

## What is a topographic survey?

A topographic survey depicts the topography or the “lay of the land” of a specific parcel(s). Elevations are taken with surveying equipment at several points on the property and plotted on paper. Lines, called “contours,” are drawn to connect identical points of elevations. The process of drawing the contours is similar to a connect-the-dots puzzle. Contour lines are shown as assumed datum or in USGS datum.

Contours using assumed datum are based upon elevations at a given point **assumed** to be 100. The elevation of 100 is used to provide a reference for other elevations at the site. The contours are numbered according to the number of feet of change from 100. For example, if a starting point elevation at a stake on the property is assumed to be 100, then a 10’ rise in the property above the stake would be shown as contour 110 and a low area whose elevation is 4’ below the stake would be shown as 96.

Contours shown in USGS datum are numbered according to United States Geological Survey (USGS) information in number of feet above sea level. For example, a point on a property is referenced to a known elevation (benchmark), such as 750.0 feet above sea level. Benchmarks may be found as iron rods on telephone poles or as concrete markers or metal plates on the ground. All elevation points taken on a property are referenced

to the known elevation. A 10’ rise in the property using USGS datum would be shown as contour 760.0 and a low area with an elevation 4’ below the known elevation would be 746.0 feet above sea level.

## When is a topographic survey in assumed datum allowed?

Contour lines often are numbered using assumed elevations when prepared for septic plans and additions to show the proposed changes in grade. USGS datum is preferable for grading proposed for new homes.

## When is a topographic survey in USGS datum required?

Projects proposed to be constructed or located in a floodplain or in a mapped floodplain are required to have topographic survey data in USGS datum. USGS datum allows the elevations mapped on the property to be coordinated with elevations for lakes, streams, and floodplains.

A topographic survey in USGS datum must be prepared by an Illinois licensed land surveyor or registered professional engineer.

## Floodplain topographic survey requirements.

The following information must be included on a site topographic survey prior to review:

- 1) All property boundaries and dimensions.
- 2) Contour intervals of one foot (1’) referenced to United States Geological Survey (USGS) datum.  
*( Spot elevations at scattered locations on the lot are NOT acceptable for floodplain determinations.)*
- 3) The regulatory floodplain contour line must be clearly denoted as the 100-year floodplain.
- 4) The **original** signature and seal of an engineer or surveyor registered by the State of Illinois. (Copies of signatures and seals are not acceptable.)
- 5) Three (3) topographic surveys should be submitted for each review.

## What are the restrictions if there is floodplain on my property?

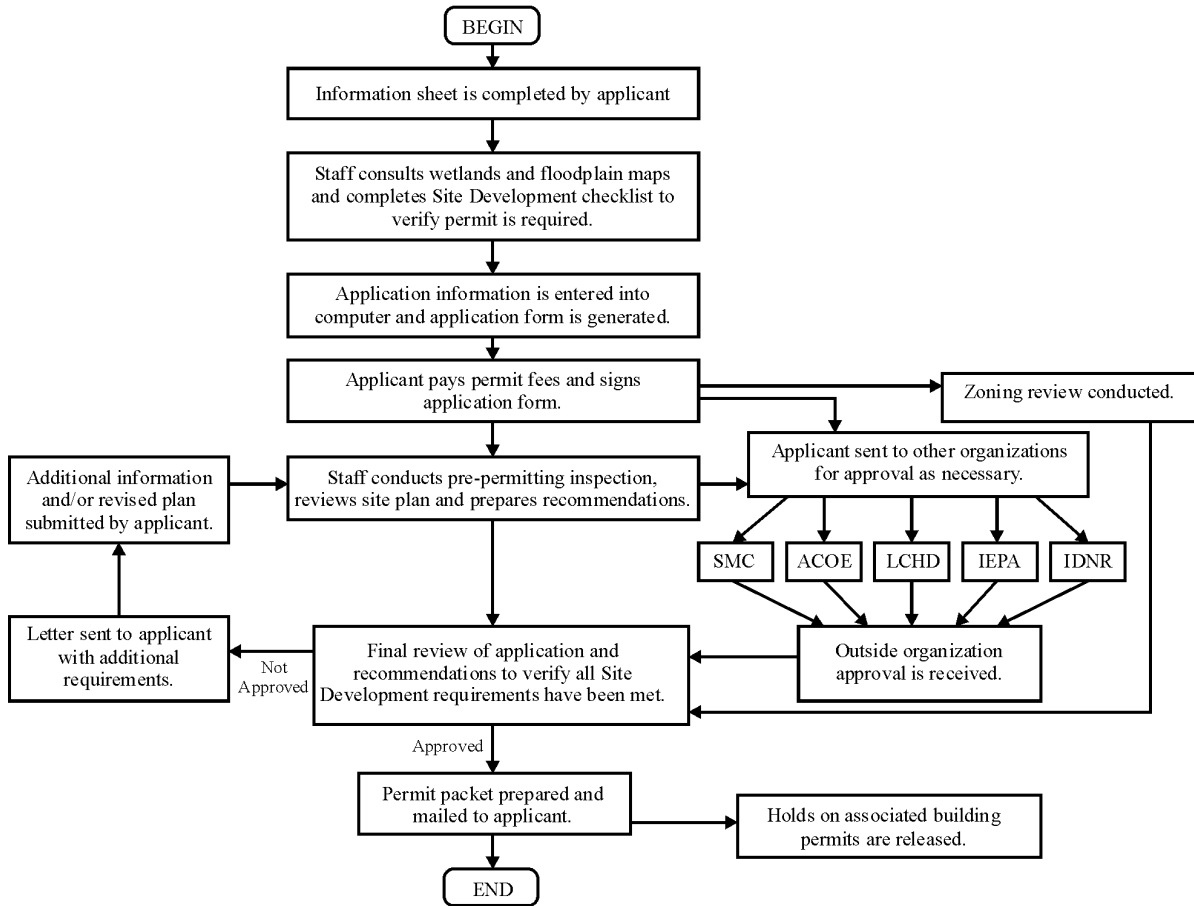
Federal, state, and county regulations apply to properties containing floodplains. Contact the E&ES Division for additional information on unincorporated parcels. (For incorporated properties, contact the appropriate municipality.).

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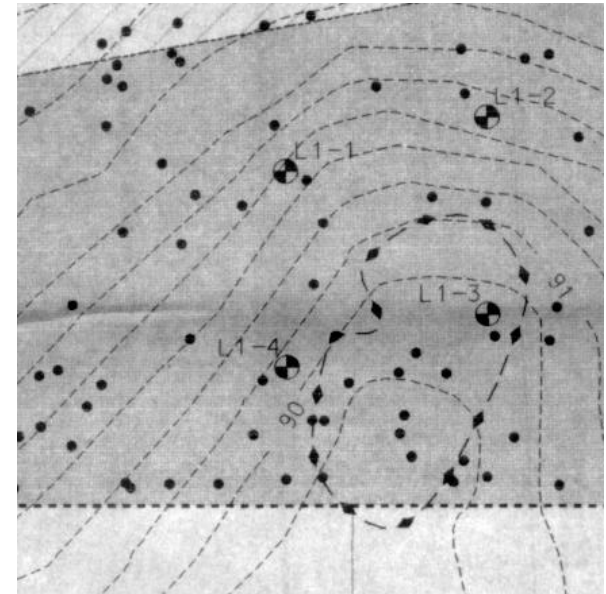
## Additional Information

- Engineering & Environmental Services Division  
**847/377-2600.**

## Site Development Permit Process



# Topographic Surveys



This brochure contains general guidelines applicable only to Site Development permits. Specific requirements depend upon the project and the regulations of the Lake County Unified Development Ordinance (UDO). Projects are reviewed to determine code compliance upon permit application. Compliance with Site Development requirements does not preclude the need for additional approvals such as zoning, building, and Lake County Health Department.

Department of Planning,  
Building and Development



**LakeCounty**

**Engineering and Environmental  
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