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PUBLIC RESOURCES CODE - PRC

DIVISION 8. SURVEYING AND MAPPING [8801 - 8902] *(Division 8 added by Stats. 1953, Ch. 108.)*

CHAPTER 1. California Coordinate System [8801 - 8819] *(Chapter 1 added by Stats. 1953, Ch. 108.)*

8801. (a) The system of plane coordinates that has been established by the United States Coast and Geodetic Survey for defining and stating the positions or locations of points on the surface of the earth within the State of California is based on the North American Datum of 1927 and is identified as the "California Coordinate System." After January 1, 1987, this system shall be known as the "California Coordinate System of 1927."

(b) The system of plane coordinates which has been established by the National Geodetic Survey for defining and stating the positions or locations of points on the surface of the earth within the State of California and which is based on the North American Datum of 1983 shall be known as the "California Coordinate System of 1983."

(c) As used in this chapter:

(1) "NAD27" means the North American Datum of 1927.

(2) "CCS27" means the California Coordinate System of 1927.

(3) "NAD83" means the North American Datum of 1983.

(4) "CCS83" means the California Coordinate System of 1983.

(5) "USC&GS" means the United States Coast and Geodetic Survey.

(6) "NGS" means the National Geodetic Survey or its successor.

(7) "FGCS" means the Federal Geodetic Control Subcommittee or its successor.

(8) "CSRC" means the California Spatial Reference Center or its successor.

(9) "CSRN" means the California Spatial Reference Network, as defined by Chapter 3 (commencing with Section 8850), "Geodetic Datums and the California Spatial Reference Network."

(10) "GPS" means Global Positioning System and includes other, similar space-based systems.

(11) "FGDC" means the Federal Geographic Data Committee or its successor.

(d) The use of the term "State Plane Coordinates" refers only to CCS27 and CCS83 coordinates.

(Amended by Stats. 2005, Ch. 158, Sec. 29.2. Effective January 1, 2006.)

8802. For CCS27, the state is divided into seven zones. For CCS83, the state is divided into six zones. Zone 7 of CCS27, which encompasses Los Angeles County, is eliminated and the area is included in Zone 5 of CCS83.

Each zone of CCS27 is a Lambert conformal conic projection based on Clarke's Spheroid of 1866, which is the basis of NAD27. The points of control of zones one to six, inclusive, bear the coordinates: Northing (y) = 000.00 feet and Easting (x) = 2,000,000 feet. The point of control of Zone 7 bears the coordinates: Northing (y) = 4,160,926.74 feet and Easting (x) = 4,186,692.58 feet.

Each zone of CCS83 is a Lambert conformal conic projection based on the Geodetic Reference System of 1980, which is the basis of NAD83. The point of control of each of the six zones bear the coordinates: Northing (y) = 500,000 meters and Easting (x) = 2,000,000 meters.

The area included in the following counties constitutes Zone 1 of CCS27 and CCS83: Del Norte, Humboldt, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, and Trinity.

The area included in the following counties constitutes Zone 2 of CCS27 and CCS83: Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lake, Mendocino, Napa, Nevada, Placer, Sacramento, Sierra, Solano, Sonoma, Sutter, Yolo, and

Yuba.

The area included in the following counties constitutes Zone 3 of CCS27 and CCS83: Alameda, Calaveras, Contra Costa, Madera, Marin, Mariposa, Merced, Mono, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Stanislaus, and Tuolumne.

The area included in the following counties constitutes Zone 4 of CCS27 and CCS83: Fresno, Inyo, Kings, Monterey, San Benito, and Tulare.

The area included in the following counties and Channel Islands constitutes Zone 5 of CCS27: Kern, San Bernardino, San Luis Obispo, Santa Barbara (excepting Santa Barbara Island), and Ventura (excepting San Nicholas Island) and the Channel Islands of Santa Cruz, Santa Rosa, San Miguel, and Anacapa.

The area included in the following counties and Channel Islands constitutes Zone 5 of CCS83: Kern, Los Angeles (excepting San Clemente and Santa Catalina Islands), San Bernardino, San Luis Obispo, Santa Barbara (excepting Santa Barbara Island), and Ventura (excepting San Nicholas Island) and the Channel Islands of Santa Cruz, Santa Rosa, San Miguel, and Anacapa.

The area included in the following counties and Channel Islands constitutes Zone 6 of CCS27 and CCS83: Imperial, Orange, Riverside, and San Diego and the Channel Islands of San Clemente, Santa Catalina, Santa Barbara, and San Nicholas.

The area included in Los Angeles County constitutes Zone 7 of CCS27.

(Amended by Stats. 2005, Ch. 158, Sec. 29.3. Effective January 1, 2006.)

8803. Zone 1 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 1 or CCS83, Zone 1."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 1 and CCS83, Zone 1 are at north latitudes 40 degrees 00 minutes and 41 degrees 40 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 122 degrees 00 minutes west longitude, with the parallel 39 degrees 20 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 3.)

8804. Zone 2 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 2 or CCS83, Zone 2."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 2 and CCS83, Zone 2 are at north latitudes 38 degrees 20 minutes and 39 degrees 50 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 122 degrees 00 minutes west longitude, with the parallel 37 degrees 40 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 4.)

8805. Zone 3 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 3 or CCS83, Zone 3."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 3 and CCS83, Zone 3 are at north latitudes 37 degrees 04 minutes and 38 degrees 26 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 120 degrees 30 minutes west longitude, with the parallel 36 degrees 30 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 5.)

8806. Zone 4 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 4 or CCS83, Zone 4."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 4 and CCS83, Zone 4 are at north latitudes 36 degrees 00 minutes and 37 degrees 15 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 119 degrees 00 minutes west longitude, with the parallel 35 degrees 20 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 6.)

8807. Zone 5 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 5 or CCS83, Zone 5."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 5 and CCS83, Zone 5 are at north latitudes 34 degrees 02 minutes and 35 degrees 28 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 118 degrees 00 minutes west longitude, with the parallel 33 degrees 30 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 7.)

8808. Zone 6 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 6 or CCS83, Zone 6."

On their respective spheroids of reference: (1) the standard parallels of CCS27, Zone 6 and CCS83, Zone 6 are at north latitudes 32 degrees 47 minutes and 33 degrees 53 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 116 degrees 15 minutes west longitude, with the parallel 32 degrees 10 minutes north latitude.

(Amended by Stats. 1986, Ch. 611, Sec. 8.)

8809. Zone 7 coordinates shall be named, and, on any map on which they are used, they shall be designated as "CCS27, Zone 7."

On its respective spheroid of reference: (1) the standard parallels of CCS27, Zone 7 are at north latitudes 33 degrees 52 minutes and 34 degrees 25 minutes, along which parallels the scale shall be exact; and (2) the point of control of coordinates is at the intersection of the zone's central meridian, which is at 118 degrees 20 minutes west longitude, with the parallel 34 degrees 08 minutes north latitude.

(Amended by Stats. 2005, Ch. 158, Sec. 29.4. Effective January 1, 2006.)

8810. The plane coordinates of a point on the earth's surface, to be used in expressing the position or location of the point in the appropriate zone of CCS27 or CCS83, shall consist of two distances, expressed in feet and decimals of a foot or meters and decimals of a meter. When the values are expressed in feet, the "U.S. Survey foot," (one foot = 1200/3937 meters) shall be used as the standard foot for CCS27 and CCS83. One of these distances, to be known as the "East x-coordinate," shall give the distance east of the Y axis; the other, to be known as the "North y-coordinate," shall give the distance north of the X axis. The Y axis of any zone shall be parallel with the central meridian of that zone. The X axis of any zone shall be at right angles to the central meridian of that zone.

(Amended by Stats. 1986, Ch. 611, Sec. 10.)

8811. If the survey of any parcel of land extends from one coordinate zone into another, the positions of all points delineated upon the map thereof may be referred to either of these zones. The zone which is used shall be specifically named in the title upon the map.

(Added by renumbering Section 8812 by Stats. 2002, Ch. 454, Sec. 26. Effective January 1, 2003.)

8812. Prior to January 1, 2000, state plane coordinates shall be based on, or derived from, the plane coordinates of monumented second order or better horizontal control stations that have been published by the USC&GS or NGS. Any survey or map that uses those coordinates shall be based on, and show, established field-observed direct connections to at least two stations of corresponding or better accuracy whose credentials are based upon published stations of the USC&GS or NGS. The geodetic positions of CCS27 and CCS83 stations that are used to increase the density of control and that purport to be of second order or better accuracy shall have been surveyed in conformity with the applicable survey standards and specifications in effect at the time of the survey as defined by the FGCS.

(Added by Stats. 2002, Ch. 454, Sec. 27. Effective January 1, 2003.)

8813. After December 31, 1999, and prior to January 1, 2006, any survey or map that uses state plane coordinates shall be based on, and show, field-observed direct connections to at least two horizontal reference stations that are one of the following:

(a) Included in the CSRN.

(b) Located outside the State of California and meet all the requirements for inclusion in the CSRN, except for the requirement that they be inside California.

(c) Shown on a subdivision map, record of survey, or a map filed with the county surveyor by a public officer and whose horizontal positions have been determined by Global Positioning System survey methods in accordance with

first order or better FGCS standards and specifications and whose state plane coordinates are based on field-observed direct, nontrivial connections to at least two stations that are included in subdivision (a) or (b).

(Amended by Stats. 2005, Ch. 158, Sec. 29.5. Effective January 1, 2006.)

8813.1. After December 31, 2005, any survey that uses or establishes a CCS83 value or values shall meet all of the following requirements:

(a) The survey shall be referenced to and shall have field-observed statistically independent connections to one or more horizontal reference stations that is or are one of the following:

(1) CSRN station.

(2) Geodetic control station located outside of the State of California that meets all the requirements for inclusion in the CSRN except that the station is outside California.

(3) Existing CCS83 station that:

(A) Is shown on a map filed with the applicable county surveyor by a public officer, subdivision map, corner record, or record of survey.

(B) Meets all the requirements for inclusion in the CSRN, except that the station and its data are not published by NGS or CSRC.

(C) Has an accuracy, conforming to the applicable CSRN requirements, stated for the station's value.

(4) Existing CCS83 station that:

(A) Is shown on a public map or document that is compiled and maintained by the applicable county surveyor.

(B) Meets all the requirements for inclusion in the CSRN, except that the station and its data are not published by NGS or CSRC.

(C) Has an accuracy, conforming to the applicable CSRN requirements, stated for the station's value.

(b) If an accuracy is to be claimed for the CCS83 value or values established, the claimed accuracy shall be an accuracy standard published by FGDC or FGCS.

(Added by Stats. 2005, Ch. 158, Sec. 29.6. Effective January 1, 2006.)

8813.2. After December 31, 2005, if an accuracy is claimed for a CCS83 value or values, the survey that established the value or values shall be documented on a map, record of survey, corner record, or other document that includes, in addition to other requirements in this chapter, the following:

(a) For each CCS83 station, the resultant CCS83 value or values.

(b) The FGDC or FGCS accuracy standard of the CCS83 value or values established. FGDC accuracies shall be identified as either a local or network accuracy.

(c) Additional written data that justifies the FGDC or FGCS accuracy standard shown. Such additional written data shall include observation equipment, control diagram including required field-observed statistically independent connection or connections, adjustment methodology and software used, a summary of the procedures used or a reference to published commonly accepted procedural specifications, final residuals or closures, and other data essential for others to evaluate the survey.

(Added by Stats. 2005, Ch. 158, Sec. 29.7. Effective January 1, 2006.)

8813.3. (a) After December 31, 2005, when a survey that uses or establishes a CCS83 value or values is shown on any document, the station or stations to which the CCS83 value or values are referenced and connected and the CCS83 value or values and the published or stated accuracy or accuracies of that reference station or stations shall be shown also on the document.

(b) If a CCS83 survey begins before January 1, 2006, and is not completed by that date, the CCS83 survey may be completed in accordance with Sections 8813 and 8815.4 of this chapter or Sections 8813.1, 8813.2, and 8813.3 of this chapter, at the surveyor's option. All other applicable provisions of this chapter remain applicable.

(Added by Stats. 2005, Ch. 158, Sec. 29.8. Effective January 1, 2006.)

8814. State plane coordinates may be used for property identification on any map, survey, conveyance, or other instrument which delineates or affects the title to real property or which delineates, describes, or refers to the property, or any part thereof. However, to constitute, when recorded, constructive notice thereof under the recording laws, the delineating, describing, or referring to the property, or part thereof, shall also refer to data

appearing of record in any office, the records of which constitute constructive notice under the recording laws. That record data shall be sufficient to identify the property without recourse to those coordinates, and in case of conflict between them, the references to that recorded data shall be controlling for the purpose of determining constructive notice under the recording laws.

(Amended by Stats. 1986, Ch. 611, Sec. 13.)

8815. The use of the term "California Coordinate System" on any map or document or in any field notes shall be suffixed either with "27" (shown as "CCS27") for coordinates based on NAD27 or with "83" (shown as "CCS83") for coordinates based on NAD83.

(Amended by Stats. 1986, Ch. 611, Sec. 14.)

8815.1. When CCS83 coordinates are shown on any map, corner record, or other document, the map, corner record, or document shall state the epoch (date), in a decimal year format to two decimal places, that is the basis of the coordinate values shown. The epoch shall be shown on the map, corner record, or other document by an appropriate note on the map, corner record, or document or by adding a suffix in parentheses after CCS83 that states the epoch; examples, "CCS83 (1991.35)," "CCS83 (2002.00)," and so forth.

(Amended by Stats. 2005, Ch. 158, Sec. 29.9. Effective January 1, 2006.)

8815.2. The epoch for a survey using CCS83 coordinate shall be the published NGS or CSRC epoch of a published coordinate for a controlling station used for that survey. Such surveys performed after December 31, 1999, shall be based on the "1991.35" epoch or a subsequent published NGS or CSRC epoch.

(Amended by Stats. 2005, Ch. 158, Sec. 29.10. Effective January 1, 2006.)

8815.3. When the published epochs of the controlling stations for a survey using CCS83 coordinates are not the same, appropriate adjustments shall be made to the horizontal positions of controlling stations so that the coordinates of all the controlling stations are consistent. These adjustments in the horizontal positions of controlling stations shall be made in accordance with procedures and values published by the NGS or CSRC.

(Amended by Stats. 2002, Ch. 454, Sec. 34. Effective January 1, 2003.)

8815.4. When a purported order of accuracy of second order or better is shown for CCS83 coordinate values on any map, corner record, or other document prior to January 1, 2006, that map, corner record, or other document shall use the order of accuracy as defined by the FGCS. If an FGCS order of accuracy is claimed for a survey or a map, it shall be justified by additional written data that shows equipment, procedures, closures, adjustments, and a control diagram.

(Amended by Stats. 2005, Ch. 158, Sec. 29.11. Effective January 1, 2006.)

8815.5. When CCS83 coordinates are shown on any map, corner record, or record of survey, a mapping angle, combined grid factor, and the elevation used to determine the combined grid factor shall be shown on the map, corner record, or record of survey for at least one representative point.

(Added by Stats. 2005, Ch. 158, Sec. 29.12. Effective January 1, 2006.)

8816. The use of the State Plane Coordinates by any person, corporation, or governmental agency engaged in land surveying or mapping is optional.

(Amended by Stats. 1986, Ch. 611, Sec. 15.)

8817. Prior to January 1, 1995, use of State Plane Coordinates for new projects may be based either on CCS27 or CCS83. On or after January 1, 1995, when State Plane Coordinates are used on new surveys and new mapping projects, the use shall be limited to CCS83. However, nothing in this section shall preclude a survey from retracement of a CCS27 survey.

(Amended by Stats. 2002, Ch. 454, Sec. 37. Effective January 1, 2003.)

8818. This chapter does not impair or invalidate land titles, legal descriptions, or jurisdictional or land boundaries and, further, this chapter does not impair or invalidate references to, or the use of, CCS 27 coordinates, except as provided in Section 8817.

(Added by Stats. 1986, Ch. 611, Sec. 17.)

8819. This chapter does not prohibit the use of new surveying technologies or techniques for which FGCS specifications or other accepted specifications have not yet been published.

(Amended by Stats. 2005, Ch. 158, Sec. 29.13. Effective January 1, 2006.)