PUBLIC RESOURCES CODE
SECTION 8801-8819

SURVEYING AND MAPPING - CALIFORNIA COORDINATE SYSTEM

8801. (a) The system of plane coordinates which 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.
(7) "FGCS" means the Federal Geodetic Control Subcommittee or its successor.
(d) The use of the term "State Plane Coordinates" refers only to CCS27 and CCS83 coordinates.
(e) The system of horizontal geodetic control stations within California 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 positions are published by the NGS or its successor, shall be known as the "California Spatial Reference System-Horizontal." "CSRS-H" as used in this chapter shall mean the California Spatial Reference System-Horizontal.

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. 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.

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.

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.

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.

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.

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.
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.

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.

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.

8811. The state plane coordinates of a point in any zone shall be based upon the plane coordinates of published horizontal control stations or derived from published horizontal control stations of the USC&GS and the NGS or their successors, as specified in Sections 8813, 8813.1, and 8813.2.

8812. 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.

8813. The CCS27 and CCS83 coordinates shall be based on monumented second-order stations or better which have been published by USC&GS and NGS or their successors as specified in this section and in Sections 8813.1 and 8813.2. The geodetic positions of CCS27 and CCS83 stations which are used to increase the density of control and which 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 Federal Geodetic Control Subcommittee. If an FGCS order of accuracy is claimed for a survey or a map, it shall be justified by additional written data that show equipment, procedures, closures, adjustments, and a control diagram.

8813.1. Prior to January 1, 2000, any survey or map that is to be based on state plane coordinates shall show established field-observed direct connections to at least two stations of corresponding or better accuracy whose credentials are based upon published stations of USC&GS or NGS or their successors.

8813.2. After December 31, 1999, any survey or map that is to be based on state plane coordinates shall show established field-observed direct connections to at least two stations that are:
(a) Included in the CSRS-H. (b) Included in the NGS National Geodetic Reference System, or its successor, and having a FGCS accuracy standard of O order or better. (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 the CSRS-H or included in the NGS National Geodetic Reference System, or its successor, and having a FGCS accuracy standard of O order or better.

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.

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.

8815.1. When CCS83 coordinates are shown on any map or document, the map, corner record, or document shall state the epoch (date) that is the basis of the coordinate values shown. The epoch shall be shown on the map, corner record, or document by an appropriate note on the map, corner record, or document or by adding a suffix in parentheses after CCS83 which states the epoch; for example, "CCS83" is the epoch in a decimal year format.

8815.2. The epoch for a survey using CCS83 coordinate shall be the NGS-published epoch of a controlling station for the survey.

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 NGS-published procedures and values.

8815.4. When CCS83 coordinate values are shown on any map, corner record, or document, the map, corner record, or document shall show the FGCS order of accuracy for all monumented stations having a purported order of accuracy of second order or better.

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

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.
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.

8819. This chapter does not prohibit the use of new geodetic surveying technologies for which FGCC specifications have not yet been published, except that if first- or second-order accuracy is claimed for any of the resulting monumented stations, the state plane coordinates shall conform to FGCC accuracy standards.