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## CHAPTER 2

### STANDARDS FOR SURVEYS AND PLATS

- 2.01 General.** All surveys shall be conducted and plats prepared in accordance with the Indiana Survey Standards adopted by the Indiana Society of Professional Land Surveyors and any amendments thereto. In the event of any difference between the Indiana Survey Standards and this Chapter, the stricter requirements shall apply.
- 2.02 Drafting.** All plats submitted for approval shall be prepared by or under the supervision of a professional land surveyor licensed in compliance with the laws of the State of Indiana. All drawings shall be neat, legible, reproducible, reducible, and drawn on a permanent material.
- A. Material.** All plats of major and minor subdivision shall be drawn on Mylar or equivalent material at least 2 mils in thickness.
- B. Lettering, Symbols, & Drafting.** Lettering identifying surveying points or labeling items displayed graphically shall be done using a Leroy or equivalent lettering system, or freehand using plastic lead (EL to E5). Lettering shall be no smaller than 14 point or 1/8" in height and shall be legible when the drawing is reduced 65 percent. Symbols shall be drawn using appropriate templates. Certificates and notations shall be typewritten or drawn using Leroy or equivalent lettering system. Drafting may be done with pen and ink or plastic lead as specified above.
- C. Legend.** All plats shall contain a legend, using, but not limited to the symbols shown in Figure 2-1.

5/8 INCH X 30 INCH REBAR SET  
5/8 INCH REBAR FOUND  
SECTION CORNER MONUMENT SET  
SECTION CORNER FOUND  
OTHER TYPES OF MONUMENTS SET  
OTHER TYPES OF MONUMENTS FOUND  
5/8 INCH X 30 INCH REBAR SET AT ALL OTHER  
PROPERTY CORNERS  
STATE HIGHWAY R/W MONUMENT FOUND

Note: All monuments shall be described in a legend or on the plat near the monument. Additional symbols may be required.

### FIGURE 2-1 LEGEND REQUIREMENTS

- D. Size.** Plats shall be drawn on sheets no larger than 24 inches by 36 inches, and no smaller than 12 inches by 18 inches. Plats may consist of more than one sheet, but each sheet shall be labeled with the name of the subdivision and numbered. In addition, the petition number must also be included.
- E. Copies.** Copies of drawings required to be submitted under the terms of this Chapter shall be blueline or blackline prints and shall be legible.
- F. Layout.** Layout of the sheet should be similar to the example shown in Figure 2-2, except when the configuration of the property prohibits such layout.
- G. Contents.** Each plat shall contain as a minimum the following:
1. Name of subdivision.
  2. North arrow.
  3. Bar Scale.
  4. Title block containing the name and address of the land surveyor or surveying firm which prepared the plat.
  5. Names of roads and adjoining subdivisions with lot designations and title of the plat including plat book and

page number.

6. Location map, location by Section, Township, and Range, or by other Legal Description.
7. If the boundary of the plat is represented by a U.S. Public Survey Section Line, two section corners shall be shown for each section line with bearings and distances to each section corner. Boundary of plat shall be based on accurate traverse with angular and lineal dimensions for secondary (final) approval of plat.
8. If the property involved in the subdivision is located on an existing City/County road and right-of-way is to be dedicated to the City/County by the plat, an area summary in acres or square feet of each lot and right-of-way area, is to be provided. (See examples below.)

Lot 1	14,780 sq. ft.	Lot 2	.339 acres
Lot 2	10,020 sq. ft.	Lot 2	.229 acres
Lot 3	7,632 sq. ft.	Lot 3	.175 acres
R/W	<u>240 sq. ft.</u>	R/W	<u>.006 acres</u>
	33,675 sq. ft.		.749 acres

9. Accurate direction and length in feet and hundredths of feet of each line. Geometrically curved lines shall be identified with sufficient curve data to define the curve. (Curve data include delta angle, radius, chord distance, chord bearing, arc length, tangent length.)

Lines required to be shown include but are not limited to the following:

- a. Plat boundary (heavy solid line).
- b. Right-of-way lines of streets and alleys (solid line). For secondary (final) approval exact location, width, and names of all streets within and adjoining the plat, and exact location and width of all alleys shall be shown.
- c. Easements (dashed line).

- d. Lot lines (solid line).
  - e. Lines indicating easements or lot lines to be vacated by the plat (dashed or dotted line).
- 10. A description of all monuments including a notation as to whether found or set.
  - 11. Accurate distances and bearings from an established monument or property corner to the subdivision benchmark.
  - 12. Distances and bearings for easements shown on the plat which are sufficient to locate said easements.

**2.03 Surveys.** All surveys conducted and graphically represented under the terms of this Ordinance shall comply with the minimum standards contained herein.

- A. **Positional Tolerance.** The relative precision of the survey shall meet or exceed the following: The true horizontal distance between any two points whose positions are stated relative to each other, whether directly or indirectly by calculation, shall not differ from the reported distance by more than 1 part in 5,000 plus 20 feet.
- B. **Point of Beginning.** The point of beginning shall be called out in the description and on the drawing.
- C. **Source of Bearing System.** The source of the bearing system shall be stated (i.e., assumed, magnetic, astronomic) in the description by the bearing on the face of the plat.
- D. **Area of Tract.** The calculated area of the tract in square feet or acres shall be included in the description.
- E. **Ties.** All surveys of unplatted ground shall be tied to at least two section corners. Surveys of platted ground shall be tied to previously platted and monumented points.

**2.04 Monuments, Markers, Benchmarks.** Monuments and markers shall be placed so that their centers shall coincide exactly with the intersection of lines to be marked.

- A. **Monuments.** Monuments shall be set at the following conditions:
1. At the intersection of all lines forming angles in the boundary of a major subdivision.
  2. At the beginning and ending of all curves along street right-of-way lines and at the intersection of street right-of-way lines in major subdivisions.
  3. Those points falling in paved roadway may be represented by road nails or railroad spikes provided a witness monument is set.
- B. **Markers.** Markers or monuments shall be set at the following locations:
1. At the intersection of street right-of-way lines.
  2. At all section corners.
  3. At all points where lot lines intersect curved property lines, either front or rear.
  4. At all angles in property lines of lots.
  5. At all lot corners not otherwise described herein.
  6. At the beginning and ending of all curves along street right-of-way lines.
  7. At all points described in this section in minor subdivisions.
  8. Those points falling in paved roadway may be represented by road nails or railroad spikes provided a witness marker is set.
- C. **Subdivision Benchmarks.** One benchmark shall be set in each major subdivision containing 100 lots or fewer. One additional benchmark shall be set for each additional one-hundred (100) lots or fraction thereof. The location of benchmarks shall be approved by the (City) (County) surveyor.
1. The applicant's land surveyor shall establish subdivision benchmark elevations by a closed level circuit from the

nearest United States Geodetic Survey (USGS) Benchmark.

2. Each subdivision benchmark shall be installed behind the curb-line at an intersection so that the top of the benchmark is level with the top of the curb, unless otherwise permitted by the (City) (County) surveyor.

**D. Subdivision Benchmark Specifications.** Each benchmark shall be precast or poured-in-place concrete with a 28-day compressive strength of 4000 psi and a six (6)-percent air entrapment.

Benchmarks shall be at least 12-inches square by 36-inches deep and shall be marked on top with a three (3)-inch diameter curved-head brass marker set flush with the top of the concrete.

**E. Monument and Witness Monument Specifications.** Monuments shall be precast concrete or concrete poured-in-place with minimum dimensions of four (4)-inches by thirty (30)-inches containing an iron or steel dowel at least twenty (20)-inches long and five-eighths (5/8)-inch in diameter set flush with the top of the monument (e.g., 5/8" x 30" rebar).

**F. Surveyor's Registration Number.** All monuments and markers shall be identified by cap or permanent label carrying the surveyor's registration number.

## **2.05 Subdivision Plats Defined.**

For the purposes of this Ordinance, the following terms shall be used in the presentation of requests for approval of subdivisions of land. Each term represents the graphic layout of the area to be subdivided.

**A. Advisory Plat.** A sketch preparatory to the Preliminary Plat (or Final Plat in the case of a minor subdivision) to enable the subdivider to save time and expense in reaching general agreement with the Plan Commission as to the form of the plat and objectives of these regulations.

**B. Preliminary Subdivision Plat.** The preliminary drawing, or drawings, described in these regulations, indicating the proposed manner, or layout of the subdivision to be submitted to the Plan Commission for approval.

**C. Final Subdivision Plat.** The map of a subdivision to be recorded

with the County Recorder after approval by the Plan Commission, and any accompanying materials as described in these regulations.

**D. Master Preliminary Plat.** That portion of a Preliminary Plat submitted in connection with a multi-phase or phased subdivision application which provides the information and graphics meeting the requirements of this Ordinance for the purposes of implementing an integrated development scheme for all phases of the proposed subdivision.

In all cases the Applicant shall certify the information is an approximation or accurate (needed for Final Approval) presentation. A public hearing shall be held in the case of a Preliminary Plat approval meeting of the Plan Commission; a public hearing is not required for Secondary (Final) Plat approval, said approval can be delegated to the Plan Commission Staff for final approval subject to compliance with conditions specified by the Plan Commission at the public hearing on the Preliminary Plat (Note: For all intents and purposes the approval of the Preliminary Plat with conditions is semi-final approval of the Secondary Plat unless there is a major change in the Preliminary Plat, said major change shall necessitate a new public hearing). Plans submitted to the Plan Commission shall be drawn to a convenient scale of not more than one-hundred (100) feet to an inch (See Figure 2-2.).

## FIGURE 2-2 Graphic Representation of Subdivision Plan

### 2.06 Preliminary Plat.

- A. **Preparation.** The preliminary plat shall be prepared by a licensed land surveyor at a convenient scale of not more than one hundred (100) feet to the inch, may be prepared in pen or pencil and the sheets shall be numbered in sequence if more than one (1) sheet is used and shall be of such size as is acceptable for filing in the office of the County Recorder, but shall not be larger than twenty-four (24) by thirty-six (36) inches (See Figure 2-3). (It should be noted that the map prepared for the preliminary plat may also be used for the final subdivision plat and, therefore, should be drawn on tracing cloth or reproducible Mylar, preparation in pencil will make required changes and additions easier).
- B. **Features.** The preliminary plat shall show the following:
1. The location of the property with respect to surrounding property and streets, the names of all contiguous property owners of record, or the names of adjoining developments; and, the names of adjoining streets.
  2. The location and dimensions of all boundary lines of the property to be expressed in feet and decimals of a foot.
  3. The location of existing streets, easements, water bodies, streams, and other pertinent features such as swamps, flood plains, railroads, buildings, parks, cemeteries, drainage ditches, bridges, and topography (at the same scale as the advisory plat).
  4. The location and width of all existing and proposed streets, alleys, and other public ways and their rights-of-way, and

of easements and building set-back lines, utilities, fire hydrants and storm water facilities.

- 5.** The locations, dimensions, bearings and areas of all proposed or existing lots.
- 6.** The location and dimensions of all property proposed to be set aside for park or playground use, or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation.
- 7.** The name and address of the owner or owners of land to be subdivided, the name and address of the subdivider if other than the owner, and the name and registration number of the land surveyor.
- 8.** The date of the map, approximate true north point, scale, and title of the subdivision.
- 9.** Sufficient data acceptable to the City/County Engineer, or appropriate authority to determine readily the location, bearing, and length of all lines, and to reproduce such lines upon the ground; also, the location of all proposed monuments.
- 10.** Names of the subdivision and all new streets subject to approval by the Commission.

**FIGURE 2-3**  
**Graphic Representation of Preliminary Plat**

- 11.** Indication of the use of any lot (single-family, two-family, multi-family, townhouse) and all uses other than residential proposed by the subdivider.
- 12.** Blocks shall be consecutively numbered or lettered in alphabetical order. The blocks in numbered additions to subdivisions bearing the same name shall be numbered or lettered consecutively throughout the several additions.
- 13.** All lots in each block shall be consecutively numbered. Outlots shall be lettered in alphabetical order. If blocks are numbered or lettered, outlots shall be lettered in alphabetical order within each block.
- 14.** All information required in the Advisory Plat should also be shown on the preliminary plat, and the following notation shall also be shown:
  - (i) Explanation of drainage easements, if any.
  - (ii) Explanation of site easements, if any.
  - (iii) Explanation of site reservations, if any.
  - (iv) Endorsement of owner, as follows:

**2.07 Construction Plans.**

General Construction Plans shall be prepared for all required improvements. Plans shall be drawn at a scale of no more than one (1) inch equals fifty (50) feet, and map sheets shall be of the same size as the preliminary plat. The following shall be shown:

1. Profiles showing existing and proposed elevations lines of all streets. Where a proposed street intersects an existing street or streets, the elevation along the center line of the existing street or streets, within one hundred (100) feet of the intersection, shall be shown. Radii of all curves, lengths of tangents, and central angles on all streets.
2. The Commission may require a topography map where steep slopes exist, that cross-sections of all proposed streets at one-hundred (100) foot stations and shown at five (5) points as follows: on a line at right angles to the center line of the street, and all elevation points shall be at the center line of the street, each property line, and points twenty-five (25) feet inside each property line.
3. Plans and profiles showing the locations and typical cross-section of street pavements including curbs and gutters, sidewalks, drainage easements, servitude, right-of-way, manholes, and catch basins, the locations of street trees, street lighting standards, and street signs; the location, size, and invert elevations of existing and proposed sanitary sewers, storm water drains, and fire hydrants, showing connection to any existing or proposed utility systems; and exact location and size of all water, and easements for utilities or structures. Letters of approval shall be obtained from the City Board of Works and the County Engineer stating that plan is acceptable or conditions stated to make it so.
4. Location, size elevation, and other appropriate description of any existing facilities or utilities, including, but not limited to, existing streets, sewers, drains, water mains, easements, water bodies, streams, flood plains, and other pertinent features such as swamps, railroads, buildings, features noted on the Official Map or Comprehensive Plan at the point of connection to proposed facilities and utilities within the subdivision, and each tree with a diameter of eight (8) inches or more, measured four (4) feet above

ground level; the water elevations of adjoining lakes or streams at the date of the survey, and the approximate high-and low- water elevations of such lakes or streams; all elevations shall be referred to the United States Geodetic Survey (USGS) datum plane. If the subdivision borders a lake, river, or stream, the distances and bearings of a meander line established not less than twenty (20) feet back from the ordinary high-water mark of such waterways shall be shown.

5. Topography at the same scale as the sketch plan with a contour interval of two (2) feet, referred to the sea-level datum. All data provided shall be the latest applicable USGS data and should be so noted on the plat.
6. All specifications and references required by the (City) (County's) construction standards and specifications, including a site-grading plan for the entire subdivision.
7. Notation of approval as follows:

Owner\_\_\_\_\_Date\_\_\_\_\_

Commission President\_\_\_\_\_Date\_\_\_\_\_

8. Title, name, address, signature, registration number and seal of the professional engineer and/or surveyor, and date, including revision dates.

## **2.08 Final Subdivision Plat.**

**A. Preparation.** The final subdivision plat shall be presented in india ink on tracing cloth or reproducible Mylar at an appropriate scale and contain the same information as on the preliminary plat, except for any changes or additions required by the conditions of primary approval. The preliminary plat may be used as the final subdivision plat if it meets these requirements and is revised in accordance with the Commission's approval. The final subdivision plat shall be prepared by a land surveyor licensed by the State.

**B. Features.** All revision dates must be shown as well as the following:

1. Notation of any self-imposed restrictions, and locations of any building lines proposed to be established in this manner, if required by the Commission in accordance with these regulations, and;
2. All monuments erected, corners, and other points established in the field shall be shown and noted in their places on the plat. The legend for metal monuments shall indicate the kind of metal, the diameter, length, and weight per lineal foot of the monuments.

**Page 12 concludes Chapter 2**