

**CHAPTER FIVE**  
**LAND SURVEYING**

**BUREAU OF DESIGN AND ENVIRONMENT**  
**SURVEY MANUAL**

May 2001

**CHAPTER FIVE**  
**LAND SURVEYING**

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## CHAPTER FIVE

# LAND SURVEYING

### I. INTRODUCTION

#### A. GENERAL

Please Note: The information for this chapter was basically reproduced from the Land Acquisition Manual, [Chapter 1, Section 104](#), dated November 1995.

Land surveying deals with the laying off or the measurement of lengths and directions of lines forming the boundaries of land or real property. Land Surveys are made for one or more of the following purposes.

1. To secure the necessary data for writing legal descriptions and for determining the area of designated tracts of land.
2. To reestablish the boundaries of a tract of land for which a survey has previously been made and for which the description is known.
3. To subdivide a tract of land into two or more smaller units in accordance with a definite plan which determines the size, shape, and location of the units.

Whenever real estate is conveyed from one owner to another, it is necessary to know and identify the location and boundaries of the land conveyed within acceptable limits of certainty. Land acquired for highway improvements change ownership from private owners to the State of Illinois. Private property owners thus become the neighbors of the newly constructed highway facilities. The maintenance of good relationships with these neighbors is a prime concern of the Department. Well established boundary practices are the basic philosophies on which this section is based.

It is the policy of the Department that no right of way acquisition will result in a boundary dispute and that as the consequence of the construction of a highway project, no pre-existing legal landmarks be destroyed or obliterated. In case of inadvertent or neglectful

destruction or obliteration of public or private survey monuments, steps shall be taken by the Department to make corrections without undue delay.

## **II. DEFINITIONS**

### **A. LAND SURVEYING**

Land Surveying is the art and science of (1) re-establishing U.S. Public Land Surveys and land boundaries based on documents of record and historical evidence; (2) planning, designing and establishing property boundaries; and (3) certifying surveys as required by statute or local ordinance such as subdivision plats, registered land surveys, judicial surveys and space delineation.

### **B. RIGHT OF WAY SURVEYS**

Right of Way Surveys are land surveys performed to accurately locate and describe the land or rights to be taken for a transportation facility. The right of way may be acquired in fee or as an easement.

## **III. RESPONSIBILITY OF SURVEYOR**

The practice of land surveying is described in the Illinois Compiled Statutes and Illinois Professional Land Surveyors performing work for the Department must be aware of their duties and responsibilities as per 225 ILCS 330/1, et seq. and 55 ILCS 125/0.01, et seq. They have no judicial authority to resolve boundary disputes. They do have the legal authority to locate, on the ground, the limits of property ownership according to their interpretation of a valid written description. They gather and evaluate evidence relative to boundary locations and may testify as to their judgment based on their data findings. The land surveyors have no authority to subdivide land. This authority is with the property owners who may portion off their property in accordance with statutory requirements and local zoning ordinances. The land surveyors act as the agents of the owners, make their surveys, prepare the plats and legal descriptions and certify to the conditions under which their work was completed.

In retracing the old and established lines, the land surveyor is obligated to follow the footsteps of the original surveyor. It is therefore essential that they know the historical background of land surveys in the area of their work.

Right of Way Surveys will be performed with the same degree of care and with the same principles, equipment, procedures and under the same statutory common laws as are utilized for the performance of land surveys by private surveying practitioners for the general public.

In most cases within the Department the survey fieldwork described herein is performed by personnel of the District Bureau of Program Development, Land Acquisition Section. Measurements are made and data is collected by these surveyors who provide the District Chief of Plats and Plans with the necessary information to prepare their plats and legal descriptions. Since this field work is used to prepare plats and documents for recording as required public records, it is a Department objective to have those individuals performing the field work to be licensed professional surveyors.

#### **IV. SURVEYING SERVICE LIMITATIONS**

This department is not in the business of Land Surveying, meaning that no land surveying services will be provided to any private owner as an inducement to sign an instrument of conveyance. During right of way negotiations, property owners occasionally request that their property be surveyed in its entirety showing the area of taking as well as that of the remainder.

It is the expressed policy of the Department to survey and monument the area of takings only. Surveying the remainder shall be avoided at all times because it places the Department in unfair competition with the private surveying practitioner. Surveying property in its entirety can only be justified if it is in the interest of the Department, that is, if the remainder must be established with certainty for appraising purposes. In such instances, no monuments should be set by the surveyor and no certified plat should be recorded.

At times it is required that the right of way lines be staked either to satisfy the property owners during the negotiation process or to delineate the taking for jury viewing in a condemnation proceeding. This work, because of its preliminary nature, does not require setting of permanent monuments and is not considered a bonafide survey.

When right of way taking causes the loss of physical monuments marking the apparent corners of property, new monuments of equal or better quality shall be set at the intersection of the property line and the right of way by or under the direction of an Illinois Professional Land Surveyor. A parcel plat shall be prepared, in all such instances, and recorded with the Recorder of Deeds or Registrar of Titles in the county in which the property is located.

## **V. U. S. PUBLIC LAND SURVEYS**

### **A. U.S. RECTANGULAR SYSTEM**

The basic division of the land in Illinois is the U.S. Public Land Survey System, also known as the U.S. Rectangular System. The objective of this system was to establish and monument on the ground, legal land divisions for the purpose of describing and conveying of the public domain under the general land laws of the United States. The rectangular system is basically a grid system under which the land is divided uniformly and referenced to two fixed lines, one at right angles to the other. One is a north-south line and is called the principal meridian. The other line, an east-west line, is called the base line.

### **B. PRINCIPAL MERIDIANS**

The land in Illinois was surveyed by government surveyors using three different principal meridians:

#### **B.1 The Second Principal Meridian**

The Second Principal Meridian was established in 1805 to control the surveys in Indiana and a portion of Illinois. The Second Principal Meridian starts at the confluence of Little Blue River with the Ohio River and runs north to the northern boundary of Indiana. Its geographic location is 85 degrees, 27 minutes and 21 seconds longitude west of Greenwich. The base line is an east-west line at 38 degrees 28 minutes and 14 seconds latitude. It commences at Diamond Island in the Ohio River and runs due west to the Mississippi River. For practical reasons, its extension is the base line for the Third Principal Meridian. See [Figure 5.1, page 5-12.](#)

#### **B.2 The Third Principal Meridian**

The Third Principal Meridian controls the major portion of Illinois. This meridian passes through the approximate center of the state. It was established in 1805 as a line running true north from the point of confluence of the Ohio and Mississippi Rivers. Its exact location is 89 degrees, 08 minutes and 54 seconds longitude west of Greenwich, England. The base line is an east-west line intersecting the Third Principal Meridian at a point near Centralia at 38 degrees, 28 minutes and 27 seconds latitude. [See Figure 5.1, page 5-12.](#)

### B.3 The Fourth Principal Meridian

The Fourth Principal Meridian was established in 1815 to control the lands located between the Illinois and Mississippi Rivers. It begins at a point near Beardstown and extends northward. It is an extension of a line straight north from the mouth of the Illinois River near Grafton. The longitudinal reading of this line is 90 degrees, 27 minutes and 11 seconds west of Greenwich. See [Figure 5.1, page 5-12.](#)

The base line for the Fourth Principal Meridian runs straight west from the beginning of this meridian near Beardstown. The geographical location of this line is 40 degrees, 0 minutes and 50 seconds north of the equator. The Fourth Principal Meridian has a second base line used for describing land in Wisconsin and parts of Minnesota. This base line coincides with the Illinois-Wisconsin border.

## **C. TOWNSHIPS**

After placement of the principal meridians and base lines the government surveyors established the grids of townships, whose sides are six miles east and west and six miles north and south. Subsequently the townships were subdivided by the deputy surveyors into 36 sections of one mile square according to instructions by the Surveyor General. See [Figure 5.2, page 5-13.](#) The monuments set by these government surveyors are now to a great extent lost or obliterated. Their locations, however, mark the legal boundaries of all the lands and the restoration of these monuments and determination of the original township and section lines is the core of all land surveying activities. See [Figures 5.3 and 5.4, pages 5-14 and 5-15](#) respectively.

## **D. FEDERAL INSTRUCTIONS**

The land in Illinois was surveyed by the government surveyors between the years of 1805 and 1855. The major part of the work was done between 1815 and 1835. The first written instructions to the deputy surveyors for subdividing townships were issued in 1815 by Edward Tiffin, Surveyor General. It is therefore important that the Land Surveyor in Illinois be thoroughly familiar with these instructions. A valuable source of information is a publication by the Illinois Professional Land Surveyors Association entitled "Federal Instructions for Surveyors of the Public Lands from 1785 to 1843". Also essential to the Land Surveyor is the pamphlet by the U.S. Department of the Interior, Bureau of Land Management, entitled "Restoration of Lost or Obliterated Corners and Subdivision of Sections". Copies of this pamphlet and Tiffin's Instructions

are available to the Surveyors of the Department from the Central Bureau of Land Acquisition upon request.

## **VI. PERPETUATION OF U.S. PUBLIC LAND SURVEY MONUMENTS**

### **A. ILLINOIS COMPILED STATUTES**

The Land Survey Monuments Act (765 ILCS 220/0.01 to 11, et seq.) provides for the perpetuation of Land Survey Monuments.

Based on these statutes, a professional land surveyor is required to file monument records with the County Recorder of Deeds or Registrar of Titles in the county in which the survey is made, using public land survey monuments as control corners. It also requires the filing of monument records after establishing, reestablishing, restoring or rehabilitating a public land survey monument, except when a monument record is already on file with the Recorder of Deeds or Registrar of Titles and the monument is found at the location described.

### **B. THE LAND SURVEY MONUMENTS ACT**

The Land Survey Monuments Act makes any person, including the responsible official of any agency of State, County or Local government who willfully and knowingly violates any of its provisions guilty of a "Class A" misdemeanor. It is the position of the department that all work performed in regard to Land Surveying and preparation of statutory plats (Parcel Plats and Plats of Highways) be in full compliance with this Act. In order to clarify ambiguities, to assure uniformity of interpretation and to provide for acceptable standards of practice and professional ethics for Land Surveyors in State employment and those retained on a contractual basis, the following guidelines are applicable:

- No survey shall be completed and no plat shall be acceptable which uses a section corner or quarter corner as a control corner for which no monument record is on file with the Recorder of Deeds or Registrar of Titles or for which such a monument record has not been satisfactorily prepared and submitted together with the plat ready for filing.
- If a survey is controlled by a reestablished monument placed by the surveyor at the location of a lost corner in accordance with lawfully prescribed methods, it shall be mandatory that location ties to all monuments used in reestablishing the lost corner be provided as part of the monument record.



In certain instances this will require preparation and filing of more than one monument record document.

- If it is required that a survey show the direction of a section line or the angle subtended between a section line and the centerline or survey line, it is necessary that two monuments be utilized to establish the section line with certainty. The ties to both monuments shall be noted on the monument record and placed on file according to the Act.
- Restoration of lost or obliterated corners must be by or under the direct supervision of an Illinois Professional Land Surveyor.
- A corner shall not be declared lost until every means has been exercised that might aid in identifying its true original position.
- In no event may a non-licensed surveyor declare a monument lost, nor may unsupervised field searches for corners be made that would possibly destroy the corner accessories and original marks that would have provided evidence for the position of a corner.

Every section corner and quarter section corner or their positions are Public Land Survey monuments subject to this Act. The recordation of other points resulting from the subdivision of sections (aliquot corners) is not required. It is, however, encouraged by this Department to do so whenever possible in order to facilitate the maintenance of a tight network of monument records.

### **C. PROFESSIONAL REGULATION**

Special instructions for the implementation of the Land Survey Monuments Act issued by the Department of Professional Regulation are adopted by this Department:

- The monument record shall be recorded at the time of recording the survey if the survey is placed on record but no later than 40 days after the survey is completed.
- The document shall consist of one or more individual sheets measuring 8.5 inches by 11 inches, not permanently bound, and not a continuous form.

- The document shall be printed in black ink, typewritten or computer generated, in at least 10-point type and shall have clarity suitable for microfilming and reproducing.
- The document shall be on white paper of not less than 20-pound weight, and shall have a clean margin of at least one half-inch border on the top, the bottom and each side. See [Figure 5.5a, b, pages 5-16, 5-17.](#)
- The first page of the document shall contain a blank space, measuring at least 3 inches by 5 inches, in the upper right hand corner.
- The document shall not have any attachment stapled or otherwise affixed to any page.
- There shall be no more than four monuments shown on each Record and all monuments must be for a common section.
- The surveyor may show geodetic position or other information at his/her option providing it does not detract from the clarity of the requirements of the monument record.
- The drawing shall be oriented with North toward the top of the form. See [Figures 5.6, 5.7 and 5.8, pages 5-18, 5-19 and 5-20.](#)

## **VII. PRESERVATION OF MONUMENTS**

Section 9-104 of the Highway Code (605 ILCS 5/9-104 et seq.) provides that:

“In grading highways, corner stones marking sectional or other corners shall not be disturbed, except to lower such stones so that they will not rise above the surface of the highway. If a corner stone is covered to a depth greater than 12 inches or is covered with a highway surface material other than road oil, the location of the corner stone shall be preserved by setting a suitable monument over the stone which shall be level with the highway surface or by setting at least 3 offset monuments in locations where they will not be disturbed. When any corner stone is lowered or when a monument is set over a stone or when offset monuments are set, it shall be done in the presence of and under the supervision of an Illinois Professional Land Surveyor who shall

record the type and location of the reference monuments with respect to the corner stone in the Office of the Recorder in the County in which such a stone is located.”

Pursuant to the Land Survey Monuments Act, (765 ILCS 220/0.01 et seq.) surveyors have a duty to preserve and restore monuments.

To comply with the provisions of this Act, it is the policy of the Department that if in the design of a highway improvement, it is determined that a U.S. Public Land Survey Monument will be affected by construction operations, the Designer shall prepare Special Provisions to be included in the contract, which will provide for the construction and payment for all such monuments and markers. The Special Provisions shall clearly stipulate that setting of the monuments and markers are to be done under the supervision of either a contractor-provided or District-provided Illinois Professional Land Surveyor. The Special Provisions shall also require that the attendant monument records be prepared and filed in accordance with 765 ILCS 220/7.

#### **VIII. SURVEY TIES TO EXISTING MONUMENTS**

765 ILCS 205/9, in part, states that when the right of way for a new highway is laid out or widened (does not mean widening of pavement) and when an existing highway is vacated, a plat must be prepared by or under the direction of an Illinois Professional Land Surveyor which must be filed with the Office of the County Recorder or Registrar of Titles. The plat must show reference ties to legal subdivisions of the land known by established corners or adequate existing records.

In rural areas, known and established corners are those of the existing public land survey system. In urban areas, this system is normally further subdivided into city blocks and lots, into commerce and industrial tracts, into residential subdivisions, streets, roads and highways. The surveyor must take great care to reference his/her survey lines to the existing survey schemes. Found monuments are noted, obliterated corners are recovered and lost corners are reestablished to provide adequate reference for control of boundary lines involved.

It is incumbent upon the District Chief of Plats and Plans, the Illinois Professional Land Surveyor for the Department, to make an extensive survey of a project prior to the beginning of the survey work. It should be determined which monuments will be used as control corners of the survey, which monuments are existing, obliterated or lost. It should also be decided which corners are to be reestablished and steps should be taken to do so with the assistance of the survey crew prior to establishing the survey line. If

the locations of the control monuments are resolved prior to the commencement of the route survey, time will be saved in later efforts to establish their positions.

The District Chief of Plats and Plans must also take whatever action is necessary to insure that the basic survey lines and centerlines are established with expected accuracy and that boundary lines are measured and referenced to the survey line with the same degree of certainty. The success of this phase of work is based entirely upon the lead time available to the Land Surveyor in preparing the preliminary studies, the diligence used in this preparation and finally upon the cooperation between the route surveyors and the Professional Land Surveyor of the District Bureau of Program Development, Land Acquisition Section.

In the search for existing control monuments the District Chief of Plats and Plans has copies of the original U.S. Public Land Survey field notes and the plats of record from the State Archives. Photo copies will be provided upon request. In addition, the Monumentation Recordation Act (765 ILCS 220/1 et seq.) provides for a good source of information at the County Recorder of Deeds or Registrar of Titles Office.

The most fruitful source of information in matters of survey monuments and control corners, whether relative to the Public Land Survey System or private subdivision, is the office of the private Land Surveyor who has worked in the area or who has prepared and filed subdivision plats which are affected by the right of way taking. Professional Land Surveyors are required by law "to cooperate in matters of maps, field notes and other pertinent records" (765 ILCS 205/9) with their fellow professional surveyors. The District Chief of Plats and Plans in searching for survey control monuments must take positive steps to contact local surveying practitioners to gather needed data. Requests for this information must be made in writing.

The letter may be submitted in person or may be mailed after a telephone contact. Non-cooperation by private practitioners in regard to this matter must be brought to the attention of the Central Bureau of Land Acquisition for proper action.

The Department is likewise committed to cooperate in providing data to private surveying practitioners.

## **IX. ACCURACY OF FIELD WORK**

Field work must be performed with sufficient accuracy to produce a mathematically closed survey subject to maximum allowable position tolerance for the establishment of property corners as follows:

- 0.03 feet (0.010 meters) in areas where structures may lawfully be erected along property lines.
- 0.06 feet (0.020 meters) in suburban residential properties
- 0.25 feet (0.075 meters) in rural unsubdivided acreage tracts.

The route survey line and centerline, which are the basic control for all work on a highway project, must be established in accordance with procedures necessary to attain “third-order” accuracy. See [Chapter Two, Section II, Table 3, page 2-8](#) for third-order accuracy specifications.

## **X. RIGHT OF WAY MARKERS**

Right of Way markers are used to delineate the extent of State highway right of way for operational purposes such as mowing, landscaping and general highway maintenance. In accordance with specifications contained in the Design and Environment Manual, they are placed at discontinuities in the right of way line.

Right of Way markers are not survey markers and their location is not to be construed to mark the property lines. They are part of the structural facility of a highway and have no more nor less bearing on the property lines than the pavement or fence lines in place. Irons pins set to mark the state right of way boundary shall not be removed when setting right of way markers. A common distance for markers to be set is 6 to 12 inches inside the right of way boundary.

To avoid ambiguity and property line disputes, right of way markers shall not be placed at the points where property lines or property fences between adjacent owners intersect the right of way lines. Right of way markers at such locations could mistakenly be interpreted to mark the property lines between adjoining properties.

## **XI. PERMANENT SURVEY MARKERS AND PERMANENT SURVEY TIES**

Permanent survey markers are used to delineate the centerline of a project and to establish State owned permanent land survey control monuments on the ground. Such markers should be set at all points that geometrically define the survey line or the centerline of a highway location, i.e., points of intersection (PI), if accessible and within the right of way, points on curve (POC), points of curvature (PC) points of tangency (PT) and points on tangent (POT). The spacing of the markers should be close enough that at least two are visible from any one monument (backsight and foresight) thus providing

for location and directional control of the survey line. Provisions for placement of permanent survey markers are contained in the Design and Environment Manual.

On certain types of projects or under certain conditions of the terrain of a project, the placement of permanent survey markers at the location of the control points may not be practical. In these situations, reference markers should be set near the right of way lines to perpetuate the location of the control points. Provisions for placement of reference markers are contained in the Design and Environment Manual under permanent survey ties.

The location of the control points should be established at the time of the original survey. The markers will be set during construction in accordance with the construction plans and under the direction of a Illinois Professional Land Surveyor.

To provide for this work, the Designer shall prepare special provisions to be included in the contract that will call for the construction and payment for permanent survey markers and permanent survey ties.

See [Figures 5.09 and 5.10, pages 5-21 and 5-22](#) for examples of permanent markers.

PRINCIPAL MERIDIANS AND BASE LINES OF ILLINOIS AND SURROUNDING STATES

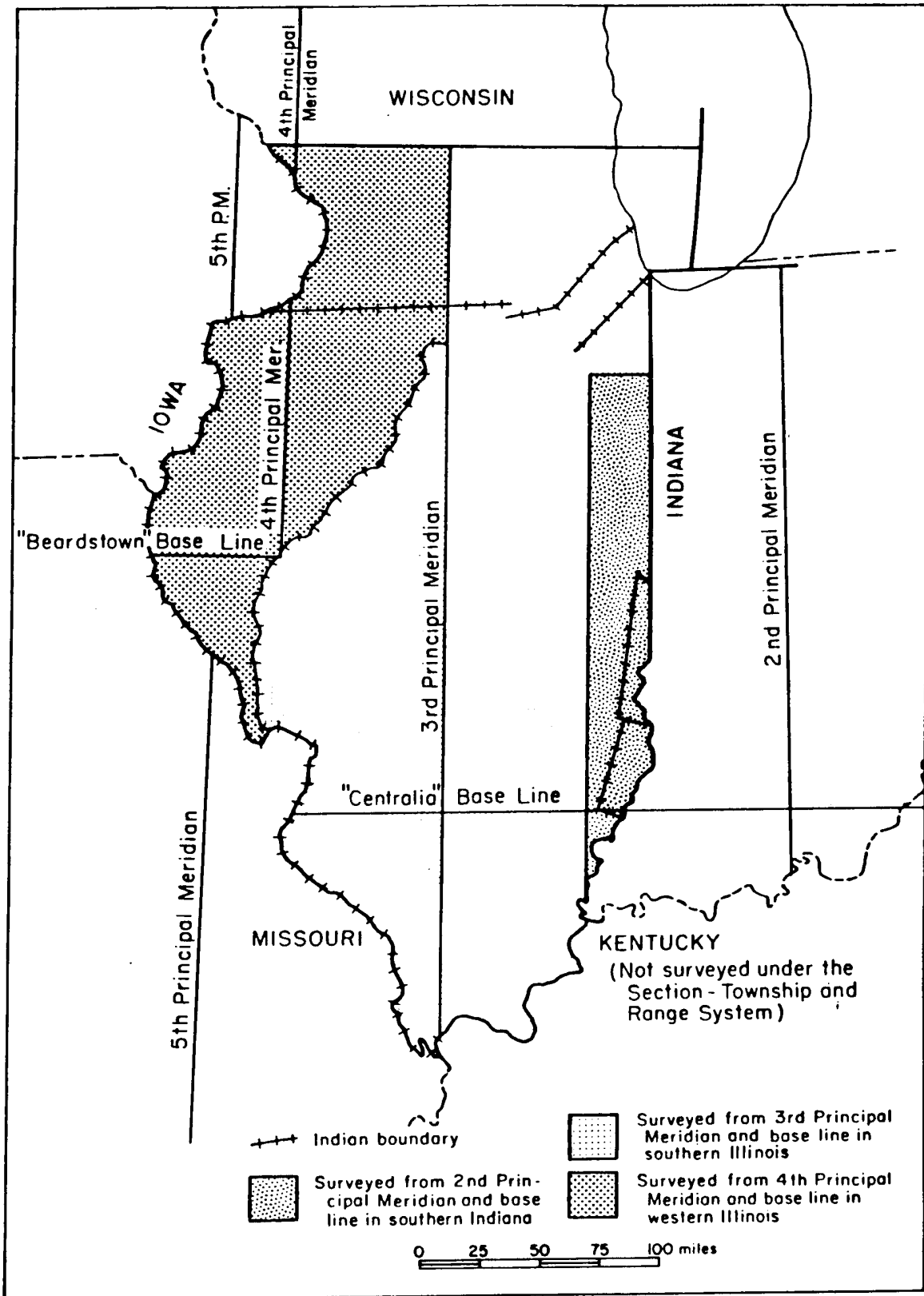
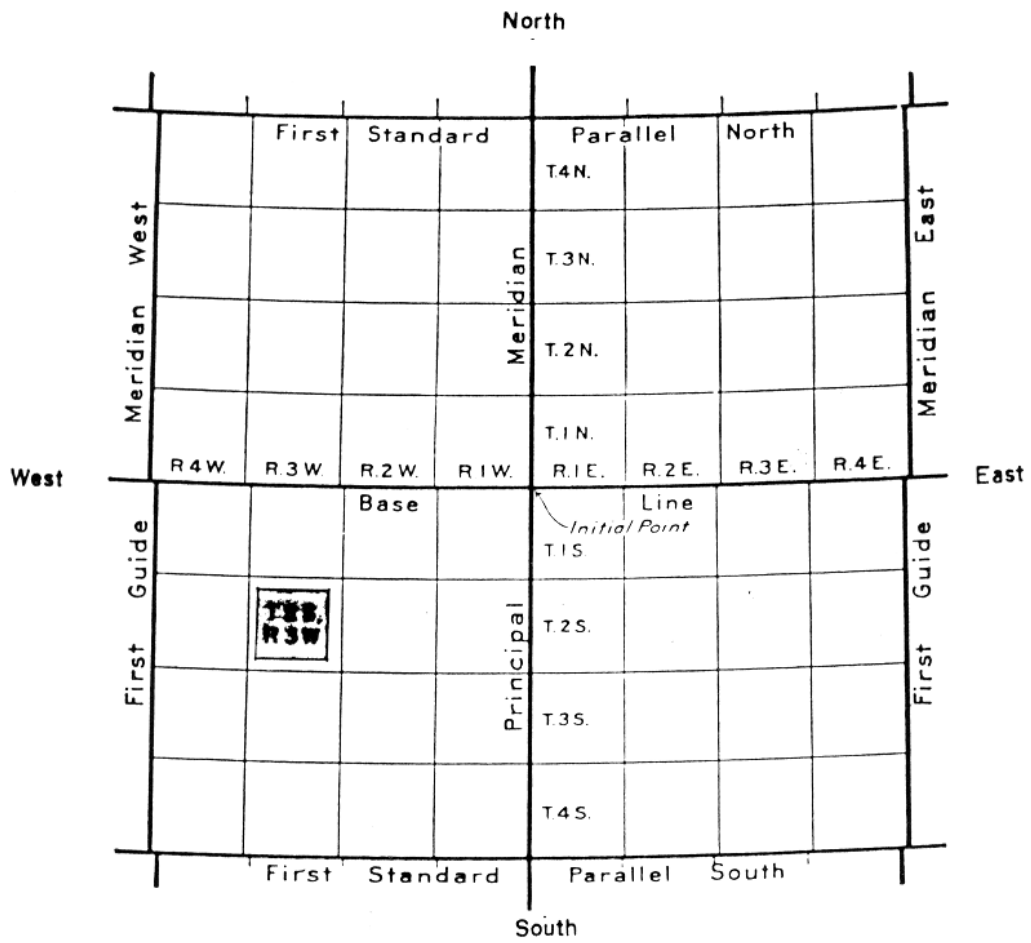


Figure 5.1

GENERALIZED DIAGRAM OF  
THE RECTANGULAR SYSTEM OF SURVEYS

TOWNSHIP GRID



TOWNSHIP 2 SOUTH, RANGE 3 WEST

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	Section 14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

SECTION 14

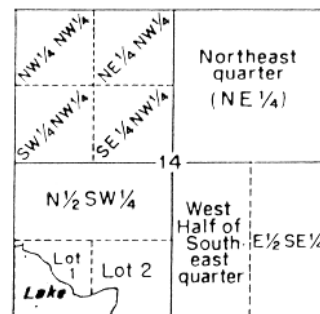
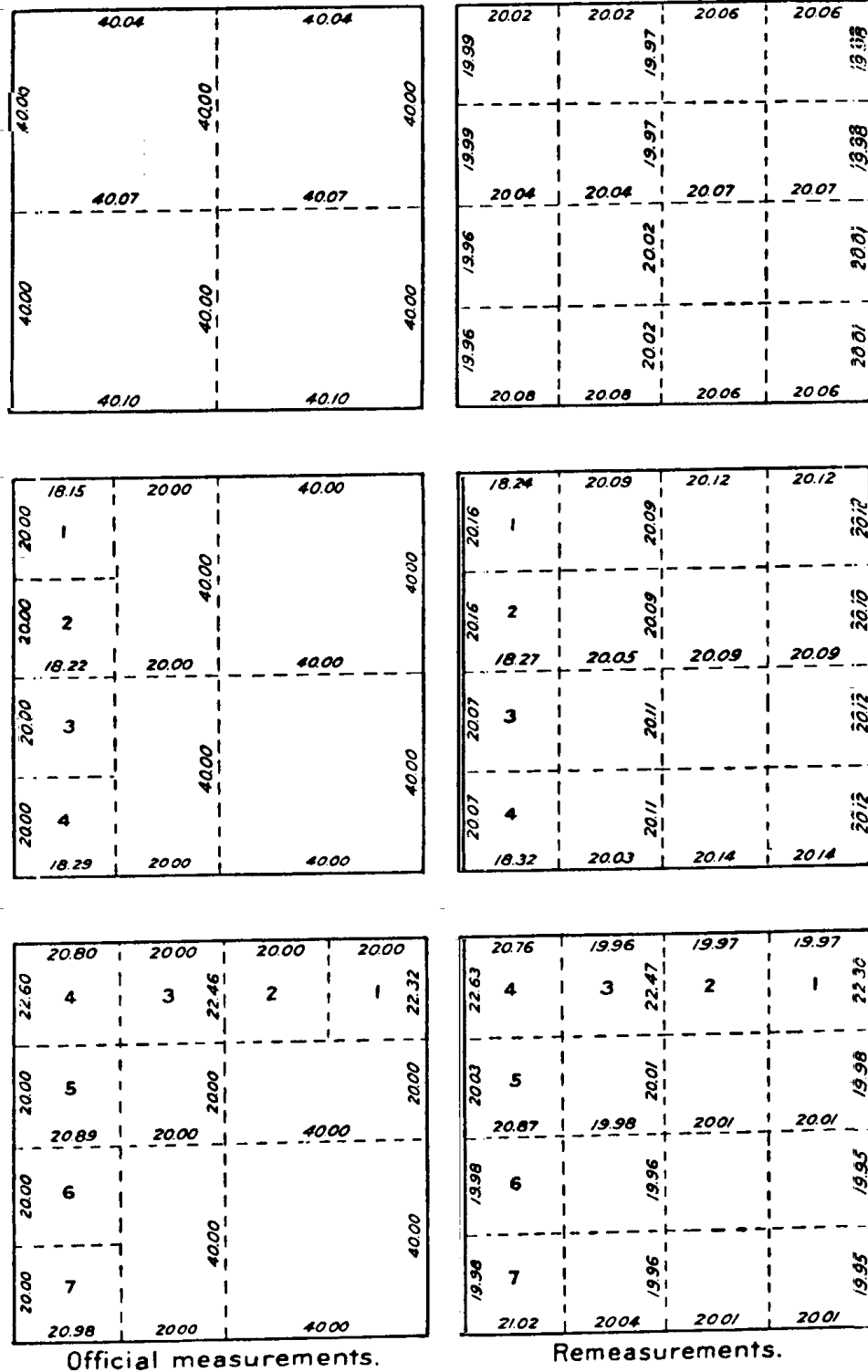


Figure 5.2



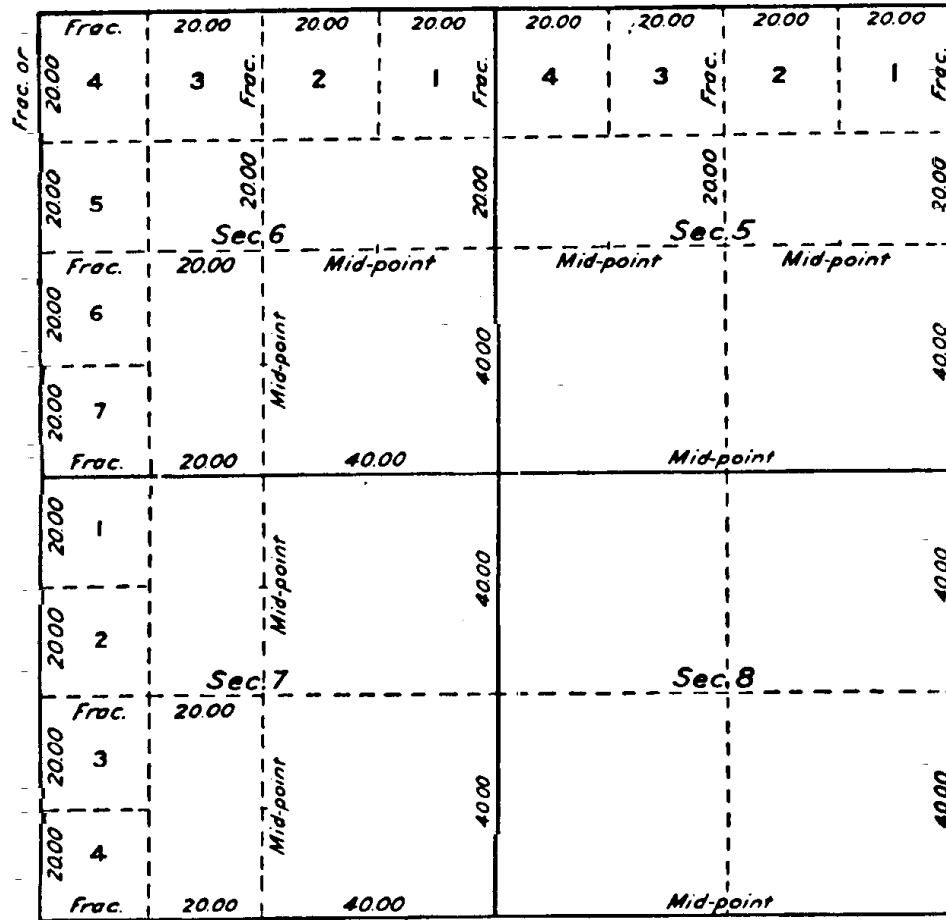
SUBDIVISION OF SECTIONS



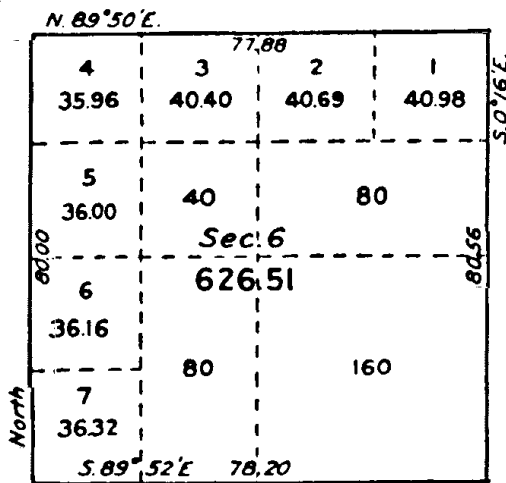
The above examples of subdivision by survey show the relation of the official measurements and calculated distances to the remeasurements, and indicate the proportional distribution of the differences.

Figure 5.3

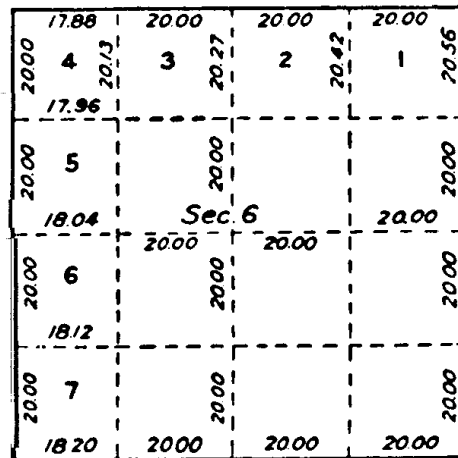
SUBDIVISION BY PROTRACTION



Showing normal subdivision of sections.



Showing areas.

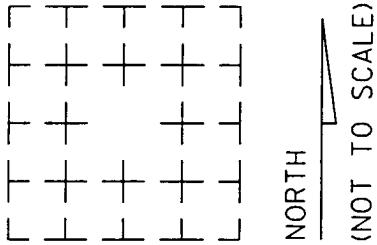


Showing calculated distances.

Examples of subdivision by protraction.

Figure 5.4

**“MONUMENT RECORD”**  
 LAND SURVEY MONUMENTS  
 SITUATED IN:  
 SECTION \_\_\_\_\_, TWP \_\_\_\_\_  
 RANGE \_\_\_\_\_, \_\_\_\_\_ P.M.  
 \_\_\_\_\_, COUNTY, IL



SPACE RESERVED FOR RECORDING OFFICER

**RECOVERY TIE DRAWING**

(SHOW MONUMENT DESCRIPTION, ACCESSORIES & KNOWN HISTORY AT EACH RECORD CORNER WITH TIES).

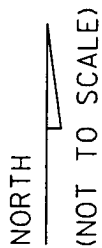
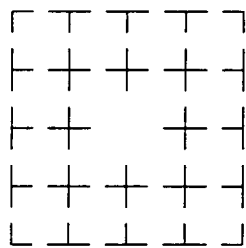
ROUTE \_\_\_\_\_  
 SECTION \_\_\_\_\_  
 JOB NO. \_\_\_\_\_

I, \_\_\_\_\_, HEREBY  
 CERTIFY THAT THIS DOCUMENT WAS PREPARED  
 UNDER MY DIRECTION IN ACCORDANCE WITH  
 THE LAND SURVEY MONUMENT ACT  
 CHAPTER 765 ILCS 220.  
 \_\_\_\_\_  
 ILL PLS NO. \_\_\_\_\_ DATE \_\_\_\_\_

(SEAL)

SHEET 1 OF \_\_\_\_

Figure 5.5a



**"MONUMENT RECORD"**

SECTION \_\_\_\_\_ TWP \_\_\_\_\_  
RANGE \_\_\_\_\_, \_\_\_\_\_ P.M.  
\_\_\_\_\_ COUNTY, IL

ROUTE \_\_\_\_\_  
SECTION \_\_\_\_\_  
JOB NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

Figure 5.5b

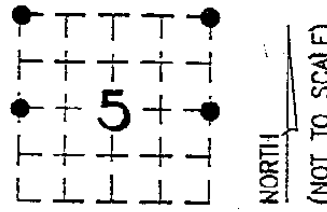

<p><b>"MONUMENT RECORD"</b></p> <p>LAND SURVEY MONUMENTS SITUATED IN          SECTION <u>5</u> TWP <u>14 N</u>          RANGE <u>2 E</u>, <u>3rd.</u> P.M.  <u>MACON</u> COUNTY, IL</p> <div style="text-align: center;">  </div>	<p style="text-align: center; font-size: 1.2em;">1406625</p> <p>State of Illinois      58      I Hereby          Macon County           Certify          That This Instrument Was Filed For          Record At _____</p> <p style="text-align: center; font-weight: bold;">MAR - 8 1995</p> <p>Recorded in Book _____ Page _____  <i>Edwin J. Tangney Jr.</i>          Recorder          Fee _____</p> <p style="text-align: center;">SPACE RESERVED FOR RECORDING OFFICER</p> <p style="text-align: center;"><u>RECOVERY TIE DRAWING</u></p> <p>(SHOW MONUMENT DESCRIPTION, ACCESSORIES &amp; KNOWN HISTORY AT EACH RECORD CORNER WITH TIES.)</p> <p>3034      W 1/4 COR. SEC. 5, T. 14 N., R. 2 E., 3rd. P.M.          REBAR WITH YELLOW CAP BURIED 100 mm          BELOW OIL &amp; CHIP ROAD.</p> <p>3035      E 1/4 COR. SEC. 5, T. 14 N., R. 2 E., 3rd. P.M.          #15 ROD BURIED 200 mm BELOW SURFACE          OIL &amp; CHIP RD.</p> <p>3038      N.E. COR. SEC. 5, T. 14 N., R. 2 E., 3rd. P.M.          R.R. SPIKE BURIED 90 mm BELOW OIL &amp;          CHIP RD.</p> <p>3037      N. W. COR. SEC. 5, T. 14 N., R. 2 E., 3rd. P.M.</p>
<p>ROUTE <u>FAP 322</u>          SECTION <u>46R &amp; 47R</u>          JOB NO. <u>R-95-030-93</u></p>	<div style="text-align: center;">  <p>(SEAL)</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>I, <u>RICHARD L. WAVERING</u>, HEREBY          CERTIFY THAT THIS DOCUMENT WAS PREPARED          UNDER MY DIRECTION IN ACCORDANCE WITH          THE LAND SURVEY MONUMENT ACT          CHAPTER 765 ICS 220.  <i>Richard L. Wavering</i>      <u>3/2/95</u>          ILL. PLS NO. <u>2217</u>      DATE</p> </div>

Figure 5.6

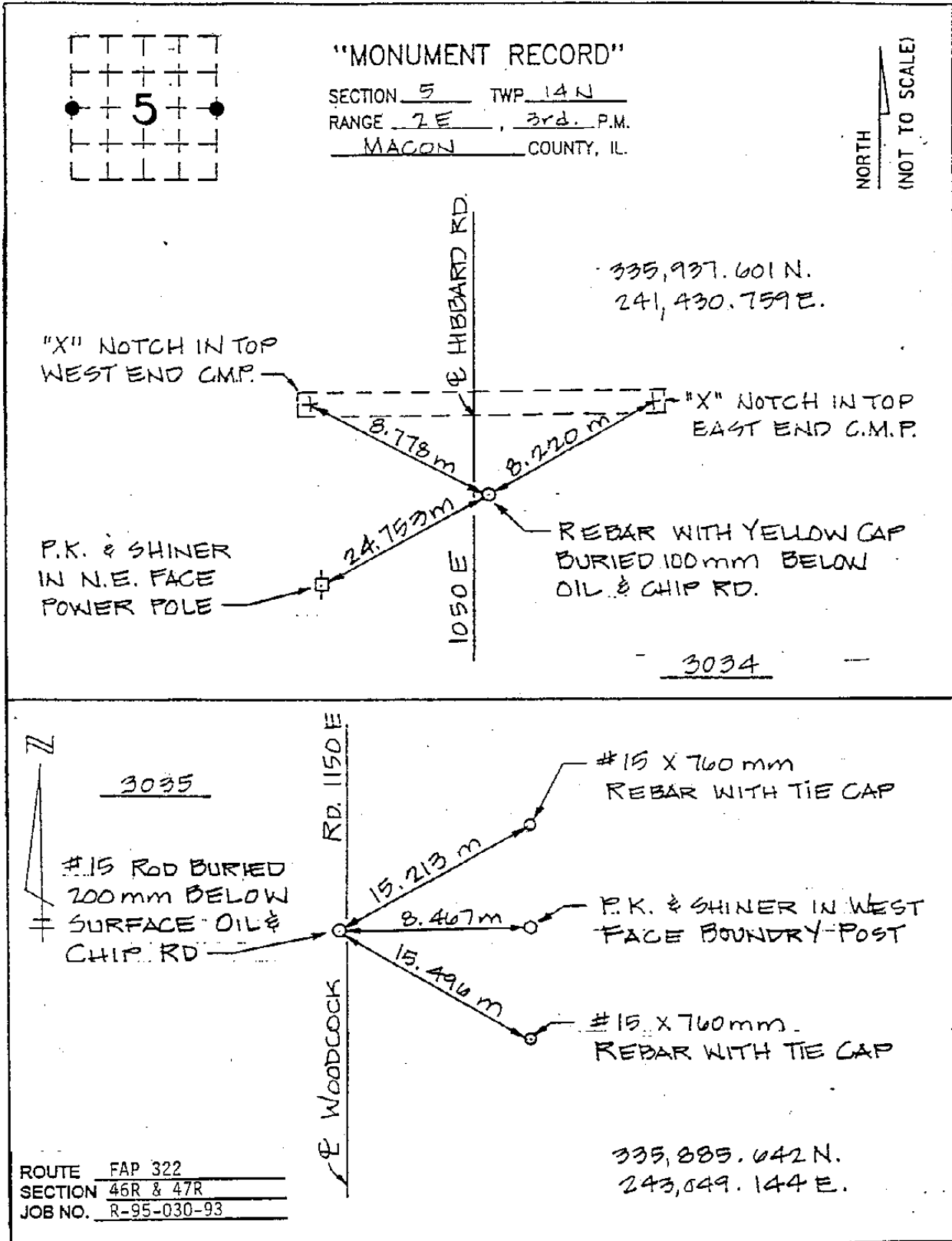


Figure 5.7

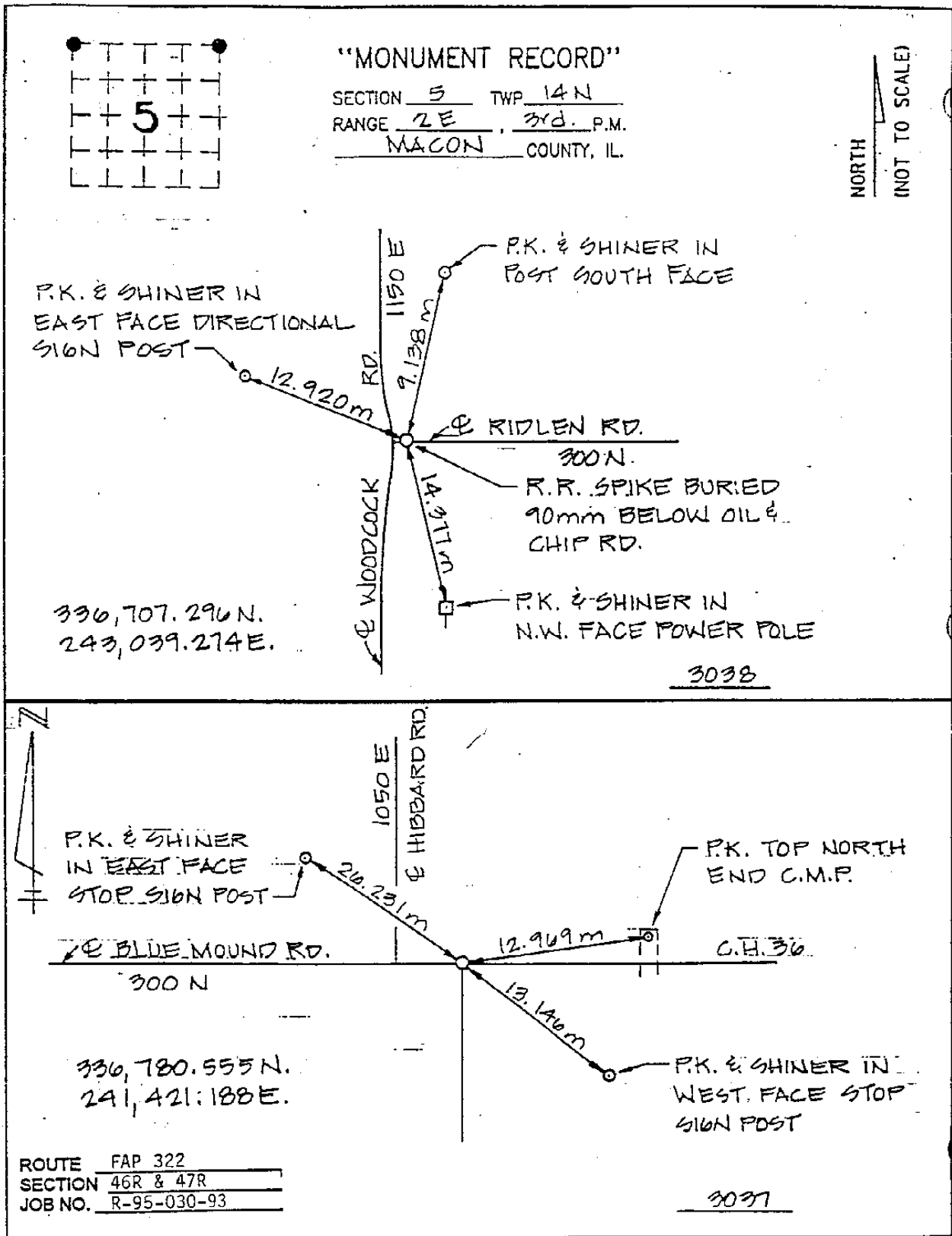
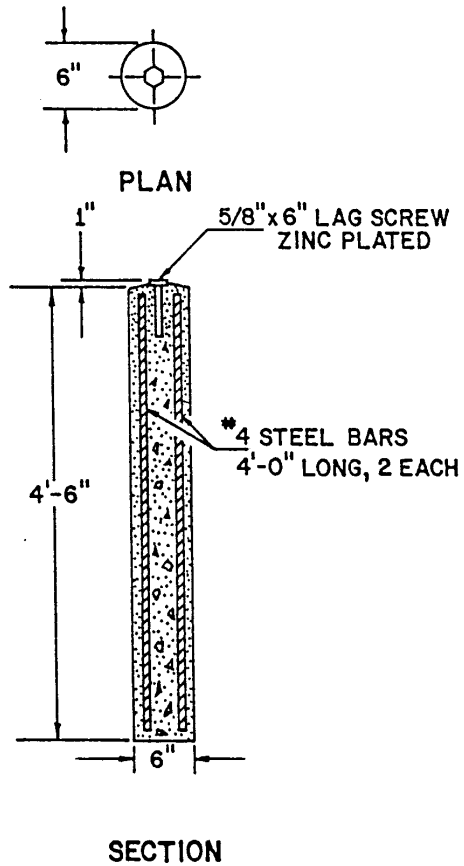


Figure 5.8

**CONCRETE MARKER (U.S. PUBLIC LAND SURVEY MONUMENT)**



**METHOD OF INSTALLATION**

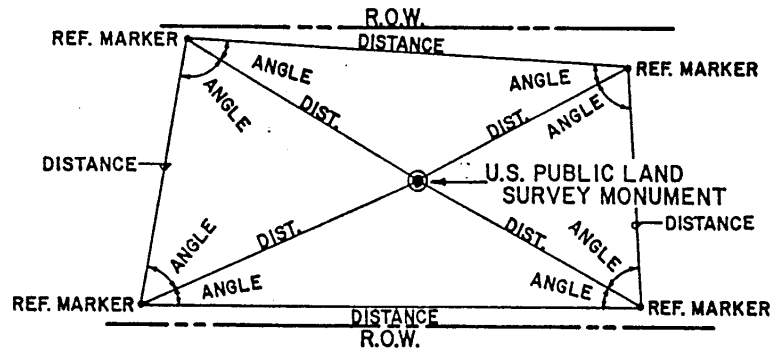
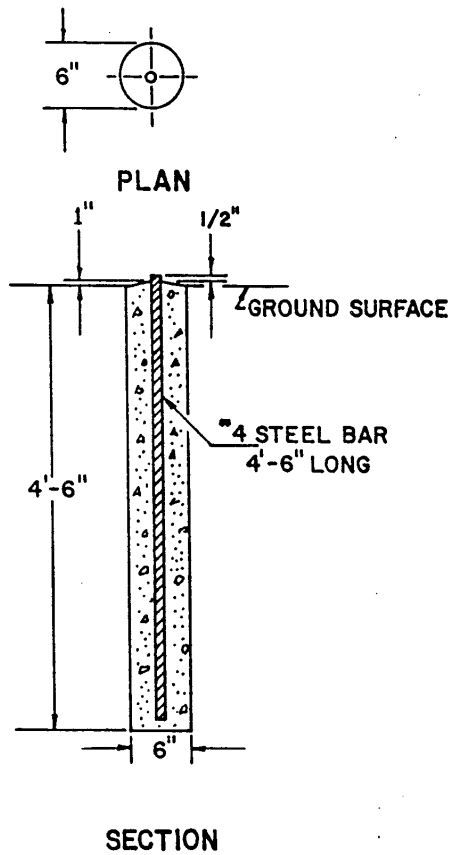
- SET MARKER IF NO USPLS MONUMENT PRESENT.
- SET MARKER IF USPLS MONUMENT IS FIVE FEET OR MORE BELOW FINISHED GRADE.
- UNDER PAVEMENT AND SURFACE COURSE SET TOP AT SUBGRADE ELEVATION.
- UNDER SHOULDERS SET 3" BELOW FINISHED GRADE.
- IN MEDIAN AND OUTSIDE ROADWAY LIMITS SET TOP AT FINISHED GRADE.
- IN CULTIVATED FIELD SET TWO FEET OR MORE BELOW GROUND SURFACE.
- IN FENCE LINE OR PROTECTED AREA SET TOP AT GROUND LEVEL.
- USE CLASS X CONCRETE.

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Figure 5.9



## CONCRETE REFERENCE MARKERS (U.S. PUBLIC LAND SURVEY MONUMENT)



### METHOD OF REFERENCING USPLS MONUMENTS WITHIN R.O.W. AND ON PRIVATE PROPERTY

- USE INSTRUMENT TIES TO NEARBY LAND MARKS (STEEPLES, TOWERS, ETC.)
- IN CULTIVATED FIELD SET TWO FEET OR MORE BELOW GROUND SURFACE.
- IN FENCE LINE OR PROTECTED AREA SET TOP AT GROUND LEVEL.
- CLASS X CONCRETE SHALL BE USED THROUGHOUT.

R. L. SPRECHER - DIST. # 2

Figure 5.10