

## CHAPTER VIII SURVEYING STANDARDS

### **ARTICLE 8.1 SURVEYING STANDARDS**

#### **SECTION 8.1.100 SURVEYING PROFILES:**

1. A profile of each proposed street or road shall be submitted using current survey standards and scale as approved by the County Surveyor. The drawings shall include the following features:
  - a. Existing ground profile along the centerline shown in black India ink with dashed line. Such profile will include the lowest elevation of creeks or canyons as they cross the centerline as well as the high point of ridges as they cross the centerline. The proposed name of the street or road shall be clearly indicated. Profile may be taken from accurate contour lines of the preliminary plan when profile accompanies the preliminary plan; and
  - b. Proposed centerline grades shown by a solid dark line.
  
2. Profile Graphic Standards:
  - a. Grades shall be labeled on all tangents and vertical curves, data to be expressed to nearest 0.10% of grade.
  - b. Stations shall be numbered along the bottom of each profile at each 100 foot station.
  - c. Stations of intersecting streets shall be shown on the profile.
  - d. Elevations shall be numbered every 10 feet at each end of the profile.
  - e. Vertical curves shall be shown by a solid line and labeled with the length of the curve.
  - f. Title of the profile shall be placed in the upper left corner of the profile sheet including all of the following:
    - i. Plat name;
    - ii. Identification as a profile sheet;
    - iii. Scale, horizontal and vertical;
    - iv. Vertical datum; and
    - v. Stamp of surveyor or engineer preparing the profile.
  - g. Approximate locations and elevations of culverts, drain pipes, or utility pipes or lines buried in the right-of-way shall be shown.

#### **SECTION 8.1.125 SURVEY CROSS SECTIONS:**

1. Cross-sections for each proposed street or road shall be submitted using current survey standards. Cross-sections shall be shown at:
  - a. Each and every 100 foot-station;
  - b. Intermediate stations where there is a distinct or radical change from cut to fill;
  - c. Intermediate points of critical concern, such as at extremely deep fills, high cuts or at existing or proposed driveways or buildings;
  - d. The widest part of a vehicle turnaround;
  - e. Existing ground elevations, shown with dashed line. When cross-sections are for preliminary plat the existing ground may be scaled from accurate 5 foot contours on the preliminary plan;
  - f. Proposed subgrade and finished grade of roadway, ditches, cuts and fills, conforming to the standard cross-sections must conform to Section 7.2.200; and
  - g. Location of approximate depth of culverts, drainage pipes or utility pipes or lines that may be buried.

2. Cross-Section Graphic Standards:
  - a. Existing centerline elevation shown directly beneath centerline of cross-section.
  - b. Station designation shown below centerline elevation;
  - c. Original ground elevations shall be shown at least 30 feet outside required right-of-way;
  - d. Title of cross-sections shall be placed in upper left corner of the cross-section sheet including:
    - i. Plat name;
    - ii. Identification as cross-section sheet;
    - iii. Scale, horizontal and vertical;
    - iv. Vertical datum used; and
    - v. Stamp of surveyor or engineer preparing the cross-section.
  - e. Overlapping of cross-sections will be avoided when possible.

**SECTION 8.1.150 SURVEY DIMENSIONS:** The following methods and dimensions shall be the minimum requirements on final plats and shall be shown on the face of the map itself.

1. Plat Boundaries:
  - a. Bearings of line to the nearest second; and
  - b. Distance to the nearest one-hundredth of a foot.
2. Centerline of Streets:
  - a. Bearings to the nearest second; and
  - b. Distance to the nearest one-hundredth of a foot.
3. Lot Lines:
  - a. Bearings to the nearest second; and
  - b. Distance to the nearest one-hundredth of a foot.
4. Curve Portions of a Lot Line:
  - a. Central angle to the nearest second;
  - b. Radius to the nearest one-hundredth of a foot;
  - c. Arc Length to the nearest one hundredth of a foot;
  - d. Long Chord bearing to the nearest second;
  - e. Long Chord distance to the nearest one hundredth of a foot.
5. Street Centerline Curve Data:
  - a. Central angle to the nearest second;
  - b. Radius to the nearest one hundredth of a foot;
  - c. Arc Length to the nearest one hundredth of a foot ;
  - d. Long Chord bearing to the nearest second; and
  - e. Long Chord distance to the nearest one hundredth of a foot.
6. Bearings and angles shall be shown with symbols as indicated below:
  - a. Degree Symbol        °
  - b. Minute symbol       ‘
  - c. Second symbol       “
7. Linear dimensions shown as in most common survey practice with numbers and decimals only, avoiding excessive and unnecessary use of dimensional arrows.

**SECTION 8.1.200 SURVEY CALCULATIONS:** The following calculations shall be submitted with the final plat to the County Surveyor:

1. Coordinates and closures (all points on):
  - a. Plat boundary;

- b. Street centerline;
  - c. Block boundary; and
  - d. Individual Lot and all other monuments.
2. Total acreage within the plat boundary;
  3. Specifications for calculations sheets:
    - a. All calculations will be properly indexed;
    - b. Calculation sheets will be either 8 ½” x 11”; [or]
    - c. 8 ½” x 14”.
    - d. no unnecessary printed, lettered, or written information shall appear on calculation sheets except that which has to do with the calculation of the survey of the subdivision.
  4. Traverse sheets shall contain, in the following order:
    - a. Point # or lot corner, etc;
    - b. Angle (when appropriate);
    - c. Bearing;
    - d. Horizontal distance;
    - e. North coordinate; and
    - f. East coordinate.
  5. Minus coordinates will not be accepted.
  6. One set of coordinates will be used throughout the plat.
  7. Digital copies in the above described format may be accepted by the County Surveyor if properly indexed, labeled, and explained.

**SECTION 8.1.225 STANDARDS OF SURVEY ACCURACY:** The survey for the plat of the subdivision or partition shall be of such accuracy that the linear error of closure shall not exceed one foot in 10,000 feet and shall conform to all other minimum requirements of State law.

**SECTION 8.1.250 BENCHMARKS:**

1. At least one temporary benchmark shall be established within certain subdivisions (See Subsection 7 below)
2. Elevation datum shall be based ~~on mean sea level based~~ on the currently accepted datum.
3. Benchmarks shall be of such durable construction that the elevation is not likely to change unless the mark is destroyed. See specifications in § 6.2.650(5)(v)..
4. The permanent benchmark from which elevation is obtained shall be described in the survey calculations to be submitted with the preliminary plan or tentative map:’
  - a. Name or letter designation;
  - b. Published elevation;
  - c. Name of agency establishing mark; and
  - d. Location, including narrative and diagram.
5. A benchmark based on the current vertical data from a permanently established and published benchmark shall be required for subdivisions:
  - a. Within an urban growth boundary;
  - b. Within one-half mile of a city limits;
  - c. Within one-half mile of an urban growth boundary;
  - d. In a designated floodplain; or
  - e. In subdivisions where extensive public quasi-public sewer systems are planned.

6. Method for the establishment of this benchmark shall be submitted to the County Surveyor for review and approval.

**SECTION 8.1.275 RESPONSIBILITY FOR DETERMINING COMPLIANCE WITH THIS CHAPTER:** The Coos County Surveyor shall be responsible for determining compliance with the provisions of this Chapter and, as appropriate, provide a written statement to the Planning Director indicating that the provisions of this Chapter have been satisfied with respect to an application under review.