a proposed new Act for "State Plane Coordinates for Indiana" be published in the Hoosier Surveyor and discussed at the Annual Convention in Merrillville on Friday, January 30, 1981. If and when substantial agreement is obtained, a proposed Act will be forwarded to the ISPLS Legislative Committee for action.

The committee has carefully studied a model law proposed by the National Geodetic Survey and made modifications to adapt it to Indiana and to meet the desires of the committee. The committee's deliberations included; (1) the need for the new Act (1983 datum adjustment and metric conversion); (2) the range in values and false-origins for both East and West Zones in the new 1983 system; (3) the use of the systems in various applications, particularly in land descriptions; (4) the practicality of stating a distance limitation (1 km) for ties from monumented horizontal control stations; (5) the use of a descriptive report by land surveyor indicating method of survey used in making connections; (6) the potential future use of an estimate of positional tolerance of the coordinates being recorded.

As the result of these deliberations, the committee opted for a set of false-origin values and resulting ranges which appears to be the optimum scheme where the user of coordinates could tell by the X value which datum and system was utilized. It also opted to eliminate distance limitation and require a report of survey methods, location data, and/or certification by land surveyor.

The committee is asking for comments from interested individuals or groups.

Kenneth S. Curtis, Chairman

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
NATIONAL GEODETIC SURVEY

POLICY ON PUBLICATION OF PLANE COORDINATES

The National Ocean Survey, National Geodetic Survey determined it is in the best interest of the surveying and mapping community that two plane coordinate systems be published and supported beginning in 1983 with the North American Datum redefinition. These two systems will be identified as the "State Plane Coordinate" (SPC) and the "Universal Transverse Mercator" (UTM) systems.

The UTM system will consist of the transverse Mercator projection as defined in Chapter 1 of the 1958 Department of Army Technical Manual TM5-241-8, changing only the definition of the datum. The SPC will consist of the same projections and defining parameters as published in the USC&GS Special Publication 235 (1974 revision) and legally adopted in 35 states, except for the following changes:

1. The grid will be marked on the ground using the 1983 NAD.
2. Distances from the origin will be expressed in meters and fractions thereof. One additional decimal place should be used for the metric expression of a value previously expressed in feet.
3. The arbitrary numeric constant, presently assigned to the origin, will be unchanged but will be considered as meters instead of feet, except for the following: If a state elects to have a different constant(s) assigned to the origin so that the 1983 NAD plane coordinates will appear significantly different from the 1927 NAD positions, when considering the overall system, then the National Geodetic Survey will consider changing the origin constant. If the state so elects, it must amend its legislation to accommodate this change.
4. Michigan's transverse Mercator system will be eliminated in favor of the legislatively approved Lambert system.
5. Projection equations will be programmed such that the maximum computing error of a coordinate will never exceed 0.1 mm when computing the coordinate of a point within the zone boundaries.

A supplementary publication of SPC constants will not be published until 1982 to allow sufficient time for state legislative action.

These state amendments will be based upon the desires and needs within the states, recommendations of the National Geodetic Survey, and among other things will consider the following items.

1. Refinements to eliminate:
 - a. Negative "Y" coordinates for certain islands on the Maine east zone.

b. Negative "X" coordinates for points on the Dry Tortugas on the Florida east zone.

c. Negative "Y" coordinates for some offshore points on the Louisiana south zone.

d. Zone boundary in the State of Washington passing through Grant County following latitude 47° 30' rather than the county boundary.

e. Negative "X" coordinates for some points on Mona Island and vicinity west of Puerto Rico.

2. Urbanization that requires either different parameters for existing zones or additional zones such that a metropolitan area would be located in a single zone. For example:

- a. New York City
- b. Chicago
- c. Cincinnati
- d. Washington, D. C.

3. A change in the arbitrary origin as discussed above. This can be accomplished in most cases by:

a. Changing the "X" coordinate constant of 500,000 to 300,000 or 700,000 where the transverse Mercator is used, or change the "X" coordinate constant of 2,000,000 to 4,000,000 where the Lambert is used.

b. Changing the "Y" coordinate constant of zero to 500,000 or 1,000,000.

c. Changing both "X" and "Y".

The National Geodetic Survey will not change projection defining parameters in states that have legally adopted the SPC system until the state amends its legislation.

Dated: March 18, 1977

T. P. Gleiter
Assistant Administrator
for Administration

FOR SALE: Used Cobra, gasoline-powered air hammer, complete with accessories, good condition, \$900. Contact: Robert Schershel, 2512 Cicero Road, Noblesville, Indiana 46060; (317) 773-1005

LOST: The Society has lost track of its standardized Lufkin base line tape. Anyone knowing its whereabouts, please contact the ISPLS office.

To be discussed at ISPLS Annual Convention
January 30, 1981 at Merrillville, Indiana.
COMMENTS ARE SOLICITED!

August 1980

A PROPOSED ACT

FOR STATE PLANE COORDINATE SYSTEMS

FOR INDIANA

An Act to describe, define, and officially adopt a system of plane coordinates for designating the geographic position of points on the surface of the Earth within the State of Indiana.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF INDIANA

Section 1. The systems of plane coordinates which have been established by the National Ocean Survey/National Geodetic Survey (formerly the United States Coast and Geodetic Survey) or its successors for defining and stating the geographic positions or locations of points on the surface of the Earth within the State of Indiana are hereafter to be known and designated as the Indiana Coordinate System of 1927 and the Indiana Coordinate System of 1983.

For the purpose of the use of these systems, the State is divided into an East Zone and a West Zone.

The area now included in the following counties shall constitute the East Zone: Adams, Allen, Bartholomew, Blackford, Brown, Cass, Clark, Dearborn, Decatur, DeKalb, Delaware, Elkhart, Fayette, Floyd, Franklin, Fulton, Grant, Hamilton, Hancock, Harrison, Henry, Howard, Huntington, Jackson, Jay Jefferson, Jennings, Johnson, Kosciusko, LaGrange, Madison, Marion, Marshall, Miami, Noble, Ohio, Randolph, Ripley, Rush, St. Joseph, Scott, Shelby, Steuben, Switzerland, Tipton, Union, Wabash, Washington, Wayne, Wells, and Whitley.

The area now included in the following counties shall constitute the West Zone: Benton, Boone, Carroll, Clay, Clinton, Crawford, Daviess, Dubois, Fountain, Gibson, Greene, Hendricks, Jasper, Knox, Lake, LaPorte, Lawrence, Martin, Monroe, Montgomery, Morgan, Newton, Orange, Owen, Parke, Perry, Pike, Porter, Posey, Pulaski, Putnam, Spencer, Starke, Sullivan, Tippecanoe, Vanderburgh, Vermillion, Vigo, Warren, Warrick, and White.

Section 2. As established for use in the East Zone, the Indiana Coordinate System of 1927 or the Indiana Coordinate System of 1983 shall be named; and in any land description in which it is used, it shall be designated the "Indiana Coordinate System of 1927 East Zone" or "Indiana Coordinate System of 1983 East Zone."

As established for use in the West Zone, the Indiana Coordinate System of 1927 or the Indiana Coordinate System of 1983 shall be named; and in any land description in which it is used, it shall be designated the "Indiana Coordinate System of 1927 West Zone" or "Indiana Coordinate System of 1983 West Zone."

Section 3. The plane coordinate values for a point on the Earth's surface, used to express the geographic position or location of such point in the appropriate zone of this system, shall consist of two distances expressed in U.S. Survey Feet (1 meter = 39.37/12 feet) and decimals of a foot when using the Indiana Coordinate System of 1927 and expressed in meters and decimals of a meter when using the Indiana Coordinate System of 1983. One of these distances, to be known as the "x-coordinate," shall give the position in an east-and-west direction; the other, to be known as the "y-coordinate," shall give the position in a north-and-south direction. These coordinates shall be made to depend upon and conform to plane rectangular coordinate values for the monumented points of the North American Horizontal Geodetic Control Network as published by the National Ocean Survey/National Geodetic Survey (formerly the United States Coast and Geodetic Survey), or its successors, and whose plane coordinates have been computed on the systems defined in this Act. Any such station may be used for establishing a survey connection to either Indiana Coordinate System.

Section 4. For purposes of describing the location of any survey station or land boundary corner in the state if Indiana, it may be considered a complete, legal, and satisfactory description of such location to give the position of said survey station or land boundary corner on the system of plane coordinates defined in this Act.

Nothing contained in this Act shall require a purchaser or mortgagee of real property to rely wholly on a land description, any part of which depends exclusively upon either Indiana Coordinate System.

Whenever the Indiana Coordinate Systems of 1983 are used to describe a tract of land, the description must make reference to a previously recorded deed to the tract and such deed shall govern in the event of any discrepancy in the coordinates.

Section 5. When any tract of land to be defined by a single description extends from one into the other of the above coordinate zones, the positions of all points on its boundaries may be referred to either of the two zones, the zone which is used being specifically named in the description.

Section 6. (a) For purposes of more precisely defining the Indiana Coordinate System of 1927, the following definition by the United States Coast and Geodetic Survey (now National Ocean Survey/National Geodetic Survey) is adopted:

The "Indiana Coordinate System of 1927 East Zone," is a transverse Mercator projection of the Clarke Spheroid of 1866, having a central meridian 85°40' west of Greenwich, on which meridian the scale is set at one part in 30,000 too small. The origin of coordinates is at the intersection of the meridian 85°40' west of Greenwich and the parallel 37°30' north latitude. This origin is given the coordinates: x = 500,000 feet and y = 0 feet.

The "Indiana Coordinates System of 1927 West Zone," is a transverse Mercator projection of the Clarke Spheroid of 1866, having a central meridian 87°05' west of Greenwich, on which meridian the scale is set at one part in 30,000 too small. The origin of coordinates is at the intersection of the meridian 87°05' west of Greenwich and the parallel 37°30' north latitude. This origin is given the coordinates: x = 500,000 feet and y = 0 feet.

(b) For purposes of precisely defining the Indiana Coordinate System of 1983, the following definition by the National Ocean Survey/National Geodetic Survey is adopted:

The "Indiana Coordinate System of 1983 East Zone" is a transverse Mercator projection of the North American Datum of 1983, having a central meridian 85°40' west of Greenwich, on which meridian the scale is set at one part in 30,000 too small. The origin of coordinates is at the intersection of the meridian 85°40' west of Greenwich and the parallel 37°30' north latitude. This origin is given the coordinates: x = 100,000 meters and y = 250,000 meters.

The "Indiana Coordinates System of 1983 West Zone" is a transverse Mercator projection of the North American Datum of 1983, having a central meridian 87°05' west of Greenwich, on which meridian the scale is set at one part in 30,000 too small. The origin of coordinates is at the intersection of the meridian 87°05' west of Greenwich and the parallel 37°30' north latitude. This origin is given the coordinates: x = 900,000 meters and y = 250,000 meters.

(c) For purposes of locating the position of the Systems on the surface of the earth in Indiana, the following shall be used:

The position of the Indiana Coordinate System of 1927 shall be as determined from horizontal geodetic control points established throughout the state in conformity with the standards of accuracy and specifications for first-order and second-order geodetic surveying as prepared and published by the Federal Geodetic Control Committee (FGCC) of the United States Department of Commerce, whose geodetic positions have been rigidly adjusted on the North American Datum of 1927, and whose coordinates have been computed on the Indiana Coordinate System of 1927. Standards and specifications of the FGCC (or its successors) in force on date of said survey shall apply.

The position of the Indiana Coordinate System 1983 shall be as determined from horizontal geodetic control points established throughout the state in conformity with the standards of accuracy and specifications for first-order and second-order geodetic surveying as prepared and published by the Federal Geodetic Control Committee (FGCC) of the United States Department of Commerce, whose geodetic positions have been rigidly adjusted on the North American Datum of 1983, and whose coordinates have been computed on the Indiana Coordinate System 1983. Standards and specifications of the FGCC (or its successors) in force on date of said survey shall apply.

Section 7. No coordinates based on either Indiana Coordinate System, purporting to define the position of a point on a land boundary, shall be presented to be recorded in any public land records or deed records unless such recording document shall also contain a description of the nearest first or second-order horizontal geodetic control monument from which the coordinates being recorded were determined and the method of survey for such determination. If the position of the described first or second-order geodetic control monument is not published by the National Geodetic Survey (or its successors) the recording document shall contain a certification signed by an Indiana Registered Land Surveyor stating that the subject control monument and its coordinates have been established and determined in conformance with the specifications given in section 6 of this act. The publishing of the existing control stations, or the acceptance with intent to publish the newly established control stations, by the National Geodetic Survey will constitute evidence of adherence to the FGCC Specifications. Horizontal geodetic control monuments should be permanently monumented and control data sheets prepared and filed so that a densification of the control network is accomplished.

Section 8. The use of the term "Indiana Coordinate System of 1927" or "Indiana Coordinate System of 1983" on any map, report of survey, or other document shall be limited to coordinates based on the Indiana coordinate systems as defined in this Act.

Section 9. If any provision of this Act shall be declared invalid, such invalidity shall not affect any other portion of this Act which can be given effect without the invalid provision; and to this end, the provisions of this act are declared to be severable.

Section 10. The Indiana Coordinate System of 1927 shall not be used after January 1, 1990; the Indiana Coordinate System of 1983 will be the sole system after this date.

The U.S. Survey Foot

Before we got precise about it, the *foot* was 12 inches and the inch was about the width of the thumb, somebody's thumb. In 1866 Congress established that there be 39.37 inches exactly in the meter and thus that one inch shall equal 2.540005 cm, though the British inch was 2.539995 cm (and Canada's was somewhere between). In World War II it became evident that compatibility in tight-fitting parts demanded a standardization.

So in 1959 Britain and the U.S. agreed to adopt the "new" inch as equal to 2.54 cm exactly, but the U.S. Coast and Geodetic Survey demurred. They chose to stay with the old 39.37 defini-

tion so as not to upset the State Plane Coordinate Systems. So we now have two definitions of the foot!

The issue is pertinent to all surveying/engineering measurements today and everyone should be conscious of it. Even if by EDM one measures in meters, the conversion to feet is where one must choose either the "old" or the "new" foot definition:

3.280833333 old feet = 1 meter

3.280839895 new feet = 1 meter

It would mean a 4½ foot discrepancy between Boston and Buffalo. Which should you use? The problem isn't going to go away; it must be faced!



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ASSOCIATE -- Associated or affiliated with the Land Surveying Profession but is not qualified to become registered. Associate is not entitled to vote or hold office, but will receive newsletter and will be invited to participate in meetings.

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_____	Manual No. 6 - <u>Establishment of Boundaries by Unwritten Methods</u> by John G. McEntyre (June 1976), 171 pages.	\$ 5.25	\$ 7.50
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\$1.50 postage to be added to each order.

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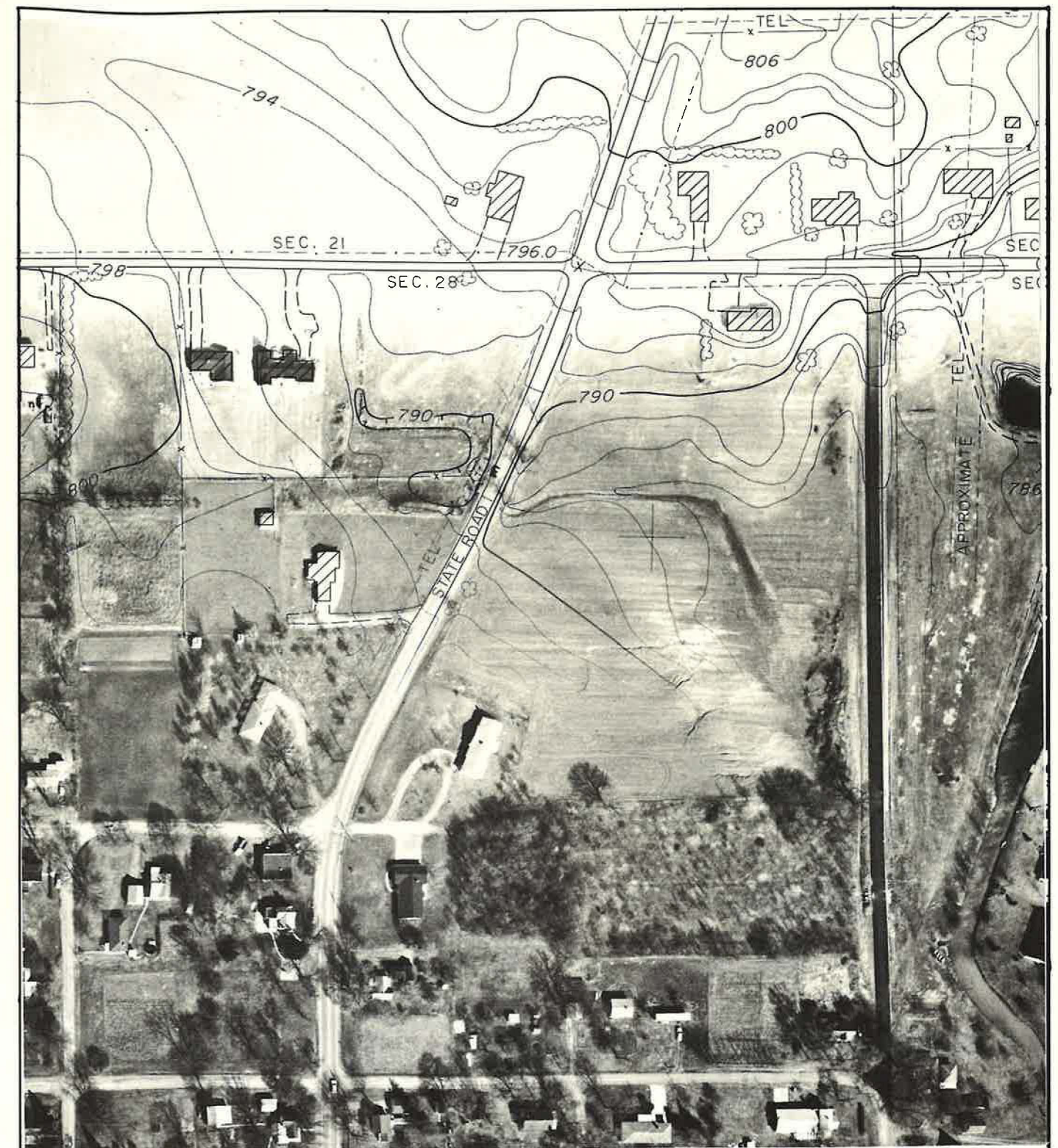
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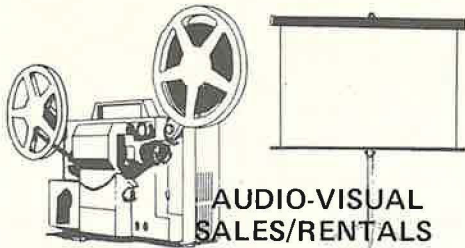
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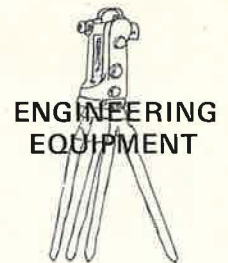
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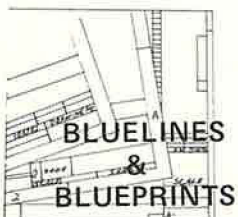
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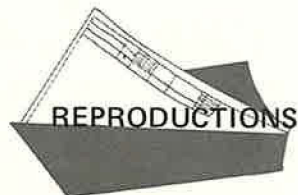
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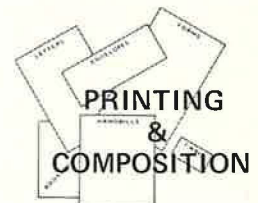
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