

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

BULLETIN 342

RESULTS
OF
SPIRIT LEVELING IN CALIFORNIA

1896 TO 1907, INCLUSIVE

FIELD WORK BY

C. H. SEMPER, L. F. BIGGS, W. V. HARDY, L. D. RYUS, AND OTHERS

ADJUSTMENT BY

S. S. GANNETT, D. H. BALDWIN, AND L. C. FLETCHER



UNIVERSITY

WASHINGTON

GOVERNMENT PRINTING OFFICE

1908

Q.E. 15

B9

nos. 342-348

Copy 2

STAR ONE

YTERAVBU

CONTENTS.

	Page
INTRODUCTION -----	5
PRECISE LEVELING -----	7
Barstow, Kramer, Mohave, and Palmdale quadrangles (Kern and San Bernardino counties) -----	7
Ballarat, Bishop, Lida, Mohave, Mount Whitney, Pilot Peak, and Olancha quadrangles (Kern and Inyo counties) -----	9
Bakersfield Special, Carquinez, Davisville, Fair Oaks, Fernando, Santa Susana, Tujunga, Vacaville, and Woodland 15' quadrangles; Bakersfield, Caliente, Famoso, Fresno, Hanford, Lodi, Los Banos, Madera, Merced, Mohave, Napa, Oakdale, Palmdale, Sacramento, Stockton, and Visalia 30' quadrangles (Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Tulare, and Yolo counties) -----	12
Chico, Davisville, Knights Landing, Marysville, Red Bluff, Redding, Shasta, Tehama, Vina, and Woodland quadrangles (Butte, Placer, Shasta, Siskiyou, Sutter, Tehama, Yolo, and Yuba counties) -----	22
PRIMARY LEVELING -----	29
Elsinore, Flowing Well, Indio Special, Redlands, Salton, San Bernardino, San Jacinto, and Yuma quadrangles (Riverside, San Bernardino, and San Diego counties) -----	29
Blaisdell, Camp Mohave, Ehrenberg Special, Needles Special, Parker, Picacho, and Yuma quadrangles (Riverside, San Bernardino, and San Diego counties) -----	32
Holtville, Imperial, and Salton quadrangles (San Diego County) -----	37
Campo, Cuyamaca, Jamul, La Jolla, and San Diego quadrangles (San Diego County) -----	40
Capistrano, Clark Lake, Corona, Elsinore, Escondido, Indio Special, Oceanside, Ramona, Riverside, Salton, San Jacinto, and San Luis Rey quadrangles (Orange, Riverside, and San Diego counties) -----	47
Cucamonga, Deep Creek, Hesperia, Pomona, Rock Creek, San Antonio, San Bernardino, and Victor 15' quadrangles; San Geronio 30' quadrangle (Los Angeles and San Bernardino counties) -----	62
Calabasas, Downey, Fernando, Goleta Special, Hueneme, Pasadena, Redondo, San Pedro, Santa Barbara Special, Santa Monica, Santa Paula, Santa Susana, Tujunga, and Ventura 15' quadrangles; Camulos, Guadalupe, Lompoc, Mount Pinos, Palmdale, Santa Ynez, and Tejon 30' quadrangles (Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties) -----	68
Ballarat, Furnace Creek, and Pilot Peak 1° quadrangles (which include various 30' quadrangles not mentioned); Barstow 30' quadrangle; and Randsburg 15' quadrangle (Inyo, Kern, and San Bernardino counties) -----	86
Kernville and Olancha quadrangles (Inyo, Kern, and Tulare counties) -----	95
Bishop, Long Valley, Mount Goddard, and Mount Whitney quadrangles (Inyo, Mono, and Tulare counties) -----	98

PRIMARY LEVELING—Continued.	Page.
Bakersfield, Caliente, Famoso, and Greenhorn 30' quadrangles; Bakersfield Special and Oil Center Special quadrangles (Kern and Tulare counties)-----	101
Kaweah and Visalia quadrangles (Tulare County)-----	104
Coalinga and Hanford quadrangles (Fresno and Kings counties)----	108
Dunlap, Fresno, Kaiser, and Tehipite quadrangles (Fresno, Madera and Tulare counties)-----	109
Los Banos, Merced, Sonora, and Yosemite quadrangles (Mariposa and Merced counties)-----	114
Bridgeport and Mount Lyell quadrangles (Mono and Tuolumne coun- ties)-----	117
Big Trees, Dardanelles, Jackson, Oakdale, Sonora, and Stockton quad- rangles (Calaveras, Mono, San Joaquin, Stanislaus, and Tuolumne counties)-----	120
Byron, Concord, Mount Diablo, New Almaden, Palo Alto, Pleasanton, San Francisco, San Jose, Santa Cruz, Stockton, and Tesla quad- rangles (Alameda, Contra Costa, San Joaquin, San Mateo, Santa Clara, and Santa Cruz counties)-----	123
Carquinez, Geyserville, Guerneville, Napa, Santa Rosa, and Tamal- pais quadrangles (Marin, Napa, Solano, and Sonoma counties)----	128
Antioch, Courtland, Rio Vista, and Vacaville quadrangles (Contra Costa, Sacramento, San Joaquin, and Solano counties)-----	137
Capay, Davisville, Dunnigan, Fair Oaks, Knights Landing, Pope Val- ley, Rumsey, and Woodland quadrangles (Colusa, Napa, Placer, Sacramento, Sutter, and Yolo counties)-----	141
Colusa, Fruto 30', Grimes, Maxwell, Sites 30', Tehama, Vina, and Willows quadrangles (Colusa, Glenn, and Tehama counties)-----	147
Iron Mountain Special and Redding quadrangles (Shasta County)---	154
Big Bar, Eureka, Hoopa, Korbelt, and Weaverville quadrangles (Hum- boldt, Shasta, and Trinity counties)-----	157
INDEX-----	163

RESULTS OF SPIRIT LEVELING IN CALIFORNIA FOR THE YEARS 1896 TO 1907, INCLUSIVE.

INTRODUCTION.

All results of spirit leveling in California for the years 1896 to May, 1907, including that previously reported upon in Appendixes to Reports of the Director of the United States Geological Survey and in Bulletin No. 185 are herein given, readjusted and rearranged by quadrangles. Descriptions and elevations of bench marks are given for 42 counties, furnishing vertical control for one-third of the State. The leveling since 1903 in the Sacramento Valley, in Colusa, Contra Costa, Glenn, Sacramento, Solano, San Joaquin, Tehama, and Yolo counties, was done in cooperation with the State.

The field work was done under the direction of Mr. R. U. Goode, geographer, 1896 to June, 1903, and under Mr. E. M. Douglas, geographer, since that date. The work of 1904 to 1907, inclusive, was mostly done under the immediate supervision of Mr. R. B. Marshall, geographer, chief of section. Credit is given in the heading of each list to the various topographers and levelmen directly in charge.

The office work of adjustment was done principally by Messrs. L. C. Fletcher and D. H. Baldwin, topographers, under the supervision of Mr. S. S. Gannett, geographer in charge of the triangulation and computing section.

The lists are separated into two classes, precise and primary, distinguishing the degree of refinement in the method of leveling employed. The elevations under precise leveling were determined by lines run either in both forward and backward directions or by simultaneous double-rodged lines, a high-grade level and rated rods being used and special precautions being taken in observation and reduction to correct error and make the results continuously good; elevations under primary leveling were determined mostly by single lines

run with prism or with Y level in circuits required to close within a limiting error represented in feet by the formula $0.05 \sqrt{D}$ in which D is the length of circuit in miles. The lines of precise leveling in this State have been run under different restrictions, and are therefore of slightly different grades of accuracy. The lines Barstow to Mohave and Mohave to Laws and Oasis were run under the same method as now used by the United States Coast and Geodetic Survey except that on the former yard rods instead of metric rods were used and the computation was made in feet from three thread readings, and on the latter a different type of instrument was used and the limit of error and lengths of sections were greater. The limits on these lines are expressed respectively by $0.017 \sqrt{D}$ (equivalent to United States Coast and Geodetic Survey limit) and $0.03 \sqrt{D}$ in which D is distance between bench marks in miles. The lines from Benicia to Pacoima and to the Oregon line were run as simultaneous double-rod lines with rod correction made for normal temperature and the partial divergence required to keep within a limit in feet represented by the formula $0.03 \sqrt{2D}$ or $0.04 \sqrt{D}$ in which D is distance between bench marks in miles.

The various groups of level lines are all based upon mean sea level, but between certain lists there are outstanding errors of closure which can not be adjusted satisfactorily until more field work is done.

The bench marks described in the following lists are of three general forms. First, a circular bronze or aluminum tablet $3\frac{1}{2}$ inches in diameter and one-fourth inch thick, appropriately lettered, having a 3-inch stem cemented into a drill hole, generally in the vertical walls of public buildings, bridge abutments, or other substantial masonry structures. The second form, employed where masonry or rock is not accessible, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter, 4 feet long after being split and expanded at bottom to 10 inches, so as to prevent both the easy subsidence of the post and its being maliciously pulled out of the ground. The iron is heavily coated with asphalt, and over the top of the post is riveted a bronze tablet similar to that described above. The third form (used in 1896 and 1897) was a copper bolt 4 inches long and 1 inch in diameter fastened into masonry or solid rock by driving it on a brass wedge in the bottom of a vertical hole, so that the top of the bolt was horizontal and thus formed a bench mark.

Numbers stamped upon the bench marks described in the following lists represent the elevations, to the nearest foot above mean sea level, as determined by unadjusted levels in the field. In some cases the finally accepted elevations as printed herein, resulting from the adjustments necessary to close circuits and from reduction to mean sea level through readjustment of the precise-level net, differ from the

bench-mark numbers by several feet. This method of numbering bench marks has been adopted where many levelers are working in the same area at the same time, as less liable to lead to confusion in identification of bench marks, and at the same time giving an approximate statement of elevation. Serial numbering is employed on special lines. It is assumed that engineers and others finding these bench marks so stamped in the field will communicate with the Director of the United States Geological Survey in order to obtain the accepted elevation to hundredths or thousandths of a foot.

Any person finding bench marks in the following lists mutilated or destroyed will confer a favor by notifying the Director, United States Geological Survey, Washington, D. C.

PRECISE LEVELING.

BARSTOW, KRAMER, MOHAVE, AND PALMDALE QUADRANGLES.

KERN AND SAN BERNARDINO COUNTIES.

The elevations in the following list are the adjusted result of a line of precise leveling run between Barstow and Mohave in 1906 by Mr. L. F. Biggs, levelman. The elevation accepted at Barstow is that determined by unadjusted precise leveling of 1906 by the United States Coast and Geodetic Survey from San Diego, and the elevation at Mohave is that determined by an adjustment made in January, 1907, taking account of this line, the precise line of 1901 and 1902 from Benicia to Pacoima, to which it was found necessary to apply an additional rod correction of 0.0006 foot, per vertical foot (increasing differences of elevation), on account of rerunning, and the double-rod primary line between Pacoima and a bench mark at San Bernardino recovered by the Coast and Geodetic Survey line. The adjustment lowers the elevation at Mohave by this line 0.361 foot with respect to Barstow, this discrepancy being distributed over the total distance of 70 miles.

The instruments used were two self-reading rods $3\frac{1}{2}$ yards in length, graduated to yards and hundredths and reading by estimation to thousandths, and a precise level of the Coast and Geodetic Survey type.

The method adopted was that now used by the United States Coast and Geodetic Survey. The line was broken by temporary bench marks into sections about 1 mile in length; each section was leveled independently in both forward and backward directions, and on all sections upon which the forward and backward measures computed in feet differed by more than $0.017 \sqrt{D}$ (in which D is the distance in miles between bench marks), forward and backward measures were repeated until a pair run in opposite directions fell within the limit.

BARSTOW, ALONG ATCHISON, TOPEKA AND SANTA FE RAILROAD, TO MOHAVE.

BARSTOW QUADRANGLE.

	Feet.
Barstow, 705 feet west of station, 2½ telegraph poles east of milepost 747, 115 feet north of track, on land of Charles O'Donnell, in fence corner; bottom of a square hole in top of cement post projecting 6 inches above ground (established by U. S. Coast and Geodetic Survey)-----	2, 101. 707
Barstow, on railroad right of way, at south end of viaduct over track, northwest corner of west concrete foundation; red metal U. S. C. & G. S. tablet-----	2, 111. 117
Barstow, 2 miles west of, 16 feet north of milepost 749; iron post----	2, 139. 368
Barstow, 5 miles west of, 6 feet north of milepost 752; iron post----	2, 173. 522
Barstow, 8 miles west of, 6 feet north of milepost 755; iron post----	2, 174. 841
Barstow, 11 miles west of, 6 feet north of milepost 758; iron post----	2, 178. 755
Barstow, 14 miles west of, 6 feet north of milepost 761; iron post----	2, 185. 492
Kramer, 16 miles east of, 6 feet north of milepost 764; iron post----	2, 246. 929
Hiawatha, in front of station; top of rail-----	2, 281. 1
Kramer, 13 miles east of, 6 feet north of milepost 767; iron post----	2, 280. 739
Kramer, 10 miles east of, 6 feet north of milepost 770; iron post----	2, 367. 936
Kramer, 7 miles east of, 6 feet north of milepost 773; iron post----	2, 422. 518
Kramer, 4 miles east of, 6 feet north of milepost 776; iron post----	2, 455. 767

KRAMER QUADRANGLE.

Kramer, 1 mile east of, 6 feet north of milepost 779; iron post-----	2, 482. 885
Kramer, 2 miles west of, 6 feet north of milepost 782; iron post-----	2, 509. 442
Kramer, 5 miles west of, 6 feet north of milepost 785; iron post-----	2, 435. 951
Kramer, 8 miles west of, 6 feet north of milepost 788; iron post-----	2, 374. 398
Rich, in front of station; top of rail-----	2, 347. 0
Rodriguez, 7 miles east of, 6 feet north of milepost 791; iron post----	2, 280. 769
Rodriguez, 4 miles east of, 6 feet north of milepost 794; iron post----	2, 275. 240
Rodriguez, 1 mile east of, 6 feet north of milepost 797; iron post----	2, 272. 326
Rodriguez, in front of station; top of rail-----	2, 286. 248
Rodriguez, 2 miles northwest of, 6 feet north of milepost 800; iron post-----	2, 321. 563
Rodriguez, 5 miles northwest of, 6 feet north of milepost 803; iron post-----	2, 370. 300

PALMDALE QUADRANGLE.

Rodriguez, 8 miles northwest of, 6 feet north of milepost 806; iron post-----	2, 420. 435
Bissell, in front of station; top of rail-----	2, 450. 7
Mohave, 9 miles southeast of, 6 feet north of milepost 809; iron post----	2, 462. 194

MOHAVE QUADRANGLE.

Mohave, 6 miles southeast of, 4 feet north of milepost 812; iron post----	2, 541. 179
Mohave, 3 miles southeast of, 10 feet north of milepost 815; iron post----	2, 618. 240
Mohave, 0.4 mile south of, 25 feet north of milepost 382, west of track; iron post-----	2, 733. 451

BALLARAT, BISHOP, LIDA, MOHAVE, MOUNT WHITNEY, PILOT PEAK, AND OLANCHA QUADRANGLES.

KERN AND INYO COUNTIES.

The following elevations are the results of a spur line of precise levels run in the spring of 1905 by Mr. R. A. Farmer, topographer, northward from Mohave along stage road to Keeler, thence along the Carson and Colorado Railway to Laws, and from Alvord northeast to the State line near Oasis.

The instruments used were a Buff & Berger level and two self-reading rods, 3.1 meters in length, graduated to centimeters and reading by estimation to millimeters.

The method adopted was a modification of that now used by the Coast and Geodetic Survey. The line was broken by temporary bench marks into sections 2 to 3 kilometers in length; each section was leveled independently in the forward and backward directions, and on all sections upon which the forward and backward measures differed by more than $8\sqrt{K}$ millimeters (which is twice the U. S. C. & G. S. limit generally used), in which K is the distances between adjacent bench marks in kilometers, both the forward and backward measures were repeated until such measures fell within this limit.

The initial bench mark is an iron post stamped "2732 B," 0.4 mile south of Mohave, 25 feet north of milepost 382, the elevation of which is now accepted as 2,733.451 feet above mean sea level.

MOHAVE, NORTHWARD ALONG STAGE ROAD, TO KEELER.

MOHAVE QUADRANGLE.

	Feet.
Mohave, 0.4 mile south of, 25 feet north of milepost 382, west of track; iron post stamped "2732 B"-----	2,733.451
Mohave, 3.5 miles northeast of, 10 feet south of road; iron post stamped "2955 B"-----	2,957.090
Mohave-Tehachapi-Randsburg signboard, 1.1 miles northeast of, 10 feet south of road; iron post stamped "2745 B"-----	2,746.614
Mohave-Tehachapi-Randsburg signboard, 4.3 miles northeast of, 10 feet east of road; iron post stamped "2588 B"-----	2,589.830
Mohave-Tehachapi-Randsburg signboard, 7.3 miles northeast of, 10 feet east of road; iron post stamped "2419 B"-----	2,421.143
Eighteenmile station, 1.8 miles south of, 20 feet east of road, 50 feet east of Copper Mining mail box; iron post stamped "2152 B"-----	2,154.019
Eighteenmile station, 1.1 miles north of, 10 feet east of road; iron post stamped "2108 B"-----	2,110.231
Eighteenmile station, 4.2 miles north of, 10 feet west of road; iron post stamped "2123 B"-----	2,125.038
Ricardo (formerly Red Rock) post-office, 0.7 mile northwest of, 20 feet north of road; iron post stamped "2442 B"-----	2,443.624
Ricardo post-office, 3.8 miles northwest of, 40 feet west of road; iron post stamped "2902 B"-----	2,904.200
Ricardo post-office, 6.4 miles northwest of, 50 feet west of road, at Summit of Red Rock Canyon; iron post stamped "3520 B"-----	3,522.165
Dixie stage station, 1.3 miles southwest of, 10 feet west of road; iron post stamped "3281 B"-----	3,282.964

PILOT PEAK QUADRANGLE.

	Feet.
Dixie stage station, 2 miles northeast of, 10 feet east of road; iron post stamped "3172 B"-----	3, 174. 253
Dixie station, 5.3 miles northeast of, 10 feet west of road; iron post stamped "3290 B"-----	3, 292. 257
Freeman, 400 feet south of, 20 feet west of road on hillside south side of Walker Canyon; iron post stamped "3379 B"-----	3, 381. 335
Freeman, 3.2 miles northeast of, 30 feet east of road; iron post stamped "3110 B"-----	3, 111. 837
Indian Wells, 300 feet north of, 20 feet west of road; iron post stamped "B"-----	2, 740. 161
Indian Wells, 3.1 miles north of, 10 feet east of road; iron post stamped "B"-----	2, 698. 352
Indian Wells, 5.9 miles north of, 30 feet west of road; iron post-----	2, 599. 124
Indian Wells, 9.2 miles north of, 40 feet east of road; iron post-----	2, 486. 654
Little Lake, 8.8 miles south of, 40 feet west of road, at summit of granite boulder; aluminum tablet-----	2, 573. 550
Little Lake, 4.6 miles south of, 70 feet east of road, at summit of granite boulder; aluminum tablet-----	2, 818. 259
Little Lake, 1.2 miles south of, 10 feet east of road, summit of black boulder; aluminum tablet-----	2, 947. 774
Little Lake, 1.7 miles north of, 50 feet west of road, at summit of granite boulder; aluminum tablet-----	3, 329. 511
Little Lake, 4.9 miles north of, 50 feet east of dry lake bed, 40 feet east of road, in summit of lava boulder; aluminum tablet-----	3, 333. 529

BALLARAT QUADRANGLE.

Little Lake, 8.1 miles north of, 40 feet east of road; iron post-----	3, 369. 852
Little Lake, 10.9 miles north of, 25 feet west of road; iron post-----	3, 444. 171
Hawai Meadows, 3.4 miles south of, 80 feet east of road; iron post--	3, 641. 821
Hawai Meadows, 720 feet north of house, 35 feet west of road; iron post-----	3, 734. 101
Hawai Meadows, 3.1 miles north of, 100 feet west of road on hillside, at summit of granite boulder; aluminum tablet-----	3, 736. 969
Olancha, 2.2 miles south of, 20 feet east of road; iron post-----	3, 716. 886

OLANCHA QUADRANGLE.

Olancha, 2 feet east of post-office porch; iron post-----	3, 649. 391
---	-------------

BALLARAT QUADRANGLE.

Olancha, 3.2 miles northeast of, 20 feet southeast of road; iron post--	3, 619. 361
Olancha, 6.4 miles northeast of, 50 feet northwest of road; iron post--	3, 628. 710
Olancha, 9.4 miles northeast of, 20 feet northwest of road; iron post--	3, 612. 718
Keeler, 6.9 miles southwest of, 30 feet north of road; iron post-----	3, 618. 405
Keeler, 3.4 miles southeast of, 25 feet east of road; iron post-----	3, 631. 009
Keeler, at southeast corner of post-office; iron post-----	3, 610. 307
Keeler, in front of station; top of east rail-----	3, 600. 9
Keeler, 0.5 mile northwest of, 10 feet from road, marble rock cut 1 foot square, 3 feet high, marking azimuth station; top of copper plate at intersection of cross lines-----	3, 599. 489

	Feet.
Keeler, 2.1 miles northwest of, 150 feet south of the Soda Works pipe line, 400 feet east of Owens Lake; iron post.....	3, 570. 235
Owens Lake, 200 feet southeast of Soda Company's pipe; surface of water, March 30, 1905.....	3, 568. 7

KEELER, ALONG CARSON AND COLORADO RAILWAY, TO LAWS.

BALLARAT QUADRANGLE.

Keeler, 3 miles north of, 8 feet north of telegraph pole opposite milepost 290; iron post.....	3, 608. 157
Inyo marble quarry, 1 mile north of, 25 feet north of milepost 287; iron post.....	3, 674. 699
Inyo quarry, 4 miles north of, 200 feet north of milepost 284; iron post.....	3, 671. 961

MOUNT WHITNEY QUADRANGLE.

Mount Whitney station, 0.5 mile south of, 100 feet south of milepost 281; iron post.....	3, 681. 507
Mount Whitney station, in front of; top of east rail.....	3, 688. 809
Mount Whitney station, 2.5 miles north of, 3 feet east of track; opposite milepost 278; iron post.....	3, 689. 764
Mount Whitney station, 5.5 miles north of, 10 feet south of milepost 275; iron post.....	3, 717. 763
Francis, in front of station; top of east rail.....	3, 724. 257
Francis, 100 feet northeast of station, east of track; iron post.....	3, 723. 232
Francis, 3 miles north of station, at milepost 269; iron post.....	3, 738. 544
Citrus, in front of station; top of east rail.....	3, 765. 3
Citrus, in front of station; iron post.....	3, 766. 400
Citrus, 3 miles north of station, at milepost 264; iron post.....	3, 764. 016
Citrus, 6 miles north of station; iron post.....	3, 785. 690
Aberdeen, 5 miles south of, 20 feet north of milepost 258; iron post.....	3, 814. 559
Aberdeen, 2 miles south of, at milepost 255; iron post.....	3, 831. 595

BISHOP QUADRANGLE.

Aberdeen, 1 mile north of, at milepost 252; iron post.....	3, 850. 144
Aberdeen, 4 miles north of, 60 feet south of milepost 249; iron post.....	3, 859. 267
Alvord, 6.5 miles south of, at milepost 246; iron post.....	3, 881. 276
Alvord, 3.5 miles south of, at milepost 243; iron post.....	3, 897. 130
Alvord, in front of station; iron post.....	3, 930. 130
Alvord, in front of station; top of rail.....	3, 929. 6
Alvord, 2.5 miles north of, 120 feet south of milepost 237, west of track; iron post.....	3, 952. 144
Alvord, 5.5 miles north of, 100 feet north of milepost 234; iron post.....	3, 981. 047
Alvord, 8.5 miles north of, at milepost 231; iron post.....	4, 007. 490
Alvord, 10.5 miles north of, 150 feet south of milepost 229; iron post.....	4, 035. 106
Laws, 2.5 miles south of, 2 feet south of milepost 226; iron post.....	4, 064. 895
Laws, in front of station; top of east rail.....	4, 112. 7
Laws, in front of station; iron post stamped "B 4116, 1905".....	4, 114. 583
Laws, 2.5 miles north of, at milepost 221; iron post.....	4, 142. 000
Laws, 5.5 miles north of, milepost 218; iron post.....	4, 210. 192

ALVORD, NORTHEAST ALONG COUNTY ROADS, TO OASIS AND STATE LINE.

BISHOP QUADRANGLE.

	Feet.
Alvord, 2.9 miles northeast of, 10 feet north of road, summit of rock 2.5 by 2.5 by 1.5 feet; aluminum tablet.....	4, 502. 388
Alvord, 6.4 miles northeast of, 300 feet southeast of toll house, sum- mit of rock 3 by 3 by 2 feet, aluminum tablet.....	5, 971. 350
Alvord, 10.7 miles northeast of, 20 feet south of road, on summit near cedar tree; iron post.....	7, 276. 225
Payson cabin, 0.5 mile east of, 40 feet east of road; iron post.....	6, 556. 830
Road to Payson's ranch, 10 feet south of road forks; iron post.....	5, 519. 064
Payson's ranch, 5 miles east of, 20 feet north of road; iron post.....	5, 108. 922
Gilbert ranch, 0.7 mile northwest of, 20 feet south of road; iron post...	5, 209. 692
Gilbert ranch, 1.5 miles northeast of, 30 feet north of road; iron post..	5, 314. 341

LIDA QUADRANGLE.

Piper ranch, first summit west of; iron post.....	6, 371. 105
Oasis, 2.5 miles southwest of, at road forks; iron post.....	5, 299. 775
Oasis, northeast corner of post-office wall; bronze tablet stamped "5106 C. C." (old value, 5,106.101.—Appendix to 19th Ann. Report) ..	5, 031. 226
Oasis, 3 miles southeast of, 30 feet north of road, 0.25 mile east of forks of road; iron post.....	5, 080. 887

BAKERSFIELD SPECIAL, CARQUINEZ, DAVISVILLE, FAIROAKS, FERNANDO, SANTA SUSANA, TUJUNGA, VACAVILLE, AND WOODLAND 15' QUADRANGLES; BAKERSFIELD, CALIENTE, FAMOSO, FRESNO, HANFORD, LODI, LOS BANOS, MADERA, MERCED, MOHAVE, NAPA, OAKDALE, PALMDALE, SACRAMENTO, STOCKTON, AND VISALIA 30' QUADRANGLES.

FRESNO, KERN, KINGS, LOS ANGELES, MADERA, MERCED, SACRAMENTO, SAN JOAQUIN, SOLANO, STANISLAUS, TULARE, AND YOLO COUNTIES.

The elevations in the following list are based upon a bench mark of the United States Coast and Geodetic Survey, described as the upper surface of a $\frac{3}{8}$ -inch iron bolt driven in a hole drilled horizontally in the southwestern face of a sandstone rock smoothed a foot square, at the top of a ledge near high-water mark at Benicia Arsenal, just south of the railroad and east of the arsenal wharf. The elevation of the bench mark was accepted as 5.980 feet above mean sea level.

The line was originally checked and adjusted by connecting with a bench mark at Pacoima, previously established from the tidal bench mark at San Pedro, and published in Appendix to the Nineteenth Annual Report, page 387, the closure error being —0.243 foot in 523 miles; but the rerunning of a portion of this line near Mohave in 1906 by precise leveling showed that the rods that were used on this line had apparently lengthened 0.0006 foot per vertical foot over their original rating, and the section Tipton to Pacoima has been corrected for this error and adjusted additionally to make a total correction to the previous adjusted height at Mohave of +2 feet and of +0.7 foot

at Pacoima. The correction at Pacoima is derived through an unadjusted double-rodged primary line of 1896, by H. S. Crowe, from San Bernardino, at which place the elevation determined in 1906 by precise leveling of the Coast and Geodetic Survey from Point Loma (near San Diego) is accepted, and the old elevation of the tidal bench mark at San Pedro disregarded. The Coast and Geodetic Survey gage height at Santa Monica, formerly disregarded but now accepted, makes correction to Crowe's double line at that place $+0.886$ foot. The elevation now adopted at Mohave is 0.36 foot less than that determined from San Bernardino by precise levels of 1906 by the Coast and Geodetic Survey to Barstow, and by United States Geological Survey thence to Mohave, it is 0.25 greater than that brought from San Bernardino via Pacoima using Semper's line corrected for the additional rod error, and 0.52 foot greater than by using Semper's corrected line from Benicia.

The leveling was done in 1901 and 1902 by Mr. C. H. Semper, levelman in charge, using a Buff & Berger precise level and the double simultaneous method.

BENICIA, VIA SOUTHERN PACIFIC RAILROAD, TO SACRAMENTO.

CARQUINEZ 15' (NAPA 30') QUADRANGLE.

	Feet.
Goodyear, in front of station; top of rail-----	7.9
Oluta, in front of station; top of rail-----	5.9
Teal, in front of station; top of rail-----	5.6
Fairfield, at left of main entrance to court-house, 7.5 feet below bottom of stone ledge to first window of auditor's office; bronze tablet stamped "15" ^a -----	15.170

VACAVILLE QUADRANGLE.

Suisun, 3.9 miles north of, 25 feet east of track, 3 feet south of milepost 53; iron post stamped "47 B"-----	46.833
Vanden, in front of station; top of rail-----	73.4
Canon, 12 feet south of station, 12 feet west of track; iron post stamped "89 B"-----	88.650
Canon, in front of station; top of rail-----	87.8
Canon, 2.6 miles north of, west side of track, 8 feet south of milepost 59; iron post stamped "80 B"-----	80.291
Elmira, in front of station; top of rail-----	75.0
Elmira, 1.7 miles north of, 33 feet east of track, 2 feet west of milepost 62; iron post stamped "62 B"-----	62.282
Batavia, 2 feet from north end of station, 27 feet east of track; iron post stamped "62 B"-----	61.758
Dixon, 700 feet south of station, west side of track, at highway crossing, south side of road, at corner of fence; iron post stamped "61 B"-----	61.295

^aThis bench mark was originally established in 1896, the elevation as then determined being 15.151 (See Appendix to 18th Ann. Report, 1896-7, p. 414).

	Feet.
Dixon, in front of station; top of rail.....	62.9
Dixon, 2.4 miles north of, east side of track, 3 feet from milepost 71; iron post stamped "58 B".....	57.618
Tremont, in front of station; top of rail.....	58.9

WOODLAND QUADRANGLE.

Tremont, 1.3 miles north of, east side of track, 5 feet from milepost 74; iron post stamped "49 B".....	48.890
Davisville, in front of Davis station; top of rail.....	47.4
Davisville, 0.4 mile east of, south side of track, 5 feet from milepost 77; iron post stamped "42 B".....	42.095
Davisville, 3.3 miles east of, south side of track, 18 feet south of mile- post 80, on fence line; iron post stamped "28 B".....	27.644
Swingle, in front of station; top of rail.....	28.1
Webster, in front of station; top of rail.....	22.2
Webster, 1.5 miles east of, south side of track, 5 feet west of milepost 83; iron post stamped "14 B".....	14.060
Milepost 86, 4 feet north by 15 feet east of, south side of track; iron post stamped "17 B".....	17.339
Broderick, in front of station; top of rail.....	26.3
Broderick, at Third street crossing; top of rail.....	29.3
Sacramento, in front of station; top of rail.....	29.6

SACRAMENTO, VIA SOUTHERN PACIFIC RAILROAD, TO STOCKTON.

DAVISVILLE QUADRANGLE.

Sacramento, at foot of L street, south end of steamer shed; 34 foot mark of the United States Weather Bureau gage (determined by R. A. Farmer, 1905).....	33.524
---	--------

FAIROAKS 15' (SACRAMENTO 30') QUADRANGLE.

Sacramento, 300 feet east of Capitol, in top of surface of meridian stone; aluminum tablet stamped "21 B" (elevation by Coast and Geodetic Survey is 2.876 feet higher).....	20.865
Sacramento, at Thirteenth street crossing; top of rail.....	21.3
Sacramento, at Twenty-fifth street crossing; top of rail.....	24.0
Brighton, in front of station; top of rail.....	42.4
Brighton, 200 feet south of station, 20 feet west of track, at tele- graph pole; iron post stamped "41 B".....	41.042
Brighton, 3.2 miles south of, 6 feet south of milepost 131, east side of track; iron post stamped "36 B".....	35.741

LODI 30' QUADRANGLE.

Florin, 150 feet north of station, at crossing; top of rail.....	39.3
Milepost 127, 4 feet south of, east side of track, at crossing; iron post stamped "37 B".....	36.740
Elk Grove, on Main street, 30 feet west of track, 4 feet south of street line; iron post stamped "49 B".....	49.289
Elk Grove, in front of station; top of rail.....	49.4

	Feet.
McConnells, 50 feet north of station, 50 feet east of track; iron post stamped "46 B"-----	46.390
Arno, 50 feet south of station, west side of track, at fence line; iron post stamped "35 B"-----	35.058
Arno, in front of station; top of rail-----	36.9
Milepost 115, 10 feet south of, east side of track; iron post stamped "42 B"-----	41.880
Galt, in front of station; top of rail-----	46.2
Galt, on line with north margin of station, 30 feet west of track; iron post stamped "46 B"-----	45.576
Forest Lake, in front of station; top of rail-----	48.2
Milepost 109, 15 feet north of, east side of track at crossing; iron post stamped "48 B"-----	48.296
Acampo, in front of station; top of rail-----	55.6
Acampo, 1 mile south of, east side of track at crossing, north margin of road; iron post stamped "53 B"-----	52.625
Lodi, in front of station; top of rail-----	50.7
Lodi, 1.5 miles south of, east side of track, at crossing, north side of road at angle of fence; iron post stamped "45 B"-----	45.286
Milepost 100, 5 feet south of, east side of track at fence line; iron post stamped "37 B"-----	37.430
Milepost 97, 15 feet north of, east side of track, at fence line; iron post stamped "28 B"-----	28.111

STOCKTON QUADRANGLE.

Milepost 94, 8 feet north of, east side of track, on fence line; iron post stamped "20 B"-----	20.075
--	--------

STOCKTON, VIA SOUTHERN PACIFIC RAILROAD, TO FRESNO.

STOCKTON QUADRANGLE.

Stockton, at Park street crossing; top of rail-----	18.6
Stockton, west door of north entrance of San Joaquin County courthouse, in angle of wall; bronze tablet stamped "18 B" ^a -----	17.953
Stockton, in front of station; top of rail-----	18.8
Stockton, at Sacramento street crossing; top of rail-----	22.0
Stockton, 0.6 mile south of, at crossing of Santa Fe railroad; top of rail-----	21.7
Milepost 88, 8 feet south of, east side of track, at fence line; iron post stamped "15 B"-----	14.679
French Camp, in front of station; top of rail-----	19.4
Milepost 85, 200 feet east of, east side of track, at road crossing, at fence line; iron post stamped "19 B"-----	18.971
Lathrop, 250 feet north of station, at northwest corner of railroad park, on margin of road; iron post stamped "20 B"-----	19.938
Lathrop, in front of station; top of rail-----	21.6
Monteca, 25 feet south of station, 20 feet west of milepost 98, at fence line; iron post stamped "36 B"-----	35.831
Monteca, 2.9 miles south of, 20 feet west of milepost 10, west side of track, at fence line; iron post stamped "45 B"-----	44.998

^a This bench mark was originally established in 1896, the elevation as then determined being 17.461 (see Appendix to 18th Ann. Report, 1896-7, p. 416).

	Feet.
Milepost 104, 50 feet north of, west side of track, at fence line; iron post stamped "61 B"-----	61.073
Ripon, crossing at station; top of rail-----	67.5
Ripon, 2.3 miles south of, opposite milepost 107, east side of track, at fence line; iron post stamped "67 B"-----	66.592
Salida, 2.6 miles south of, opposite milepost 110, east side of track, at fence line; iron post stamped "78 B"-----	77.567
Milepost 113, opposite, east side of track, at fence line; iron post stamped "82 B"-----	82.117
Modesto, in front of station; top of rail-----	86.1
Modesto, in southwest corner of court-house; bronze tablet stamped "91 B"-----	91.329

OAKDALE QUADRANGLE.

Modesto, 1.6 miles south of, 10 feet south of milepost 116, west side of track, at fence line; iron post stamped "86 B"-----	86.184
Ceres, in front of station; top of rail-----	88.4
Esmar, in front of station; top of rail-----	93.4
Keyes, opposite milepost 122, 75 feet east of side track, on west margin of highway; iron post stamped "92 B"-----	92.408
Keyes, 2.9 miles south of, opposite milepost 125, east side of track, at fence line; iron post stamped "100 B"-----	100.214
Turlock, in front of station; top of rail-----	101.1

LOS BANOS QUADRANGLE.

Turlock, 0.6 mile south of, opposite milepost 128, on east margin of highway; iron post stamped "103 B"-----	102.952
Turlock, 3.6 miles south of, 5 feet north of milepost 131, west side of track; iron post stamped "111 B"-----	111.299
Milepost 134, 27 feet south of; iron post stamped "116 B"-----	116.456
Milepost 137, 5 feet north of, west side of track, at fence line; iron post stamped "129 B"-----	128.818
Livingston, in front of station; top of rail-----	130.6
Livingston, 2.5 miles south of, opposite milepost 140, east side of track, at margin of highway; iron post stamped "142 B"-----	141.839
Arena, in front of station; top of rail-----	140.5
Arena, 2.9 miles south of, opposite mile post 143, east side of track, at fence line; iron post stamped "154 B"-----	153.877
Atwater, in front of station; top of rail-----	147.7
Buhach, 60 feet north of station, opposite milepost 146; iron post stamped "153 B"-----	152.679
Buhach, in front of station; top of rail-----	155.4
Milepost 149, opposite, east side of track, at margin of road; iron post stamped "154 B"-----	154.374

MERCED QUADRANGLE.

Merced, in southeast corner of county court-house; aluminum tablet stamped "171 B"-----	171.118
Merced, 3.2 miles south of, opposite milepost 155, east side of track at margin of highway; iron post stamped "178 B"-----	178.505

	Feet.
Milepost 158, opposite, east side of track, at margin of highway; iron post stamped "187 B"-----	187.587
Milepost 161, opposite east side of track, at margin of highway, iron post stamped "198 B"-----	198.474
Athlone, in front of station; top of rail-----	204.0
Athlone, 2.5 miles south of, opposite milepost 164, east side of track, at margin of highway; iron post stamped "217 B"-----	217.392
Milepost 157, 150 feet south of, east side of track, at margin of highway; iron post stamped "233 B"-----	232.731
Minturn, in front of station; top of rail-----	238.6
Minturn, 1.9 miles south of, opposite milepost 170, east side of track, at margin of highway; iron post stamped "241 B"-----	240.597
Milepost 173, opposite, east side of track, at margin of highway; iron post stamped "247 B"-----	246.703
Milepost 176, opposite, east side of track, at margin of highway; iron post stamped "249 B"-----	249.281
Berenda, in front of station; top of rail-----	250.3
Berenda, 1.3 miles south of, 18 feet south of milepost 179, west of track, at margin of highway; iron post stamped "248 B"-----	248.264
Milepost 182, 15 feet south of, west of side track, at margin of highway; iron post stamped "270 B"-----	270.432

MADERA QUADRANGLE.

Madera, in front of station; top of rail-----	272.0
Madera, in front face of northeast corner of county court-house; aluminum tablet stamped "274 B"-----	274.030
Borden, in front of station; top of rail-----	269.6
Borden, 1,000 feet south of station, 100 feet south of milepost 188, at corner of fence, west side of track; iron post stamped "269 B"-----	269.464

FRESNO QUADRANGLE.

Milepost 191, 8 feet south of, west side of track, at margin of highway; iron post stamped "273 B"-----	273.972
Milepost 194, 6 feet south of, west side of track, at margin of highway; iron post stamped "284 B"-----	284.571
Milepost 197, 300 feet south of, 55 feet east of track, at crossing; iron post stamped "300 B"-----	300.150
Milepost 200, 10 feet south of, west side of track, at margin of highway; iron post stamped "297 B"-----	296.738
Milepost 203, 225 feet south of, west side of track, at margin of highway; iron post stamped "296 B"-----	295.910
Fresno, in west face of passenger station, south of door to gentlemen's waiting room; aluminum tablet stamped "290 B"-----	289.983

FRESNO, VIA SOUTHERN PACIFIC RAILROAD, TO BAKERSFIELD.

FRESNO QUADRANGLE.

Fresno, opposite south end of passenger station; top of rail of main line-----	287.1
Fresno, 1 mile south of, at Cherry-avenue crossing; top of rail-----	286.3

	Feet.
Fresno, 2.3 miles south of, 14 feet south of milepost 209, west side of track, at margin of highway; iron post stamped "286 B"-----	286.421
Crossing of Santa Fe and Southern Pacific railroads; top of rail....	290.3
Malaga, in front of station, top of rail.....	293.2
Malaga, 0.4 mile south of, 15 feet south of milepost 212, west side of track, at margin of highway; iron post stamped "297 B"-----	297.037
Malaga, 3.5 miles south of, 10 feet south of milepost 215, east side of track, at margin of highway; iron post stamped "300 B"-----	300.465
Fowler, in front of station; top of rail.....	304.1
Fowler, 1.7 miles south of, 12 feet south of milepost 218, west side of track, at margin of highway; iron post stamped "304 B"-----	303.871
Selma, 0.8 mile north of, 11 feet south of milepost 221, west side of track, at margin of highway; iron post stamped "310 B"-----	310.368
Selma, in front of station; top of rail.....	305.8
Selma, 2.2 miles south of, 8 feet south of milepost 224, west side of track, at margin of highway; iron post stamped "305 B"-----	304.755
Kingsburg, in front of station; top of rail.....	296.6
Kingsburg, 0.3 mile south of, opposite milepost 227, west side of track, at margin of highway; iron post stamped "295 B"-----	294.754

HANFORD QUADRANGLE.

Kingsburg, 3 miles south of, 8 feet south of milepost 230, west side of track, at margin of highway; iron post stamped "295 B"-----	295.119
---	---------

VISALIA QUADRANGLE.

Traver, in front of station; top of rail.....	285.3
Traver, 0.5 mile south of, 19 feet south of milepost 233, west side of track, at margin of highway; iron post stamped "283 B"-----	282.843
Traver, 3.5 miles south of, 9 feet south of milepost 236, west side of track, at margin of highway; iron post stamped "271 B"-----	271.422
Milepost 239, 10 feet south of, west side of track, at margin of highway; iron post stamped "280 B"-----	278.982
Goshen, in front of station; top of rail.....	283.5
Goshen, 1.4 miles south of, opposite milepost 242, east side of track, at margin of highway; iron post stamped "286 B"-----	286.338
Milepost 245, 10 feet south of, west side of track; iron post stamped "293 B"-----	292.787
Milepost 248, opposite, east side of track, at margin of fence line; iron post stamped "293 B"-----	293.350
Tulare, at crossing of Santa Fe Railway; top of rail.....	288.3
Tulare, 10 feet south of northeast corner of public library fence, 200 feet south of milepost 251, west side of track; iron post stamped "285 B"-----	284.721
Tulare, in front of station; top of rail.....	287.3
Tulare, 2.9 miles south of, 10 feet south of milepost 254, west side of track, at margin of highway; iron post stamped "269 B"-----	269.180
Milepost 257, 4 feet north of, west side of track, at margin of highway fence; iron post stamped "266 B"-----	266.208
Milepost 260, opposite, east side of track, at fence line for east margin of highway; iron post stamped "266 B"-----	266.463
Tipton, in front of station; top of rail.....	272.0

Feet.

Tipton, 1.4 miles south of, east side of track, at fence line, opposite milepost 263; iron post stamped "277 B"-----	277. 271
Tipton, 4.4 miles south of, west side of track, opposite milepost 266; iron post stamped "272 B"-----	272. 616

FAMOSO QUADRANGLE.

Pixley, in front of station; top of rail-----	274. 3
Milepost 269, 15 feet south of, west side of track, at fence line; iron post stamped "275 B"-----	275. 217
Milepost 272, opposite, east side of track, at margin of fence; iron post stamped "276 B"-----	276. 222
Milepost 275, opposite, west side of track, at margin of fence; iron post stamped "293 B"-----	293. 023
Milepost 278, opposite, west side of track, at margin of fence; iron post stamped "303 B"-----	303. 631
Delano, 0.8 mile north of, opposite milepost 281, west side of track at margin of fence; iron post stamped "316 B"-----	316. 644
Delano, in front of station; top of rail-----	318. 7
Delano, 2.1 miles south of, 12 feet south of milepost 284, west side of track; iron post stamped "307 B"-----	307. 151
Milepost 287, 12 feet south of, west side of track, at margin of high- way; iron post stamped "342 B"-----	341. 928
Milepost 290, 12 feet south of, west side of track; iron post stamped "376 B"-----	376. 643
Famoso, 0.7 mile north of, opposite milepost 293, east side of track, at margin of highway; iron post stamped "415 B"-----	415. 479
Famoso, in front of station; top of rail-----	423. 4
Milepost 296, opposite, east side of track, at margin of highway; iron post stamped "439 B"-----	439. 004
Milepost 299, opposite, 45 feet east of track; iron post stamped "442 B"-----	442. 320
Milepost 302, opposite, 40 feet east of track; iron post stamped "415 B"-----	415. 086

BAKERSFIELD SPECIAL (BAKERSFIELD 30') QUADRANGLE.

Milepost 305, opposite, 43 feet east of track; iron post stamped "427 B"-----	427. 798
Jewetta, in front of station; top of rail-----	453. 9
Jewetta, 1 mile southeast of, opposite milepost 308, 40 feet east of track; iron post stamped "448 B"-----	448. 386
Milepost 312, opposite, on east side of track, at fence line; iron post stamped "409 B"-----	409. 937

BAKERSFIELD, VIA SOUTHERN PACIFIC RAILROAD, TO TEHACHAPI.

BAKERSFIELD SPECIAL (CALIENTE 30') QUADRANGLE.

Bakersfield (Kern station), 130 feet east of northeast corner of sta- tion, at south end of highway and corner of fence; iron post stamped "421 B"-----	421. 877
Bakersfield (Kern station), in front of station; top of rail-----	420. 7

CALIENTE 30' QUADRANGLE.

	Feet.
Milepost 317, 12 feet south of, on west side of track, at margin of highway; iron post stamped "431 B"-----	431. 898
Milepost 320, 12 feet south of, on west side of track, at margin of highway; iron post stamped "509 B"-----	510. 070
Milepost 323, 12 feet south of, on west side of track; iron post stamped "660 B"-----	660. 929
Milepost 326, opposite, east side of track, at fence line; iron post stamped "864 B"-----	864. 992
Pampa, 30 feet west of station, on east side of track; at fence line; iron post stamped "874 B"-----	874. 815
Pampa, in front of station; top of rail-----	875. 9
Milepost 332, 370 feet south of, east side of track, at fence line; iron post stamped "1014 B"-----	1, 015. 446
Milepost 335, 65 feet south of, 10 feet east of track; iron post stamped "1201 B"-----	1, 202. 070
Caliente, 1.6 miles south of, 10 feet south of milepost 338, on west side of track; iron post stamped "1402 B"-----	1, 403. 527
Milepost 341, opposite, on east side of track, at margin of fence; iron post stamped "1732 B"-----	1, 733. 688
Bealville, crossing at station; top of rail-----	1, 806. 4
Milepost 344, 100 feet north of, 25 feet east of track; iron post stamped "2054 B"-----	2, 055. 255
Milepost 347, 150 feet south of, 60 feet west of track, 20 feet east of fence; iron post stamped "2395 B"-----	2, 396. 987
Keene, in front of station; top of rail-----	2, 711. 7
Keene, 360 feet south of station, 30 feet west of track, at milepost 350; iron post stamped "2719 B"-----	2, 721. 489
Milepost 353, 360 feet south of, on west side of track, 20 feet south of crossing; iron post stamped "3064 B"-----	3, 066. 522

MOHAVE QUADRANGLE.

Girard, in front of station; top of rail-----	3, 295. 6
Girard, 0.9 mile south of, on east side of track, opposite milepost 356, 12 feet from fence; iron post stamped "3396 B"-----	3, 398. 433

TEHACHAPI, VIA SOUTHERN PACIFIC RAILROAD, TO MOHAVE.

MOHAVE QUADRANGLE.

Milepost 359, 5 feet from, 20 feet west of track; iron post stamped "3732 B"-----	3, 734. 298
Tehachapi, in front of station; top of rail-----	3, 969. 4
Tehachapi, at station, 30 feet north of track, 15 feet east of highway; iron post stamped "3966 B"-----	3, 969. 255
Tehachapi, summit; top of rail-----	4, 030. 0
Milepost 365, 12 feet south of, on west side of track, at margin of highway; iron post stamped "3995 B"-----	3, 997. 981
Milepost 368, opposite, on east side of track, at margin of highway; iron post stamped "3920 B"-----	3, 922. 709
Cameron, in front of station; top of rail-----	3, 792. 0
Cameron, 150 feet south of station, on west side of track, at margin of fence; iron post stamped "3790 B"-----	3, 792. 997

	Feet.
Milepost 374, opposite, 80 feet east of track; iron post stamped "3586 B"-----	3,588.914
Mohave, 4.7 miles north of, west side of track, 40 feet from milepost 377; iron post stamped "3272 B 1902"-----	3,273.919
Mohave, 2.7 miles north of, 70 feet north of milepost 379, on west side of railroad; iron post stamped "3030 B 1902"-----	3,032.494

MOHAVE, ALONG SOUTHERN PACIFIC RAILWAY, TO PACOIMA.

MOHAVE QUADRANGLE.

Mohave, in front of station; top of rail-----	2,757.0
Mohave, 0.4 mile south of, 25 feet north of milepost 382, on west side of railroad; iron post stamped "2732 B 1902"-----	2,733.451

PALMDALE QUADRANGLE.

Rosamond, 10.4 miles north of, 12 feet south of milepost 385, on west side of railroad; iron post stamped "2639 B 1902"-----	2,641.311
Rosamond, 7.4 miles north of, 15 feet south of milepost 388, on east side of track; iron post stamped "2561 B 1902"-----	2,562.911
Rosamond, 4.4 miles north of, 10 feet south of milepost 391, on west side of track; iron post stamped "2543 B 1902"-----	2,544.409
Rosamond, 1.4 miles north of, 10 feet south of milepost 394, on west side of track; iron post stamped "2407 B 1902"-----	2,408.948
Rosamond, in front of station; top of rail-----	2,328.0
Lancaster, 9.6 miles north of, west of track, 12 feet south of milepost 397; iron post stamped "2311 B 1902"-----	2,312.885
Lancaster, 6.6 miles north of, 10 feet south of milepost 400, on west of track; iron post stamped "2302 B 1902"-----	2,304.022
Lancaster, 3.6 miles north of, at milepost 403, west side of track; iron post stamped "2302 B 1902"-----	2,303.913
Lancaster, 0.6 mile north of, 10 feet south of milepost 406, west of track; iron post stamped "2335 B 1902"-----	2,336.389
Lancaster, in front of station; top of rail-----	2,357.0
Palmdale, 5.9 miles north of, 50 feet from track, opposite milepost 409, on east side of track; iron post stamped "2462 B 1902"-----	2,463.882
Palmdale, 2.9 miles north of, 10 feet north of milepost 412, on west side of track; iron post stamped "2592 B 1902"-----	2,593.314
Palmdale, 150 feet north of station, on east side of track, telegraph pole; iron post stamped "2657 B 1902"-----	2,658.623
Harold, 165 feet north of water tank, at north end of section house fence, on east side of track; iron post stamped "2824"-----	2,826.028

TUJUNGA QUADRANGLE.

Vincent, 500 feet north of station, 500 feet west of center line of T. 5 N., R. 12 W., in corner of jog in fence; iron post stamped "3219"-----	3,219.258
Acton, southwest corner of hotel, in brick wall; bronze tablet stamped "2700"-----	2,700.771
Ravenna, 58 feet east of station office door, 35 feet from gum tree, on east side of track; iron post stamped "2468"-----	2,468.188

FERNANDO QUADRANGLE.

	Feet.
Lang, between hotel building and section house, 45 feet north of center of track; iron post stamped "1690"-----	1,689.544

SANTA SUSANA QUADRANGLE.

Saugus (Surrey post-office), 18 feet from north corner of pump house, 18 feet from center of track, 33 feet from south corner of station building; iron post stamped "1171"-----	1,170.641
Newhall, 27 feet south of station, 30 feet from center of track, between tree and telegraph pole; iron post stamped "1273"-----	1,272.195
Fernando tunnel, 0.25 mile south of south end of, at end of yard at section house; iron post stamped "1417"-----	1,416.373

FERNANDO QUADRANGLE.

Fernando, Maclay & Maclay Company's building on Johnson street, in southeast corner of brick wall; bronze tablet stamped "1066"-----	1,066.665
Pacoima, 165 feet northwest of northwest corner of brick station building, at corner of fence; iron post stamped "1013"-----	1,013.230

CHICO, DAVISVILLE, KNIGHTS LANDING, MARYSVILLE, RED BLUFF, REDDING, SHASTA, TEHAMA, VINA, AND WOODLAND QUADRANGLES.

BUTTE, PLACER, SHASTA, SISKIYOU, SUTTER, TEHAMA, YOLO, AND YUBA COUNTIES.

The elevations in the following list are a portion of the results of a double-simultaneous precise-level line run in 1902-3 by Mr. C. H. Semper, levelman, from Benicia, Cal., north along Southern Pacific Railroad to Portland, Oreg.

As originally computed and corrected for rod error, in accord with previous rating, it made a closure of 0.420 foot low on the elevation brought from Astoria to Portland by J. H. Carlock in 1898, but recent rerunning near Mohave over a precise line on which the same rods were used as on this line, on portion from Benicia to near Shasta Springs (where new rods were substituted at 2,650-foot elevation), showed an additional rod correction necessary to be applied of 0.0006 foot per vertical foot, increasing differences, and this would increase the elevation for Shasta Springs 1.59 feet, making a closure of 1.17 high at Portland. As a matter of adjustment the previous adjusted elevations by this line from Benicia to near Kennett were retained, the correction at Kennett being +0.13 at 680-foot elevation, and rod corrections applied thence to Shasta Springs make the correction to near Shasta Springs +1.3 feet, leaving 0.88 foot error, which has been adjusted between the latter place and Portland, a distance of 440 miles, at the rate of 0.002 foot per mile. A Buff & Berger precise level and two double-faced 10-foot nonextensible target rods were used.

Elevations in Oregon are not included, and elevations between Benicia and Davisville, Cal., are given in other lists, pages 13-14.

DAVIS, NORTH TO WOODLAND.

DAVISVILLE QUADRANGLE.

	Feet.
Davis, 0.4 mile east of, on south side of railroad, 5 feet from milepost 77; iron post stamped "42 B 1902"-----	42.095

WOODLAND QUADRANGLE.

Davis, 3.2 miles north of, on east side of railroad, 30 feet north of milepost 80; iron post stamped "48 B 1902"-----	48.400
Davis, 6.1 miles north of, on east side of railroad, 300 feet north of milepost 83, at railroad crossing; iron post stamped "53 B 1902"---	53.315
Woodland, at southeast corner of railroad park at station, 5 feet north of water tank; iron post stamped "60 B 1902"-----	60.260
Woodland, near station, at railroad crossing; top of rail-----	60.8

WOODLAND TO MARYSVILLE.

WOODLAND QUADRANGLE.

Woodland, 2.6 miles north of, on east side of railroad, at fence line, at milepost 89; iron post stamped "62 B 1902"-----	61.589
---	--------

KNIGHTS LANDING QUADRANGLE.

Woodland, 5.6 miles north of, on east side of railroad, at milepost 92, at fence line; iron post stamped "30 B 1902"-----	30.201
Knights Landing, in front of station; top of rail-----	36.7
Knights Landing, at railroad station, 30 feet east of track, at corner of highway and on line of north side of station; iron post stamped "32 B 1902"-----	31.825
Knights Landing, 5 miles north of, on west side of railroad, 6 feet from rail, opposite milepost 100; iron post stamped "37 B 1902"---	37.432
Knights Landing, 8.1 miles north of, on west side of railroad, 10 feet from tract, opposite milepost 103; iron post stamped "38 B 1902"---	38.006
Chandler, in front of station; top of rail-----	36.4
Marcuse, 0.4 mile north of, on west side of railroad at fence line, 5 feet north of milepost 109; iron post stamped "33 B 1902"-----	32.878
Tudor, 0.2 mile south of, on west side of railroad, at fence line, 5 feet north of milepost 112; iron post stamped "40 B 1902"-----	39.844

MARYSVILLE QUADRANGLE.

Tudor, in front of station; top of rail-----	39.9
Tudor, 2.8 miles north of, on west side of railroad, at fence line, 5 feet north of milepost 115; iron post stamped "43 B 1902"-----	43.431
Tudor, 5.8 miles north of, on west side of railroad, at fence line, 5 feet north of milepost 118; iron post stamped "53 B 1902"-----	53.073
Tudor, 8.8 miles north of, on west side of railroad, at fence line, 5 feet north of milepost 121; iron post stamped "58 B 1902"-----	57.712
Yuba City, in front of station; top of rail-----	57.5
Marysville, at railroad station, 225 feet west of track, at southeast corner of railroad park; iron post stamped "61 B 1902"-----	61.202

MARYSVILLE TO RED BLUFF.

MARYSVILLE QUADRANGLE.

	Feet.
Marysville, 2.8 miles north of, on east side of railroad, 300 feet north of long trestle, 10 feet east of track, opposite milepost 145; iron post stamped "72 B 1902"-----	71. 774
Marysville, 5.7 miles north of, on east side of railroad, 4 feet north of milepost 148, at fence line; iron post stamped "66 B 1902"-----	66. 420
Marysville, 8.7 miles north of, on east side of railroad, at fence line, 4 feet north of milepost 151; iron post stamped "73 B 1902"-----	73. 520
Live Oak, in front of station; top of rail-----	75. 8
Live Oak, 2 miles north of, on east side of railroad, 5 feet north of milepost 155; iron post stamped "82 B 1902"-----	81. 873
Live Oak, 5 miles north of, on east side of railroad, at road crossing, 30 feet south of milepost 158; iron post stamped "92 B 1902"-----	92. 520
Gridley, in front of station; top of rail-----	92. 7
Gridley, 1.7 miles north of, on east side of railroad, 480 feet north of milepost 161, at fence line; iron post stamped "90 B 1902"-----	90. 191
Biggs, in front of station; top of rail-----	93. 7
Biggs, 1.3 miles north of, on west side of railroad, 900 feet north of milepost 164, 50 feet west of track, at telegraph pole; iron post stamped "91"-----	90. 789
Biggs, 4.2 miles north of, on east side of railroad, 5 feet north of milepost 167; iron post stamped "99 B 1902"-----	98. 900

CHICO QUADRANGLE.

Biggs, 7.1 miles north of, on east side of railroad, 5 feet north of milepost 170; iron post stamped "107 B 1902"-----	107. 543
Nelson, in front of station; top of rail-----	121. 0
Nelson, 700 feet north of station, on east side of railroad, 5 feet north of milepost 173; iron post stamped "120 B 1902"-----	119. 767
Nelson, 3.1 miles north of, on east side of railroad, 4 feet north of milepost 176; iron post stamped "128 B 1902"-----	128. 010
Durham, 0.4 mile south of, on east side of railroad, 270 feet north of milepost 179, 5 feet from telephone pole; iron post stamped "152 B 1902"-----	152. 298
Durham, in front of station; top of rail-----	159. 1
Durham, 2.5 miles north of, on east side of railroad, 5 feet north of milepost 182; iron post stamped "182 B 1902"-----	181. 879
Chico, 0.5 mile south of, on east side of railroad, 5 feet north of milepost 185; iron post stamped "185 B 1902"-----	184. 842
Chico, in front of station; top of rail-----	188. 7
Chico, State Normal School, southwest corner of building, front face; aluminum tablet stamped "201 B 1902"-----	200. 776
Chico, 3.4 miles north of, on east side of railroad, 5 feet north of milepost 189; iron post stamped "156 B 1902"-----	155. 696
Chico, 6.4 miles north of, on east side of railroad, 5 feet north of milepost 192; iron post stamped "145 B 1902"-----	144. 810
Nord, in front of station; top of rail-----	148. 4
Nord, 2.3 miles north of, on east side of railroad, 5 feet north of milepost 195; iron post stamped "156 B 1902"-----	156. 086

VINA QUADRANGLE.

	Feet.
Cana, in front of station; top of rail-----	168.1
Cana, 0.7 mile north of, on east side of railroad, 3 feet north of milepost 198; iron post stamped "169 B 1902"-----	169.142
Cana, 3.6 miles north of, east side of railroad, 3 feet north of milepost 201; iron post stamped "179 B 1902"-----	179.088
Vina, 0.4 mile south of, on east side of railroad, 3 feet north of milepost 204; iron post stamped "202 B 1902"-----	202.206
Vina, in front of station; top of rail-----	206.4
Vina, 2.6 miles north of, on east side of railroad, 225 feet north of milepost 207, 12 feet from fence; iron post stamped "201 B 1902"-----	201.514

TEHAMA QUADRANGLE (RED BLUFF 1° QUADRANGLE).

Vina, 5.5 miles north of, on east side of railroad, 4 feet north of milepost 210; iron post stamped "210 B 1902"-----	210.571
Tehama, 450 feet south of station, 4 feet north of milepost 213, on east side of railroad; iron post stamped "213 B 1902"-----	213.107
Tehama, in front of station; top of rail-----	217.5
Tehama, 3 miles north of, on east side of railroad, 3 feet north of milepost 216; iron post stamped "237 B 1902"-----	237.512
Proberta, in front of station; top of rail at crossing-----	252.5
Proberta, 1.7 miles north of, on east side of railroad, 3 feet north of milepost 219; iron post stamped "266 B 1902"-----	266.035
Proberta, 4.7 miles north of station, on east side of railroad, 3 feet north of milepost 222; iron post stamped "291 B 1902"-----	289.889

RED BLUFF TO DUNSMUIR.

TEHAMA QUADRANGLE (RED BLUFF 1° QUADRANGLE).

Red Bluff, in front of station; top of rail-----	303.6
Red Bluff, at Crittington-street crossing, on north margin of road, 50 feet east of track, at milepost 225; iron post stamped "309 B 1902"-----	308.797

RED BLUFF 1° QUADRANGLE.

Red Bluff, 3.1 miles north of, on east side of railroad, 300 feet north of milepost 228, 15 feet from fence; iron post stamped "370 B 1902"-----	369.720
Red Bluff, 6 miles north of, on east side of railroad, 100 feet south of milepost 231, at telegraph pole; iron post stamped "437 B 1902"-----	437.073
Red Bluff, 9 miles north of, on east side of railroad, 400 feet north of milepost 234, at fence line; iron post stamped "591 B 1902"-----	591.014
Hooker, in front of station; top of rail-----	538.9
Hooker, 1.8 miles north of, 110 feet north of milepost 237, 30 feet west of track, at telegraph pole; iron post stamped "491 B 1902"-----	491.195
Hooker, 4.7 miles north of, on east side of railroad, 3 feet north of milepost 240; iron post stamped "433 B 1902"-----	433.244
Cottonwood, in front of station; top of rail-----	417.5

	Feet.
Cottonwood, 1 mile north of, on east side of railroad, 150 feet north of milepost 243, at telegraph pole; iron post stamped "421 B 1902"-----	421. 134
Cottonwood, 5 miles north of, on east side of railroad, 3 feet north of milepost 247; iron post stamped "464 B 1902"-----	464. 464
Anderson, in front of station; top of rail-----	428. 0
Anderson, 1.3 miles north of, on east side of railroad, 150 feet south of milepost 250, at telegraph pole; iron post stamped "434 B 1902"-----	434. 277
Anderson, 4.3 miles north of, on east side of railroad, 300 feet north of milepost 253, at telegraph pole; iron post stamped "470 B 1902"-----	470. 128

REDDING QUADRANGLE (RED BLUFF 1° QUADRANGLE).

Anderson, 7.2 miles north of, on east side of railroad, 3 feet north of milepost 256; iron post stamped "474 B 1902"-----	474. 066
Redding, 0.7 mile south of, on east side of railroad, 4 feet south of milepost 259; iron post stamped "532 B 1902"-----	531. 804
Redding court-house, first angle of wall on north side of east entrance; aluminum tablet stamped "590 B 1902"-----	589. 658
Middle Creek, in front of station; top of rail-----	521. 8
Middle Creek (Waugh post-office), 600 feet north of station, 15 feet west of track, at telegraph pole opposite hotel; iron post stamped "521 B 1902"-----	521. 299
Keswick, in front of station; top of rail-----	562. 9
Keswick, 0.6 mile north of, 100 feet north of milepost 266, 12 feet east of railroad telegraph pole; iron post stamped "569 B 1902"-----	569. 310
Copley, 5 feet south of southwest corner of schoolhouse (Flat Creek district); iron post stamped "729 B 1902"-----	729. 476
Copley, at freight house; top of upper rail-----	595. 4
Copley, 3.4 miles north of, 15 feet south of railroad, 150 feet west of milepost 273; iron post stamped "628 B 1902"-----	627. 714
Kennett, 1.3 miles west of, on east side of railroad, 100 feet south of milepost 276, at telegraph pole; iron post stamped "654 B 1902"-----	654. 141
Kennett, in front of station; top of rail-----	665. 3
Kennett, 1.8 miles north of, on east side of railroad, 300 feet north of milepost 279, at telegraph pole; iron post stamped "679 B 1902"-----	678. 728
Kennett, 4.8 miles north of, on east side of railroad, 300 feet north of milepost 282, at telegraph pole; iron post stamped "722 B 1902"-----	722. 492
Elmore, 3 feet west of fence west of Schoonover's house, 900 feet east of center of railroad trestle over Sacramento River, 58 feet south of tracks; iron post stamped "789 B 1902"-----	788. 741
Elmore, in front of station sign; top of rail-----	795. 8
Elmore, 3.7 miles north of, on east side of railroad, 5 feet from milepost 289; iron post stamped "901 B 1902"-----	901. 600
Baird (Gregory post-office), railroad crossing at station; top of rail-----	962. 3
Baird, 12 feet south of southeast corner of Smithson schoolhouse; iron post stamped "1022 B 1902"-----	1, 022. 643
Baird, 2.9 miles north of, on east side of railroad, 300 feet north of milepost 295, at telegraph pole; iron post stamped "1034 B 1902"-----	1, 034. 630
Delta, in front of station; top of rail-----	1, 133. 6

	Feet.
Delta, in front of schoolhouse, 3 feet north of center of porch, 100 feet south of Oregon road; iron post stamped "1319 B 1902"-----	1, 319. 608
Lamoine, 600 feet south of store, 20 feet south of bridge over stream, on east side of railroad, at telegraph pole; iron post stamped "1236 B 1902"-----	1, 236. 822
Lamoine, 2.1 miles north of, on east side of railroad, 8 feet north of milepost 304; iron post stamped "1320 B 1902"-----	1, 320. 737

SHASTA 1° QUADRANGLE.

Lamoine, 4.9 miles north of, on east side of railroad, 300 feet south of bridge No. 8 over Sacramento River, 10 feet north of telegraph pole; iron post stamped "1449 B 1902"-----	1, 449. 966
Sims, 1 mile south of, on east side of railroad, 300 feet south of milepost 310, at telegraph pole; iron post stamped "1607 B 1902"-----	1, 608. 010
Sims, in front of station; top of rail-----	1, 669. 9
Sims, 2 miles north of, on east side of railroad, 540 feet north of milepost 313, at telegraph pole; iron post stamped "1779 B 1902"-----	1, 780. 082
Sims, 5 miles north of, on east side of railroad, 300 feet north of milepost 316, at telegraph pole; iron post stamped "1900 B 1902"-----	1, 900. 900
Castella, in front of station; top of rail-----	1, 943. 6
Castella, 2.1 miles north of, on east side of railroad, 7 feet north of milepost 319; iron post stamped "2056 B 1902"-----	2, 057. 044
Castle Crag, in front of station; top of rail-----	2, 091. 8
Castle Crag, 2.1 miles north of, on east side of railroad, 150 feet north of milepost 322, 7 feet from telegraph pole; iron post stamped "2186 B 1902"-----	2, 187. 316
Dunsmuir, in front of station; top of rail-----	2, 284. 1

DUNSMUIR TO OREGON STATE LINE.

SHASTA 1° QUADRANGLE.

Dunsmuir, 1 mile north of, at upper Soda Springs flag station, 10 feet east of railroad, at corner of station; iron post stamped "2355 B 1902"-----	2, 356. 559
Shasta Springs, in front of station; top of rail-----	2, 539. 1
Shasta Springs, 1.1 miles north of, on east side of railroad, 5 feet from milepost 331; iron post stamped "2650 B 1902"-----	2, 651. 671
Shasta Springs, 4.1 miles north of, on east side of railroad, 5 feet from milepost 331; iron post stamped "2942 B 1902"-----	2, 943. 629
Mott, 35 feet south of station, on east side of railroad, 3 feet south of milepost 333; iron post stamped "3154 B 1902"-----	3, 154. 768
Mott, in front of station; top of rail-----	3, 154. 1
Mott, 2.8 miles north of, on east side of railroad, 4 feet north of fourth telegraph pole south of milepost 336; iron post stamped "3392 B 1902"-----	3, 393. 326
Sisson, in front of station; top of rail-----	3, 553. 0
Sisson, 0.6 mile north of, on east side of railroad, 150 feet north of milepost 339, 4 feet from telegraph pole; iron post stamped "3596 B 1902"-----	3, 597. 008
Upton, in front of station; top of rail-----	3, 703. 9

	Feet.
Upton, 2.3 miles north of, on east side of railroad, 8 feet from milepost 343; iron post stamped "3791 B 1902"-----	3,792.039
Upton, 5.4 miles north of, on east side of railroad, 10 feet from milepost 346; iron post stamped "3879 B 1902"-----	3,879.906
Igerna, in front of station; top of rail-----	3,732.7
Igerna, 1.6 miles north of, on west side of railroad, opposite milepost 349, 5 feet from telegraph pole; iron post stamped "3568 B 1902"-----	3,568.712
Weed, 1.9 miles north of, on east side of railroad, 2 feet from milepost 352; iron post stamped "3255 B 1902"-----	3,256.716
Edgewood, 600 feet south of station, on east side of railroad, at milepost 355; iron post stamped "2957 B 1902"-----	2,958.389
Edgewood, in front of station; top of rail-----	2,950.0
Edgewood, 2.8 miles north of, on east side of railroad, 5 feet north of milepost 358; iron post stamped "2909 B 1902"-----	2,910.178
Edgewood, 5.8 miles north of, on east side of railroad, 2 feet from milepost 361; iron post stamped "2824 B 1902"-----	2,825.403
Gazelle, in front of station; top of rail-----	2,756.8
Gazelle, 1.3 miles north of, on east side of railroad, 3 feet from milepost 364; iron post stamped "2717 B 1902"-----	2,718.258
Gazelle, 4.3 miles north of, on east side of railroad, at milepost 367; iron post stamped "2625 B 1902"-----	2,626.212
Gazelle, 7.2 miles north of, on east side of railroad, at milepost 370; iron post stamped "2554 B 1902"-----	2,555.433
Gazelle, 10.3 miles north of, on east side of railroad, at milepost 373; iron post stamped "2524 B 1902"-----	2,525.110
Montague, 1 mile south of, on east side of railroad, second telegraph pole north of milepost 376; iron post stamped "2518 B 1902"-----	2,518.845
Montague, in front of station; top of rail-----	2,538.4
Montague, 1.8 miles north of, on east side of railroad, at milepost 379; iron post stamped "2563 B 1902"-----	2,563.776
Montague, 4.8 miles north of, on east side of railroad, at first telegraph pole north of milepost 382; iron post stamped "2658 B 1902"-----	2,658.892
Montague, 7.7 miles north of, on east side of railroad, at first telegraph pole south of milepost 385; iron post stamped "2544 B 1903"-----	2,544.622
Ager, in front of station; top of rail-----	2,330.9
Ager, 800 feet north of station, on east side of railroad, at milepost 388; iron post stamped "2322 B 1903"-----	2,323.609
Ager, 3 miles north of, on west side of railroad, at milepost 391; iron post stamped "2115 B 1903"-----	2,115.804
Hornbrook, 0.8 mile south of, on west side of railroad, 200 feet south of milepost 394, at fence line; iron post stamped "2114 B 1903"-----	2,115.298
Hornbrook, in front of station; top of rail-----	2,151.7
Hornbrook, 2.2 miles north of, on east side of railroad, 30 feet north of milepost 397, at fence line; iron post stamped "2306 B 1903"-----	2,306.975
Hornbrook, 5.1 miles north of, on west side of railroad, 240 feet south of milepost 400, at telegraph pole; iron post stamped "2786 B 1903"-----	2,786.767
Hornbrook, 8.2 miles north of, on west side of railroad, at telegraph pole, opposite milepost 403; iron post stamped "2897 B 1903"-----	2,898.176
Cole, in front of station; top of rail-----	2,862.8

PRIMARY LEVELING.

ELSINORE, FLOWING WELL, INDIO SPECIAL, REDLANDS, SALTON, SAN BERNARDINO, SAN JACINTO,
AND YUMA QUADRANGLES.

RIVERSIDE, SAN BERNARDINO, AND SAN DIEGO COUNTIES.

The purpose of this double primary line was to establish bench marks at Yuma and to determine their elevations above mean sea level by direct connection with tidal gage.

The following elevations are the result of primary leveling by Mr. R. A. Farmer, October, 1902, to January, 1903, beginning at Colton at a bronze tablet stamped "978," set horizontally in brick wall over corner pier of the Transcontinental Hotel. The elevation originally accepted for this bench mark was determined by a double-rodged primary line run from San Pedro to San Bernardino, published in the Appendix to the Nineteenth Annual Report, but the value then given is now considered to be 0.7 foot too small. The elevation of this bench mark is now accepted as 979.073 feet above mean sea level as derived by connection at San Bernardino with the above line by precise leveling of 1906 of the United States Coast and Geodetic Survey from a more reliable tidal record at Point Loma near San Diego.

The portion of this line from Colton to Montmere is a single rerunning of a line previously run, as published in Appendix to the Nineteenth Annual Report, a second rerunning being made when local divergences were excessive.

From Montmere to Yuma the line, as it progressed, was checked by running forward a certain distance and then back over the same section. If there was a discrepancy in feet of more than $0.05 \sqrt{\text{circuit mileage}}$ between the two determinations the section was rerun a third time or more, until satisfactory results were obtained. At Yuma checks were obtained with the levels of the International boundary, as well as those of the Southern Pacific Company, the United States Geological Survey elevation being 0.2 foot lower than that obtained from the Southern Pacific Company, corrected to mean sea level for the bridge seat of the bridge across the Colorado River, and 0.18 foot lower than that obtained from the International Boundary Report by connection with monument No. 207 of the International boundary line.

COLTON, ALONG SOUTHERN PACIFIC RAILROAD, TO YUMA, ARIZ.

SAN BERNARDINO QUADRANGLE.

	Feet.
Colton, in front wall of Transcontinental Hotel; bronze tablet stamped "978 S B"-----	979.073
Mound City, reservoir east of depot, northeast corner of wall; copper bolt stamped "1079 S B"-----	1,079.762

REDLANDS QUADRANGLE.

	Feet.
Redlands Junction, east of station, west side of county road, and south line of Southern Pacific Company's right of way; iron post stamped "1201 S B"-----	1, 201. 693
Brookside, west of siding, west side of county road, at southeast corner of Brookside vineyard; iron post stamped "1301 S B"-----	1, 301. 906

ELSINORE QUADRANGLE.

San Timoteo district school, northwest corner of grounds; iron post stamped "1910 S B"-----	1, 911. 237
T. 3 S., between Rs. 2 and 1 W., north side of county road; iron post stamped "2297 S B"-----	2, 297. 835

SAN JACINTO QUADRANGLE.

Beaumont, Gray's brick store and warehouse, in the front wall at northwest corner; bronze tablet stamped "2575 S B"-----	2, 575. 909
Banning, opposite Hotel Banning, in east wall of Frayer brick block; bronze tablet stamped "2330 S B"-----	2, 330. 516
Cabazon, 7 feet east of southeast corner of section house, grounds north of track, in corner of stone-bordered walk; iron post stamped "1791 S B"-----	1, 791. 579
T. 3 S., between Rs. 2 and 3 E., east of road crossing on north side of Southern Pacific Company's right of way; iron post stamped "1442 S B"-----	1, 442. 584
Whitewater Siding, south of track, at northeast corner of section house grounds; iron post stamped "1130 S B"-----	1, 130. 633
Palm Springs, 170 feet east of station, at east end of row of palm trees, 13 feet south of track; iron post stamped "685 T"-----	686. 055
Palm Springs, 3.5 miles southeast of, 45 feet west of track, 4 feet northwest of milepost 592; iron post stamped "539 T"-----	540. 053

INDIO SPECIAL QUADRANGLE.

Rimlon, 0.16 mile southeast of signboard at section house, 45 feet southwest of track, near milepost 596; iron post stamped "342 T"-----	342. 910
Dry Camp, 45 feet southwest of track, 90 feet west of switch at northwest end of siding; iron post stamped "164 T"-----	164. 730
Myoma Siding, 100 feet west of, at west end of switch, 45 feet southwest of track; iron post stamped "70 T"-----	70. 761
Indio, in southeast corner of schoolhouse yard; iron post stamped "15 T" (below mean sea level)-----	- 14. 145
Woodspur, 50 feet southwest of track, at road crossing; iron post stamped "-66 T"-----	- 65. 344
Thermal, 300 feet northwest of signboard, 45 feet southwest of track, 5 feet northwest of telegraph pole; iron post stamped "-121 T"-----	-120. 087
Walters, 27 feet northwest of station, in corner of yard; iron post stamped "-189 T"-----	-188. 341
Montmere, 100 feet southeast of, switch stand at west end of siding, 45 feet south of track, 4 feet south of wagon road, 4 feet west of telegraph pole; iron post stamped "-248 T"-----	-247. 280

SALTON QUADRANGLE.

	Feet.
Salton, 50 feet north of post-office, 150 feet south of station, on railroad right of way line; iron post stamped "—257 SB"-----	256.537
Durmid, in northeast corner of section-house ground; iron post stamped "—248 S B"-----	247.060
Bertram, 50 feet south of railroad, 10 feet east of northeast corner of station; iron post stamped "—249 SB"-----	247.796
Frink, 50 feet south of station, 6 feet east of milepost; iron post stamped "—258 SB"-----	257.703
Volcano, in northeast corner of section-house grounds; iron post stamped "—221 S B"-----	220.039
Old Beach, at west end of switch, 8 feet east of milepost 666; iron post stamped "—124 SB"-----	122.899

FLOWING WELL QUADRANGLE.

Iris, 5 telegraph poles east of, 4 feet west of milepost 673; iron post stamped "77 SB" (above mean sea level)-----	77.257
Tortuga, 100 feet west of signboard, 4 feet east of milepost 677; iron post stamped "186 S B"-----	186.930
Milepost 680, 1,100 feet east of, 20 feet north of warning board at crossing; iron post stamped "220 SB"-----	220.800
Mammoth, 400 feet west of station, 50 feet south of railroad track; iron post stamped "259 S B"-----	259.610
Acolita, 50 feet south of track, 10 feet east of milepost 689; iron post stamped "271 S B"-----	271.376
Mesquite, 400 feet east of signboard at milepost 694; iron post stamped "295 S B"-----	295.249
Glamis, 1,800 feet east of station, 8 feet east of milepost 697; iron post stamped "338 S B"-----	338.690
Ruthven, 3 miles east of, east end of switch, 9 feet east of milepost 702; iron post stamped "379 S B"-----	379.380

YUMA QUADRANGLE.

Drylyn, 200 feet east of signboard, 8 feet east of milepost 708; iron post stamped "397 S B"-----	397.998
Cactus, 1,200 feet east of milepost 713, 4 feet west of signboard; iron post stamped "367 S B"-----	368.107
Ogilby, 300 feet west of section house, 6 feet east of milepost 715; iron post stamped "356 S B"-----	356.388
Knob, 200 feet west of station house; iron post stamped "294 SB"-----	294.741
Araz, 4 feet west of signboard; iron post stamped "156 S B"-----	157.126
Yuma, top of pier, north side of bridge over Colorado River; aluminum tablet stamped "137 S B"-----	138.100
Yuma, in front of passenger station; top of north rail-----	142.78

BLAISDELL, CAMP MOHAVE, EHRENBERG SPECIAL, NEEDLES SPECIAL, PARKER, PICACHO, AND YUMA QUADRANGLES.

RIVERSIDE, SAN BERNARDINO, AND SAN DIEGO COUNTIES.

The elevations in the following list are based upon a double primary-level line from San Bernardino to Yuma, based upon the United States Coast and Geodetic Survey precise-level line of 1906 from mean sea level at San Diego.

The leveling on Yuma quadrangle was done in 1902-3 under the direction of Mr. R. B. Marshall, topographer, by Messrs. C. J. Hoover, G. L. Gordon, and L. D. Ryus, levelmen; that on Picacho and Ehrenberg quadrangles was done in 1903 partly under Mr. Hersey Munroe, topographer, by E. W. Glafcke, levelman, and partly under Mr. Marshall by G. L. Gordon and L. D. Ryus; that on Parker quadrangle was done under Mr. Munroe partly in 1902-3 by Mr. Glafcke and partly in 1903 by Mr. S. E. Blout. That on Needles quadrangle was done partly in 1902 under Mr. E. C. Barnard, topographer, by Mr. H. Morrison, and partly in 1902-3 under Mr. Munroe by Messrs. Glafcke and Blout.

The leveling on Camp Mohave quadrangle was done in 1902 under Mr. Barnard by Mr. Morrison and that on quadrangle next to Parker in 1903 under Mr. Munroe by Mr. Blout.

YUMA QUADRANGLE.

YUMA; NORTHEAST ALONG WAGON ROAD, TO POTHOLES.

	Feet.
Yuma, 12.72 miles northeast of, 10 feet west of Yuma and Potholes road, north side of point of hill, south side of Pothole Canyon; iron post stamped "148 Y"-----	149.051

YUMA, NORTH ALONG ROAD, VIA MAGGIES WELL, TO PICACHO.

Maggies Well, T. 16 S., R. 22 E., southwest corner of section 1; iron post stamped "139 Y"-----	139.669
T. 15 S., R. 22 E., section 15, west side of road; iron post stamped "445 Y"-----	445.267
T. 14 S., R. 22 E., section 27, at intersection of stage road and small loop of road; iron post stamped "767 Y"-----	767.824
Picacho mine, 1.2 miles north of, on west side of road; iron post stamped "574 Y"-----	574.185

PICACHO, WEST ALONG PICACHO-YUMA ROAD, VIA AMERICAN MINE, TO OGLBY.

T. 15 S., R. 21 E., near southeast corner section 1, on north side of road; iron post stamped "635 Y"-----	636.051
American mine, 0.6 mile east of, on north side of road; iron post stamped "699 Y"-----	700.313

OGILBY, SOUTHWEST TO SAND HILLS (SINGLE SPUR LINE).

	Feet.
T. 16 S., R. 20 E., north side section 29, 5 miles southwest of Ogilby; iron post stamped "174 Y"-----	174.682

POINT 2 MILES NORTHEAST OF OGILBY, NORTH VIA HEDGE'S MINE 10 MILES (SINGLE SPUR LINE).

T. 14 S., R. 20 E., section 23, 4.3 miles north of Hedge's mine, 9.9 miles north of Ogilby; iron post stamped "697 Y"-----	698.233
---	---------

ARAZ, SOUTHWEST TO MEXICAN BOUNDARY.

Monument No. 207; base of masonry ^a -----	155.96
Monument No. 207, on United States side; iron post stamped "155 Y"-----	156.024
Monument No. 206; base of masonry-----	119.37
Monument No. 206, in foundation, United States side; top of bolt----	119.676

BLAISDELL QUADRANGLE.

POTHOLE, NORTH TO CASTLE DOME LANDING.

Castle Dome landing, 0.25 mile west of river, east side of road, at foot of hill; iron post stamped "165 Y"-----	165.943
---	---------

PICACHO QUADRANGLE.

CASTLE DOME LANDING, NORTHWEST TO PICACHO.

Ferguson's old pumping plant, south side of hill at foot of bluff, 100 feet west of river bank; iron post stamped "177 Y"-----	177.239
Picacho cyanide plant, 1 mile northwest of, 0.5 mile north of school- house, at point of hill west of road; iron post stamped "187 Y"-----	187.321

PICACHO, NORTHWARD ALONG WEST SIDE OF COLORADO RIVER, TO COMER'S RANCH.

Picacho, 8 miles north of, 33.90 miles south of Hodge's ranch, 20 feet east from road, in small saddle, 650 feet west of river, at upper end of large flat; iron post stamped "213 Y"-----	213.253
Hodge's ranch, 23.7 miles south of, 600 feet west of river, 150 feet east of cliffs, 50 feet west of road, north end of clearing in open flat; iron post stamped "208 Y"-----	208.919
Hodge's ranch, 18.5 miles south of, 30 feet west of road, on point of mesa 250 feet west of river; iron post stamped "224 Y"-----	224.388
Hodge's ranch, 14.68 miles south of, 10 feet west of forks of road, 500 feet southwest of old pumping station, at 4 tanks formerly used by Praymaster mine; iron post stamped "229 Y"-----	229.761
Hodge's ranch, 11.2 miles south of, 10 feet west of road, 750 feet north of Sobrino ranch, 200 feet due west of brush hut and corral; iron post stamped "232 Y"-----	232.536
Hodge's ranch, 3.5 miles southeast of, 25 feet east of road to Picacho, in small clearing in flat, 0.5 mile west of lagoon, 1 mile west of river; iron post stamped "227 Y"-----	227.374

^a Elevation by United States and Mexican Boundary Commission, 156.14 feet.

	Feet.
Hodge's ranch, 100 feet west of house, 200 feet west of lagoon, 300 feet south of county line between Santiago and Riverside counties, 15 feet west of road, in flat 19.7 miles southwest of Ehrensberg, Ariz.; iron post stamped "232 Y"-----	232. 196
Ehrenberg, 13.8 miles southwest of, 1.54 miles south of Comer's ranch, at forks of road in open flat; iron post stamped "241 Y"-----	241. 633

POINT 10 MILES NORTH OF PICACHO, ALONG ROAD MAKING CIRCUIT WEST, NORTH, AND EAST, TO POINT 12 MILES SOUTH OF HODGE'S RANCH.

Colorado River, 5.42 miles west of, half way between two triangulation signals on points in range of hills, on summit of divide at head of canyon; iron post stamped "1045 Y"-----	1045. 954
Summit of divide, 5 miles north of, 6 miles west of river at forks of two large washes, in view of three triangulation signal points on west side of river and of one on east side of river; iron post stamped "713 Y"-----	713. 650
Eagle oil well, 0.75 mile west of, 20 feet south of Ogilby and Palo Verde stage road; iron post stamped "561 Y"-----	561. 750

POINT 2.5 MILES SOUTH OF HODGE'S RANCH, ALONG ROAD WEST AND NORTH, TO SALTON-EHRENBERG ROAD.

Palo Verde post-office, 6.24 miles west of, on black rock mesa, 2 miles east of Spring-Peak; iron post stamped "583 Y"-----	583. 887
Hodge's mine, 0.5 mile south of, 80 feet north of Salton-Ehrenberg road, 1 mile east of triangulation signal on point of mesa; iron post stamped "444 Y"-----	444. 985

EHRENBERG SPECIAL QUADRANGLE.

COMER'S RANCH, NORTH ALONG ROAD ON WEST SIDE OF RIVER, TO EHRENBERG, ARIZ.

Ehrenberg, 8.5 miles southwest of, 1 miles west of river, 30 feet west of road, at site of old abandoned ranch; iron post stamped "253 Y"-----	252. 733
Ehrenberg, 4.5 miles southwest of, 1.5 miles west of river, 15 feet west of road, in valley of Blythe estate, 600 feet north of wash; iron post stamped "258 Y"-----	258. 395
Parker, 48 miles southwest of, 0.5 mile north of ranch house at forks of road, opposite and west of landing at Ehrenberg, 0.75 mile in open flat, 30 feet west of road; iron post stamped "269 Y"-----	270. 338

OPPOSITE EHRENBERG, ARIZ., NORTH ALONG WEST SIDE OF RIVER, TO LA CRESENTA MINING COMPANY'S HOUSE.

Parker, 41 miles southwest of, 0.35 mile west of river, between forks of road to Blythe ranch and Ehrenberg, in open flat; iron post stamped "285 Y"-----	286. 283
Parker, 36 miles southwest of, at east end of Santa Maria Mountains, 300 feet west of river, north end of Blythe estate, in limestone; bronze tablet stamped "299 Y"-----	299. 933
Parker, 32.1 miles southwest of, 0.25 mile west of river, south side of road wash, on east edge of bare mesa, in large boulder; bronze tablet stamped "334 Y"-----	334. 817

	Feet.
Parker, 28 miles southwest of, 1.25 miles west of river, 1 mile north-west of cabin foot of mesa, edge of flat, in large boulder; bronze tablet stamped "393 Y"-----	393. 852
Parker, 23.2 miles southwest of, 500 feet west of river, at southeast end of Riverside range of mountains, in ledge of limestone, point of rocks; bronze tablet stamped "360 Y"-----	361. 093
Parker, 18.2 miles southwest of, 40 feet east of northwest corner of adobe house of the La Cresenta Mining Company; bronze tablet stamped "364 Y"-----	364. 320

NORTH ALONG SALTON-EHRENBURG ROAD, VIA BLYTHE TRIANGULATION STATION, TO POINT
8 MILES NORTH OF EHRENBURG.

Salton road, 5.98 miles north of, 3 miles west of Willow Springs, on edge of second bench of mesa; iron post stamped "384 Y"-----	384. 547
Blythe triangulation station, 1 mile west of Mesquite Flat, at point of mesa; iron post stamped "390 Y"-----	391. 035
Blythe ranch, 1 mile west of, 600 feet east of mesa, 20 feet east of Palo Verde, 10 feet south of road; iron post stamped "297 Y"---	297. 776

PARKER QUADRANGLE.

NORTHEAST ALONG ROAD TO OPPOSITE BILL WILLIAMS FORK, THENCE NORTHWEST ALONG
ROAD TO LIVERPOOL LANDING.

Parker, 13.5 miles southwest of, top of mesa 0.5 mile west of river landing of Right & Lawrence Mining Company, 1.5 miles east of Riverside Mountain, in large boulder set in ground; bronze tablet stamped "405 Y"-----	405. 380
Parker, 8 miles southwest of, 0.25 mile west of river, opposite center of large island at head of big draw, on mesa; iron post stamped "415 Y"-----	415. 918
Parker, 3.5 miles west of, 600 feet west of river, top of mesa, 400 feet due west of triangulation point, on edge of same; iron post stamped "410 Y"-----	410. 731
Bill Williams Fork, 15.1 miles south of, 200 feet west of river, on east slope of mesa, 100 feet west of trail; iron post stamped "372 Y"---	372. 863
Bill Williams Fork, 10 miles south of, lower end of Empire Flats (California side of river), 700 feet west of river, 600 feet east of mesa in open flat; iron post stamped "370 Y"-----	370. 865
Bill Williams Fork, 4.6 miles south of, 800 feet west of big bend in river at point in cliffs, lower end of Empire Flats (California side), in saddle; iron post stamped "412 Y"-----	412. 458
Bill Williams Fork of the Colorado River, 1,200 feet due west of mouth of, 60 feet west of river, on west bank, on large mound of rock in ledge at foot of cliffs; bronze tablet stamped "400 Y"-----	401. 010
Pete McGuire, 300 feet north of (California side of river); iron post stamped "401 Y"-----	402. 308
Mellen, Ariz., 35 miles southeast of, 2.45 miles south of Tom Drennis stamp mill, 300 feet west of river, on east slope of mesa, in boulder; bronze tablet stamped "414 Y"-----	415. 330
Mellen, 30 miles southeast of, on west bank (California side) of river; bronze tablet stamped "417 Y"-----	417. 619
Chemehuevis Valley, lower end of, west bank of river, on point of mesa; iron post stamped "437 Y"-----	438. 036

LIVERPOOL LANDING, SOUTHWEST TO WEST WELL.

	Feet.
West Well, in Chemehuevis Valley, on east side of road to Parker, 50 feet north of pump; iron post stamped "762 Y"-----	762.309

POINT 11 MILES SOUTH OF WEST WELL, SOUTHEAST TO PARKER, ARIZ.

West Well, 11 miles south of, on west side of road, on summit of mountain; iron post stamped "1888 Y"-----	1,888.439
West Well, 15 miles south of, on west side of road; iron post stamped "1402 Y"-----	1,402.097
West Well, 21 miles south of, 5 miles west of Colorado River at point opposite Parker, on east side of road; iron post stamped "849 Y"-----	848.520

QUADRANGLE WEST OF PARKER.

NEEDLES TO WEST WELL, THENCE 11 MILES SOUTH.

West Well, 3 miles northwest of, on west side of road; iron post stamped "1048 Y"-----	1,048.925
West Well, 5 miles southwest of, on east side of road; iron post stamped "1232 Y"-----	1,233.121

NEEDLES SPECIAL QUADRANGLE.

LIVERPOOL LANDING, NORTH ALONG CALIFORNIA SIDE OF RIVER TO MELLEN, ARIZ.

Mellen, 15 miles southeast of, 0.45 mile west of river, 10 feet east of foot of mesa, in open flat; iron post stamped "431 Y"-----	431.547
Chemehuevis Valley, 2.5 miles northeast of triangulation signal at the northern end (California side) of, 600 feet west of Colorado River, near Mohave Rock; iron post stamped "437 Y"-----	438.060

MELLEN, NORTHWEST ALONG ATCHISON, TOPEKA AND SANTA FE RAILROAD, TO NEEDLES.

Needles, 4.25 miles south of, on west side of railroad, 6 feet east of milepost 373; iron post stamped "473 Y 1903"-----	474.030
--	---------

BENCH MARKS IN THE VICINITY OF NEEDLES.

Needles, Santa Fe station, at road crossing opposite dining room, west front; top of rail-----	481.646
Needles, U. S. Coast and Geodetic Survey, East Base, in stone monument; bronze tablet stamped "467 Y 1903"-----	467.292
Needles, U. S. Coast and Geodetic Survey, West Base, in stone monument; copper bolt (in top) stamped "U. S. G. S. B. M. 490"-----	491.082
Needles, U. S. Coast and Geodetic Survey, stone monument on Knoll triangulation station; point on southeast corner stamped "U. S. G. S. B. M. 680"-----	680.257
Needles, west corner of schoolhouse grounds, iron pipe in top of; concrete monument stamped "552 Y 1903"-----	552.487
Needles, U. S. Coast and Geodetic Survey monument in Catholic churchyard; bronze tablet stamped "503 Y 1903"-----	503.608

NEEDLES, NORTH 9 MILES (PART OF CIRCUIT TO FORT MOHAVE).

Needles, 3 miles northwest of, in sec. 13, T. 9 N., R. 22 E., on west side of road, west of river; iron post stamped "482 Y"-----	482.459
Needles, 8 miles northwest of, in sec. 22, T. 9 N., R. 22 E., on east side of road west of river; iron post stamped "488 Y"-----	488.276

NEEDLES, SOUTH ALONG ROAD, TO WEST WELL.

	Feet.
Needles, 5 miles south of, in sec. 20, T. 8 N., R. 23 E., on east side of road leading to Parker; iron post stamped "737 Y"-----	737. 991
Needles, 10 miles south of, in sec. 7, T. 7 N., R. 23 E., on east side of road leading to Parker; iron post stamped "1215 Y"-----	1, 215. 367
Needles, 15 miles south of, on west side of road leading to Parker; iron post stamped "1933 Y"-----	1, 934. 152
Needles, 20 miles south of, on west side of road leading to Parker; iron post stamped "1906 Y"-----	1, 906. 584
Needles, 25 miles south of, 8 miles northwest of West Well, on west side of road; iron post stamped "1613 Y"-----	1, 613. 262

NEEDLES, NORTHWEST ALONG ATCHISON, TOPEKA AND SANTA FE RAILROAD, TO KLINEFELT.

Needles, 7 miles northwest of, 80 feet east of section house at Java station; iron post stamped "968 Y"-----	969. 168
--	----------

QUADRANGLE WEST OF NEEDLES SPECIAL QUADRANGLE.

AT KLINEFELT STATION.

Klinefelt station, west side of track, opposite station signboard; iron post stamped "1213 Y"-----	1, 213. 414
--	-------------

CAMP MOHAVE QUADRANGLE.

FORT MOHAVE, SOUTH TO POINT 9 MILES NORTHWEST OF NEEDLES.

Fort Mohave, 4 miles southwest of, on road leading to Needles, on west side of river, at foot of knoll on west side of road; iron post stamped "479 Y"-----	479. 544
---	----------

HOLTVILLE, IMPERIAL, AND SALTON QUADRANGLES.

SAN DIEGO COUNTY.

The elevations in the following list are based on a secondary bench mark on the double primary-level line from San Bernardino to Yuma, a railroad spike in the base of milepost 667, 1 mile east of Old Beach station, Southern Pacific Railroad, 45 feet south of track, the accepted elevation being 104.360 feet below sea level.

The leveling was begun by Mr. W. V. Hardy, levelman, in 1904, and completed by Mr. S. N. Stoner, topographic aid, in 1905.

SALTON QUADRANGLE.

OLD BEACH, SOUTH ALONG SOUTHERN PACIFIC RAILROAD (IMPERIAL AND GULF BRANCH), TO ROCKWOOD SIDING.

	Feet.
Old Beach, 1 mile east of, milepost 667, 45 feet south of track; spike in base (below sea level)-----	— 104. 360
Alamo River, 200 feet north of railroad bridge, 45 feet east of track; iron post stamped "— 162 Y"-----	— 161. 263
Rockwood siding, 2 feet east of signboard; iron post stamped "— 157 Y"-----	— 156. 583

IMPERIAL QUADRANGLE.

BRAWLEY, SOUTH TO IMPERIAL.

	Feet.
Brawley, 0.5 mile north of, 3 feet east of milepost 6S4; iron post stamped "—117 Y"-----	—117. 186
Brawley station, 60 feet north of, at street crossing; top of rail-----	—112. 102
Brawley triangulation station; iron post stamped "—93 Y"-----	—92. 374
Brawley, 3.5 miles south of, 5 feet south of milepost 6S8, west of track; iron post stamped "—119 Y"-----	—118. 248
Imperial, 5 miles north of, at southwest corner of fence; iron post stamped "—91 Y"-----	—90. 175
Imperial, 3 miles north of, 30 feet north of wagon-road bridge over arroyo, west of road under second bank; iron post stamped "—88 Y"-----	—87. 138
Imperial, south wall of Imperial Hotel; bronze tablet stamped "—61 Y"-----	—59. 853
Imperial triangulation, station, 2,000 feet north of railroad station, 40 feet south of spur, east of main track; iron post stamped "—66 Y"-----	—65. 437

IMPERIAL, 1.8 MILES EAST TO CROSSROADS; THENCE SOUTH TO CALEXICO.

Imperial, 1.8 miles east of, in southeast angle of crossroads, 3 feet west of fence corner; iron post stamped "—67 Y"-----	—67. 110
Holtville, 60 feet south of, at Interurban Railroad crossing, west of road, 10 feet north of fence corner; iron post stamped "—50 Y"-----	—49. 121
Holtville, 2.9 miles south of, 100 feet south of Southern Pacific Railroad crossing, east of road; iron post stamped "—22 Y"-----	—21. 186
Heber siding, 2 feet east of crossing signboard; iron post stamped "—14 Y"-----	—13. 049

CALEXICO, WEST TO VICINITY OF INTERNATIONAL BOUNDARY MONUMENT NO. 221.

International boundary monument No. 221, northeast corner iron base-----	4. 252
International boundary monument No. 221, 0.6 mile west of; on north bank of Wisteria canal; iron post stamped "4 Y"-----	4. 859

BRAWLEY, WEST TO NEW RIVER.

Brawley, 1.5 miles west of, 80 feet east of New River Bridge, 30 feet south of road, 10 feet east of mesquite tree; iron post stamped "—133 Y"-----	—132. 206
---	-----------

HOLTVILLE QUADRANGLE.

CALEXICO, NORTH 2 MILES.

Calexico, north wall of bank building; bronze tablet stamped "+5 Y"-----	5. 644
Calexico, 2 miles north of, southwest corner of bridge over main canal; iron post stamped "+2 Y"-----	2. 569

INTERNATIONAL BOUNDARY MONUMENT NO. 219, EAST TO HOLT CANAL.

Calexico, 10 miles east of, 100 feet north of Holt canal, 70 feet south of Hemlock canal, 45 feet north of telephone line; iron post stamped "35 Y" ^a -----	35. 887
--	---------

^a Bench mark determined by a single unchecked line.

CALEXICO, ACROSS COUNTRY TO INTERNATIONAL BOUNDARY MONUMENT NO. 215.	
	Feet.
Calexico, 1.5 miles east of, International boundary monument No. 220, 2 feet east of; iron post stamped "6 Y" (from report, 1.804)	6.998
Calexico, 3.6 miles east of, north of road, west end of bridge over main canal; iron post stamped "17 Y"-----	18.134
Calexico, 4.6 miles east of, International boundary monument No. 219; top of bolt in base of shaft, north side (from report, 19.652)-----	25.046
Calexico, 4.6 miles east of, 6 feet north of Boundary monument No. 219; iron post stamped "26 Y"-----	26.942
Sharp triangulation station; iron post-----	60.693
Boundary monument No. 217; northeast corner of cement base (from report, 51.739)-----	55.782
Boundary monument No. 217, 9 feet north of; iron post stamped "56 Y"-----	56.878
Boundary monument No. 216, 1 mile west of; nail in top of 4 by 4 inch boundary stake-----	71.815
Boundary monument No. 215; northeast corner of cement base (from report, 93.144)-----	96.114
Boundary monument No. 215, 6 feet north of; iron post stamped "96 Y"-----	97.113
CABAKER JUNCTION, ALONG HOLTVILLE INTERURBAN RAILROAD TO HOLTVILLE; THENCE ALONG ROAD 2.8 MILES EAST; THENCE SOUTHEAST TO BOUNDARY MONUMENT NO. 215.	
Brice siding, 75 feet east of east end of switch, 35 feet south of track; iron post stamped "--48 Y"-----	-47.419
Gleason siding, 45 feet south of track, midway between switch targets; iron post stamped "--58 Y"-----	-57.115
Holtville, at northeast corner of Alamo Hotel; bronze tablet stamped "--12 Y"-----	-9.114
Holtville, 2.8 miles east of, at corner of fence, 60 feet west of No. 5 canal; 1,000 feet north of drop in canal near township corner; iron post stamped "--7 Y"-----	-6.022
T. 16 S., R. 16 E., 400 feet west of quarter corner sec. 10, south side; iron post stamped "19 Y"-----	19.534
INTERNATIONAL BOUNDARY MONUMENT NO. 219, OVER MESA TO WAGON BRIDGE OVER ALAMITOS CANAL; THENCE ALONG COUNTY ROAD TO HOLTVILLE.	
Boundary monument No. 219, 6 feet north of; iron post stamped "26 Y"-----	26.942
Alamitos canal, bridge near quarter corner between sections 28 and 33, 10 feet east of northeast corner; iron post stamped "12 Y"-----	12.648
Holtville, 1 mile south of, at triangulation station; top of iron post stamped "6 Y"-----	6.581
SUNSET SPRINGS, ACROSS COUNTRY AND ALONG ROAD TO HOLTVILLE.	
Sunset Springs, 4.5 miles southwest of, west side of main canal No. 5, at north side of headgate to Oak canal; iron post stamped "--53 Y"-----	-51.759
HOLTVILLE, EAST ACROSS COUNTRY TO 2.5 MILES EAST OF HARDY TRIANGULATION STATION; THENCE TO SUNSET SPRINGS.	
Holtville, 6.1 miles east of, at old beach rim; iron post stamped "57 Y"-----	57.792

	Feet.
Holtville, 10 miles northeast of; iron post stamped "79 Y"-----	79.829
Holtville, 13 miles northeast of, east of low sand ridge; iron post stamped "112 Y"-----	112.834
Hardy triangulation station, 2.5 miles west of, on summit of hill; iron post stamped "140 Y"-----	140.913
Hardy triangulation station, 6 miles northwest of; iron post stamped "100 Y"-----	100.951
Sunset triangulation station, 4 miles east of, 1 mile northeast of Deer Park; iron post stamped "76 Y"-----	77.010
Sunset triangulation station, on summit; iron post stamped "97 Y"---	97.875
Sunset Springs, 10 feet west of; iron post stamped "-44 Y"-----	-42.719

INTERNATIONAL BOUNDARY MONUMENT NO. 215, ACROSS COUNTRY, TO 2.5 MILES WEST OF HARDY TRIANGULATION STATION.

Boundary monument No. 215, 4.5 miles northeast of; iron post stamped "131 Y"-----	131.843
Boundary monument No. 215, 8 miles northeast of; iron post stamped "132 Y"-----	132.809
Boundary monument No. 215, 11 miles northeast of; iron post stamped "128 Y"-----	128.796
Boundary monument No. 215, 14.3 miles northeast of, 0.75 mile south of Hardy triangulation station, west edge of sand; iron post stamped "132 Y"-----	132.714

INTERNATIONAL BOUNDARY MONUMENT NO. 217, ACROSS MESA AND ALONG ROAD, TO HOLTVILLE.

Holt and Hickory canals 50 feet south of junction, south of road west of Holt canal, northeast corner of wire fence; iron post stamped "14 Y"-----	15.216
--	--------

SUNSET SPRINGS, WEST TO J. W. HART'S RESIDENCE AND RETURN.

Residence of J. W. Hart, 150 feet south of, 15 feet north of check in Orchard canal; iron post stamped "-123 Y"-----	-121.705
--	----------

CAMPO, CUYAMACA, JAMUL, LA JOLLA, AND SAN DIEGO QUADRANGLES.

SAN DIEGO COUNTY.

The elevations in the following list are based upon a bronze tablet in the foundation pier, north of the southeast corner of east wing of the San Diego County court-house, 4 feet above ground, stamped "S D". The elevation of this is now accepted as 42.342 feet above mean sea level as obtained by United States Coast and Geodetic Survey precise leveling of 1906 from Point Loma, which recovered also other bench marks of this list at American Park, Linda Vista, and Sorrento.

The double-rodged line Green Valley to San Diego, on La Jolla and San Diego quadrangles, was run in 1898 by Mr. George H. Herrold, levelman; other work on these two quadrangles was done in 1901 under Mr. J. E. Rockhold, topographer, by Mr. W. V. Hardy, levelman, and also on San Diego quadrangle in 1902 under Mr. E. T.

Perkins by Mr. C. L. Nelson. The leveling on Cuyamaca quadrangle was done under Mr. E. T. Perkins in 1901-2, by Mr. Hardy, and in 1902 by Mr. Nelson.

STANDARD BENCH MARKS OF THE UNITED STATES COAST AND GEODETIC SURVEY ON SAN DIEGO AND LA JOLLA QUADRANGLES.

SAN DIEGO QUADRANGLE.

	Feet.
San Diego, tidal 7, directly over tidal 6, in the surface of a cement collar or encasement built around the pile as a protection against destructive sea life, toward the northwest corner of the cement; three-fourths-inch hole 2 inches deep filled with babbitt metal (a rod held upon this point clears the north side of the pier)-----	1. 959
San Diego, tidal 3, in the United States Quarantine Grounds, near the inner end of the pier and southwest of the blacksmith shop, at center of the top of a cement monument, 1 foot square and 2 feet long, projecting 1 foot above the ground, resting upon a pier built of rock and cement upon the sand, 3 feet deep, 2.5 by 4 feet at the bottom, and 2 by 1.5 feet at the top; monument mark "U. S. C. S. 1906" and two diagonal lines, with a light dot at the center-----	6.167
San Diego, tidal 2, near the northeast corner of the residence of the quarantine surgeon, on the cover of a sewer, in a granite slab 4 feet square, resting on a brick foundation and having an iron-covered manhole 2 feet in diameter in its center; drill hole filled with lead (3½ inches from the edge of the iron cover and northwest of the center of the manhole)-----	10. 086
San Diego, tidal 5, in the United States Quarantine Grounds, near the southeast corner of the Cottage Hospital, on the cover of a sewer, a granite slab 4 feet square, cemented upon masonry and having an iron manhole 2 feet in diameter in its center; three-fourths-inch hole 2 inches deep, filled with babbitt metal flush with the surface (6.5 inches from the manhole, on the southeast corner) _	7. 780
San Diego, tidal 4, outside the United States Quarantine Grounds, near the northwest corner, about 110 feet north of the fence; cement pier or monument similar to tidal 3 (the soil at the depth of 3 feet and for about a foot above is almost a hardpan)-----	12. 486
San Diego, tidal 1, about 400 feet almost due north of the northwest corner of the United States Quarantine Grounds; center of the top of a granite block 10 inches square-----	8. 721
A. About 1.25 miles north of Roseville, Point Loma, set in hardpan, at the inside corner of the public road leading from Roseville to Old Town, in range with the telephone poles and 1 meter south of the pole set in the corner; Coast Survey iron B. M. post-----	33. 319
B. About 1½ miles north of San Diego, on the Atchison, Topeka and Santa Fe Railway right of way, about 50 meters north of milepost 266, on west end of concrete culvert "C 266" in the corner of the horizontal surface, 2½ meters below the rail; Coast Survey B. M. tablet-----	20. 622
C. San Diego, at southwest corner of Fir and California streets, on the Atchison, Topeka and Santa Fe Railway right of way, 3 meters west of track, on west side of iron rim to a manhole; surface within an outlined square 1 inch on each side-----	23. 560

LA JOLLA QUADRANGLE.

	Feet.
D. Old Town, about 100 meters east of the Atchison, Topeka and Santa Fe Railway, set in hardpan, in the southwest corner of the public school grounds; stone post 4 feet long by 6 inches square, projecting 6 inches above ground, with a hole cut in top 2.5 centimeters square and about 4 millimeters deep, bottom of which is B. M. (top of post lettered "U. S. B. M.")-----	25. 428
E. About 1 mile north of Atwood, on the Atchison, Topeka and Santa Fe Railway right of way, at west end of concrete culvert F 260, in center of the horizontal surface; three-eighths-inch copper bolt 2 inches long, set (in lead or cement) flush with surface-----	62. 942
F. About 1.25 miles northwest of Ladrillo, 25 meters northwest of milepost 25S, set in clay, in the corner of a fence, one-third meter east of the Atchison, Topeka and Santa Fe Railway right of way; iron post, same as "A"-----	97. 038
G. Selwyn, on the Atchison, Topeka and Santa Fe right of way, about 80 meters west of signboard "Selwyn," 16 meters north of track; stone post, same as "D"-----	232. 428
H. Sorrento, about 75 meters southwest of the Atchison, Topeka and Santa Fe Railway station, in the corner of the fence, on land owned by John Works; stone post, same as "D"-----	40. 422
I. About 1 mile south of Del Mar, on the Atchison, Topeka and Santa Fe right of way, 1 meter south of the second telegraph pole south of the road crossing, 15 meters east of the track and set in sand 3 meters above rail; iron post, same as "A"-----	151. 995
J. Del Mar, on West Tenth street, about 100 meters west of the Atchison, Topeka and Santa Fe right of way, on land owned by J. W. Bennett, on the east face of the old cement foundation in center of the vertical surface, three-fourths meter above ground; copper bolt, same as "E"-----	90. 533

STANDARD BENCH MARKS OF THE UNITED STATES GEOLOGICAL SURVEY.

LA JOLLA QUADRANGLE.

GREEN VALLEY, SOUTH ALONG ROAD, TO POWAY DIVIDE; THENCE SOUTHWEST, VIA LINDA VISTA MESA AND MURRAY CANYON, TO NORTH (OLD TOWN) SAN DIEGO (DOUBLE-RODDED LINE).

Watson's ranch, 5 feet east of fence corner, north side of Powey road, at junction with San Diego road; iron post stamped "585"-----	585. 941
Merton post-office, southeast corner of junction of Poway and San Diego road; iron post stamped "438"-----	438. 890
Poway divide, on south side of road; iron post stamped "967"-----	967. 900
Virginia post-office, 0.75 mile southwest of, in forks of road where road down valley leaves San Diego road; iron post stamped "578"-----	578. 897
Linda Vista Mesa, junction of Escondido and Linda Vista road, 8.5 miles north of San Diego; iron post stamped "417"-----	417. 393
Linda Vista Mesa, head of grade out of Mission Valley, on east side of Escondido road and south end of mesa road; iron post stamped "394"-----	394. 357
County Hospital, north of, west side of road to San Diego and 40 feet south of road to Old Town; iron post stamped "28"-----	28. 378.

	Feet.
Old Town (San Diego), south and east of motor track, in west wall at northwest corner of brick building, 2.6 feet above porch floor; copper bolt stamped "U. S. G. S. 44 ft. B. M."-----	44.335
SAN DIEGO COUNTY HOSPITAL, ALONG COUNTY ROAD, TO MORENA; THENCE ALONG SAN DIEGO, PACIFIC BEACH AND LA JOLLA RAILWAY TO RACE TRACK; THENCE ALONG SOUTHERN CALIFORNIA RAILWAY TO SORRENTO.	
Moreno, in front of station; top of rail-----	15.6
Race Track, southwest corner of station; top of rail-----	21.0
American Park race track, 710 feet north of station, at southwest angle of junction of road to Pacific Beach; iron post stamped "25 S D" (recovered by U. S. Coast and Geodetic Survey)-----	25.433
Ladrillo, 2 miles north of, 600 feet west of G. N. Gilbert's ranch house; at junction of road to house with road from San Diego to Sorrento; iron post stamped "176 S D"-----	176.640
Selwyn, at signboard; top of rail-----	236.3
Linda Vista, 25 feet west of section house, 10 feet east of siding, in northwest corner of yard; iron post stamped "376 S D" (recovered by U. S. Coast and Geodetic Survey)-----	376.706
LINDA VISTA, EAST ALONG WAGON ROAD TO VIRGINIA.	
Linda Vista, 2.4 miles east of, at northwest angle of intersection of roads; iron post stamped "452 S D"-----	452.895
SORRENTO, EAST ALONG COUNTY ROAD, TO MERTON.	
Sorrento, in front of station; top of rail-----	31.8
Sorrento, 35 feet north of station, 15 feet northwest of section house, 25 feet east of road crossing; iron post stamped "31 S D" (recovered by U. S. Coast and Geodetic Survey)-----	31.611
Los Perasquitos ranch house, 0.7 mile east of, at intersection of roads; iron post stamped "245 S D"-----	245.743
SORRENTO, NORTH 1.5 MILES ALONG SOUTHERN CALIFORNIA RAILWAY; THENCE BY WAGON ROAD, VIA SAN DIEGUITO SCHOOLHOUSE, TO LOS PERASQUITOS RANCH.	
San Dieguito schoolhouse, 2 feet west of, 1 foot south of porch, at entrance; iron post stamped "53 S D"-----	53.606
San Dieguito schoolhouse, 4.3 miles east of, at junction of roads; iron post stamped "348 S D"-----	348.742
SAN DIEGO COUNTY HOSPITAL, VIA COUNTY ROAD UP SAN DIEGO RIVER, TO OLD MISSION DAM; THENCE SOUTH TO LA MESA.	
Grantville, at entrance to schoolhouse, on west side of porch; iron post stamped "123 S D"-----	123.456
Old Mission dam, 125 feet southeast of, 100 feet south of San Diego River, 70 feet north of road, 35 feet east of windmill; iron post stamped "288 S D"-----	288.513
La Mesa Springs, at northeast corner of La Mesa Lemon Company's store, in brick front, 2.5 feet above porch floor; bronze tablet stamped "539 S D"-----	540.061

LA MESA SPRINGS, WEST ALONG COUNTY ROAD VIA SAN DIEGO NORMAL SCHOOL, TO SAN DIEGO.

	Feet.
San Diego Normal School, at east side of main entrance, in south face of baluster, set flush with vertical surface 3 feet above ground; bronze tablet stamped "355 S D"-----	356.024

SAN DIEGO QUADRANGLE.

QUARANTINE STATION, NORTHEAST TO NORTH SAN DIEGO (OLD TOWN); THENCE SOUTH ALONG PACIFIC BEACH MOTOR TRACK TO SAN DIEGO (DOUBLE-RODDED LINE).

Quarantine station, north of, on Point Loma, U. S. Coast and Geodetic Survey bench mark, "Tidal 1," granite block 10 inches square on top, marked "U. S." (north side marked "Ref. Mark," east side marked "Coast Survey," south side marked "1853-54-55," north side marked "for tide," latest value)-----	8.721
Roseville, at southeast corner of fenced school grounds; iron post stamped "35" (recovered by U. S. Coast and Geodetic Survey)----	35.295
San Diego County court-house, in the foundation pier north of southeast corner of east wing, 4 feet above ground; bronze tablet stamped "42 S D"-----	42.342
San Diego, City B. M., City Hall Building, corner Third and D streets; north corner of stone steps ^a (recovered by U. S. Coast and Geodetic Survey)-----	46.119
San Diego, in brick wall of west front of Creigne Building, 2 feet above step north of door, corner of Fourth and K streets; old U. S. Coast and Geodetic Survey bench mark, Geological Survey elevation-----	12.20

SAN DIEGO COURT-HOUSE, VIA NATIONAL CITY AND OTAY RAILWAY, TO OTAY.

San Diego, intersection of Front street and Southern California Railway track; top of rail-----	8.0
San Diego, at crossing of the National City and Otay and the San Diego, Cuyamaca and Eastern railways; top of rail-----	9.7
National City, at intersection of National avenue and First street; top of rail-----	27.0
National City, at Twenty-fifth street, 60 feet north of school, east of road; iron post stamped "57 S D"-----	57.832
Sweetwater Junction; top of rail-----	23.5
Chulavista, in front of station; top of rail-----	74.2
Otay, 1.5 miles south of schoolhouse, 1 foot east of porch, at east side of entrance; iron post stamped "62 S D"-----	62.572

SWEETWATER JUNCTION, VIA NATIONAL CITY AND OTAY RAILWAY, TO LA PRESA; THENCE NORTH TO LA MESA.

Bonita store, in front of platform; top of rail-----	60.3
Sweetwater schoolhouse, 85 feet northwest of, 25 feet south of road and 15 feet south-southeast of pepper tree; iron post stamped "65 S D"-----	65.554
Sunnyside, in front of station; top of rail-----	93.5
Aloha, in front of station; top of rail-----	152.2
La Presa, 1 mile southwest of, 130 feet northeast of signboard at intersection of roads; iron post stamped "238 S D"-----	238.566

^a The elevation of this bench mark by the city datum is 40 feet.

OTAY, ALONG COUNTY ROAD EAST, TO WEST LINE OF OTAY RANCH.

	Feet.
T. 18 S., R. 1 W., sec. 20, 3 feet north of east gate to Dr. Wiard's field, 2 feet east of west line to Otay ranch, 10 feet northwest of intersection of roads; iron post stamped "149 S D"-----	149. 515

JAMUL 15' (CUYAMACA 30') QUADRANGLE.

WEST LINE OF OTAY RANCH, NORTHEAST TO JAMUL RANCH.

Lower Otay dam, 33 feet southeast of east end of sec. 18, T. 18 S., R. 1 E., 70 feet east of intersection of filled road with dam, on northwest face of boulder 4 by 3 by 2 feet; bronze tablet stamped "486 S D"-----	486. 569
--	----------

T. 18 S., R. 1 E., sec. 4, 300 feet northwest of Jones's house, 50 feet northeast of intersection of roads, on top of boulder 3 by 3 by 1.5 feet; bronze tablet stamped "514 S D"-----	514. 887
--	----------

JAMUL RANCH, ALONG COUNTY ROAD NORTH, TO JAMUL POST-OFFICE; THENCE WEST TO LA PRESA.

Jamul, 231 feet northeast of schoolhouse, 3 feet east of southeast corner of Barrett's property, 25 feet northeast of intersection of roads, on top of boulder 2.5 by 2 by 1 foot; bronze tablet stamped "1040 S D"-----	1, 040. 274
--	-------------

T. 16 S., R. 1 W., on San Bernardino meridian, 2 feet south of northeast corner sec. 36, 400 feet north of Sweetwater River, about 1 mile northeast of forks of road to La Presa and Jamul; iron post stamped "342 S D"-----	342. 413
--	----------

JAMUL RANCH, EAST ALONG COUNTY ROAD 3.5 MILES, TO LYON PEAK ROAD.

Intersection of Jamul and Lyon Peak road with road branching to Lawson Valley, 35 feet northwest of, on south face of boulder 9 by 9 by 9 feet, 4 feet above ground; bronze tablet stamped "1400 S D"-----	1, 400. 549
--	-------------

FORKS OF ROAD 3.5 MILES EAST OF JAMUL RANCH, NORTHWEST VIA COUNTY ROAD, TO DIVIDE BETWEEN WOOD VALLEY AND LEE VALLEY.

Jamul, 3.5 miles east of, T. 16 S., R. 2 E., near southwest corner of section 31, on ridge divide between Wood and Lee valleys, at intersection of Lyons and Lawson Valley roads, 8 feet northeast of oak tree; iron post stamped "1789 S D"-----	1, 789. 549
---	-------------

JAMUL RANCH, SOUTHEAST ALONG COUNTY ROAD, TO DALZURA.

Dalzura schoolhouse, 120 feet south of, 6 feet north of creek ford, 6 feet north of road, on top of granite boulder; bronze tablet stamped "1243 S D"-----	1, 243. 680
--	-------------

CUYAMACA QUADRANGLE.

EAST OF JAMUL RANCH, EAST ALONG COUNTY ROAD, TO MORENA DAM; THENCE SOUTH TO CAMPO.

Pine Valley station, 2.5 miles west of, sec. 5, T. 17 S., R. 3 E., 500 feet southeast of old adobe building, 15 feet north of road at summit, in top of granite boulder; bronze tablet stamped "2108 S D"-----	2, 110. 642
--	-------------

Morena dam, 0.4 mile north of sec. 14, T. 17 S., R. 4 E., near quarter corner, 170 feet east of road; iron post stamped "3010 S D"-----	3, 010. 134
---	-------------

DALZURA, SOUTHEAST ALONG COUNTY ROAD, TO CAMPO.

	Feet.
Eisenecke, sec. 8, T. 18 S., R. 3 E., 81 feet west of Barnight's house, 36 feet north of barn, 27 feet north of road, in granite boulder, 1 foot above ground; bronze tablet stamped "875 S D"-----	875.539
Potrero, 300 feet west of post-office, sec. 18, T. 18 S., R. 4 E., at intersection of roads, 0.7 foot below top of boulder 4 feet high; iron post stamped "2323 S D"-----	2,323.478
T. 18 S., R. 4 E., sec. 24, at first crossing of Campo Creek, 200 feet west of ford, 3 feet north of road, 100 feet east of turn, on south face of boulder 10 by 7 by 8 feet; bronze tablet stamped "2189 S D"-----	2,189.483

FORK OF ROAD, 2.5 MILES NORTHWEST OF PINE VALLEY STATION, NORTH ALONG COUNTY ROAD, TO DESCANSO; THENCE SOUTHEAST, VIA PINE VALLEY POST-OFFICE, TO MORENA DAM.

Japatul schoolhouse, 12 feet southeast of, sec. 15, T. 16 S., R. 3 E., in top of granite boulder 2.5 by 2.5 by 2 feet; bronze tablet stamped "2866 S D"-----	2,866.166
Descanso, 1.5 miles east of, 2 feet south of signpost, on west side of road, at junction of road to Campo; iron post stamped "3541 S D" ^a -----	3,541.126

PINE VALLEY POST-OFFICE, SOUTHWEST ALONG COUNTY ROAD, TO CORTE MADARA.

Corte Madara ranch house, 85 feet north of, sec. 21, T. 16 S., R. 4 E.; in top of granite boulder 6 by 6 by 1.5 feet; bronze tablet stamped "3965 S D"-----	3,965.135
---	-----------

DESCANSO, ALONG WAGON ROAD NORTHWEST, TO SUMMIT EAST OF VIEJAS VALLEY.

T. 15 S., R. 3 E., sec. 14, 3 miles west of Descanso, 16 feet southeast of road on summit east of Viejas Valley, in top of granite boulder 3 by 3 by 1.5 feet; bronze tablet stamped "3672 S D"-----	3,672.448
--	-----------

FORKS OF ROAD, 1.5 MILES EAST OF DESCANSO, NORTH ALONG COUNTY ROAD VIA CUYAMACA, TO JULIAN.^b

Twin Pine Springs, 1.4 miles south of, 10 feet east of road, at junction of road running east to Mr. Hobb's house; iron post stamped "4132 S D"-----	4,132.421
--	-----------

CAMPO QUADRANGLE.

AT CAMPO.

Campo, 30 feet west of custom-house, 100 feet southeast of store, on vertical face of boulder 15 by 30 by 20 feet, 3 feet above ground; bronze tablet stamped "2543 S D"-----	2,543.511
---	-----------

^a No standard bench marks were left on remainder of this line.

^b This line, rerun as far as Cuyamaca, still closes 1.6 feet high on accepted height of Julian in the list on Ramona quadrangle.

CAPISTRANO, CLARK LAKE, CORONA, ELSINORE, ESCONDIDO, INDIO SPECIAL, OCEANSIDE, RAMONA, RIVERSIDE, SALTON, SAN JACINTO, AND SAN LUIS REY QUADRANGLES.

ORANGE, RIVERSIDE, AND SAN DIEGO COUNTIES.

The elevations in the following list are based upon the precise-level line run by the United States Coast and Geodetic Survey in 1906 along the Atchison, Topeka and Santa Fe Railroad from Point Loma (near San Diego), which recovered many bench marks of this list. They are also corrected in agreement with a checked primary-level line run by Mr. R. A. Farmer, topographer, east along the Southern Pacific Railroad from Colton to Montmere, checked throughout within primary limits by comparison with a former double-rodged line of 1898 by Mr. George H. Herrold, Colton to Palm Springs, and by a single line of 1901, thence to Montmere, by Mr. C. C. Ward, a third running being made when necessary.

Leveling on Capistrano and Corona quadrangles was done in 1899 under Mr. L. C. Fletcher, topographer; on Escondido, Oceanside, San Luis Rey, and south edge of Elsinore quadrangles in 1899 under Mr. W. T. Turner, topographer, on Ramona quadrangle in 1900; and on Clark Lake, Indio Special, and Salton quadrangles in 1901, by Mr. Ward, levelman. Leveling was also done on Corona, Elsinore, Riverside, and San Jacinto quadrangles in 1897 and 1898 and a double-rodged line on Escondido and San Luis Rey quadrangles in 1898 by Mr. Herrold, levelman, and on Corona quadrangle in 1899 by Mr. C. R. Smith, levelman.

A portion of these bench marks are stamped "S B," referring to San Bernardino, but the elevation now accepted there is 0.7 greater than the elevation previously published.

STANDARD BENCH MARKS OF THE UNITED STATES COAST AND GEODETIC SURVEY ALONG THE ATCHISON, TOPEKA AND SANTA FE RAILWAY.

OCEANSIDE QUADRANGLE (SAN LUIS REY 30' QUADRANGLE):

	Feet.
K. About 1.25 miles southeast of Encinitas, on the Atchison, Topeka and Santa Fe right of way, at the southwest end of the concrete culvert A 240, in the center of the horizontal surface of the coping; copper bolt.....	72. 734
L. Encinitas, 0.25 mile west of the Atchison, Topeka and Santa Fe Railway station, at the corner of Third and E streets, in the public school grounds, in the middle of the front yard, about 35 meters east of the schoolhouse; iron pipe, set in cement. (U. S. C. & G. S. B. M. post).....	91. 942
M. About 0.66 mile southeast of Carlsbad, 1 telegraph pole northwest of milepost 230, at the east corner of the road crossing, on the public highway, at the intersection of the Atchison, Topeka and Santa Fe right of way and the cattle-yard fences; bottom of a hole 2.5 cm. square and about 4 mm. deep, cut in top of a stone post whose top is 6 inches square, projecting 6 inches above ground, and lettered "U. S. B. M".....	44. 156

	Feet.
N. Carlsbad, about 175 meters southwest of the Atchison, Topeka and Santa Fe Railway station, in the park owned by the Huntington Syndicate Company, at the east corner of the most northerly house, at the south end of the first concrete basement step; copper bolt, same as "K"-----	55.492
O. Oceanside, about 60 meters south of the Atchison, Topeka and Santa Fe Railway station, on railroad property, about 10 meters southwest of the track, and one-third meter outside of the fence; stone post with hole, same as "M"-----	44.420
P. Oceanside, on the south corner of First and Ditmar streets, in the northeast side of the First Methodist Episcopal Church, 0.66 meter from north corner and 1 meter above ground; copper bolt, same as "K"-----	83.805
Q. Oceanside, at the west corner of Second and Hill streets, on the step of the side entrance to the Bank of Oceanside Building; surface of an outlined square 1 inch on each side, unlettered-----	67.627
R. Oceanside, on the northwest side of Third street, between Tremont and Hill streets, in the brick store, 2½ blocks northeast of the Atchison, Topeka and Santa Fe Railway; Coast Survey B. M. tablet-----	64.438

SAN LUIS REY 30' QUADRANGLE.

S. About 0.66 mile southeast of Las Flores, on the Atchison, Topeka and Santa Fe right of way, 9½ telegraph poles southeast of milepost 219, 12 meters southwest of track; iron pipe set in clay, same as "L"-----	74.952
T. About one-third mile southeast of Las Flores, on the Atchison, Topeka and Santa Fe right of way, 1½ telegraph poles southeast of milepost 219, at the southwest end of concrete culvert A 220, in horizontal surface of coping, one-third meter from northwest corner, 3 meters below rail; copper bolt, same as "K"-----	58.324
U. Don, about 45 meters west of signboard "Don," between the Atchison, Topeka and Santa Fe right-of-way fence and the first telephone pole northwest of the warehouse; stone post with hole, same as "M"-----	136.736

CAPISTRANO QUADRANGLE.

V. Four-tenths mile west of San Onofre, about 150 meters west of the county road crossing, on the north side of the county road, one-third meter south of the Atchison, Topeka and Santa Fe right of way; stone post with hole, same as "M"-----	9.985
W. One-third mile northwest of Mateo, about 75 meters east of the Atchison, Topeka and Santa Fe Railway, 3 meters north of the county road, and 4 meters west of the bridge, near the corner of a fence; iron pipe, same as "L"-----	15.117
X. Two-thirds mile north of Serra, opposite the second telegraph pole southwest of milepost 199, one-half meter southeast of the Atchison, Topeka and Santa Fe right of way, in corner of a fence, at foot of a hill; iron pipe, same as "L"-----	41.252
Y. San Juan Capistrano, northeast of the Capistrano mission, in the southwest corner of the public school grounds; post-----	120.762

CORONA 30' QUADRANGLE.

	Feet.
Z. San Juan Capistrano, 0.25 mile north of the Atchison, Topeka and Santa Fe Railway station, on the right of way, about 100 meters north of milepost 197, at the east end of a large concrete culvert, on the horizontal surface of the coping, one-third meter from north end; tablet, same as "R"-----	115. 741
A. About 4½ miles south of El Toro, on the Atchison, Topeka and Santa Fe right of way, 1 telegraph pole north of the road crossing, at the west end of concrete culvert A 193, on the center of the horizontal surface of the coping; surface of a square 1 inch on each side, marked "U. S."-----	279. 973
B. About 1½ miles southeast of Irvine, opposite half-mile pole 194½, at the corner of the public road, one-third meter north of the Atchison, Topeka and Santa Fe right of way; stone post with hole, same as "M"-----	258. 079
C. Irvine, 40 meters south of the Atchison, Topeka and Santa Fe Railway station, in the north corner of the public school grounds; stone post with hole, same as "M"-----	193. 913
D. One-half mile south of Aliso, on the public highway, at the southwest corner of the road crossing near milepost 178; iron pipe, same as "L"-----	81. 256
E. Santa Ana, about 1½ miles southeast of the Atchison, Topeka and Santa Fe Railway station, 3½ telegraph poles west of milepost 177, at road crossing, on the south side of the track, in the horizontal surface of the irrigation culvert; copper bolt, same as "K"-----	105. 661
F. Santa Ana, one-third mile south of the Atchison, Topeka and Santa Fe Railway station, on the north side of Chestnut street, between the Southern Pacific Railway and the Atchison, Topeka and Santa Fe Railway; highest point of star on top of hydrant-----	122. 972
City, Santa Ana, on the northwest corner of Third and Garfield streets; copper wire set in center of a cement block-----	128. 023
G. Santa Ana, on the northwest corner of the City Hall, in water table, facing Third street, 1¼ meters above the walk; tablet, same as "R"-----	124. 144
H. Santa Ana, at the main entrance to the court-house, on the southeast corner of the east granite balustrade, 1 meter above the walk; 1 inch square, same as "Q"-----	133. 341
I. Orange, in the center of the west side of the plaza, 5 meters east of the west fence; iron pipe, set in cement, same as "L"-----	187. 024
J. Orange, in the Orange Union High School Building, at the north side of the main entrance, in the vertical surface of the concrete water table, one-third meter above the balustrade; tablet, same as "R"-----	197. 497
K. About 1¼ miles north of Orange, about 45 meters north of milepost 46, in the southeast corner of road crossing, on land of N. T. Edwards; stone post with hole, same as "M"-----	188. 466
L. Olive, about 225 meters northeast of the Atchison, Topeka and Santa Fe Railway station, in the public school grounds, in the angle formed by the west side of the front entrance and the main building, set in gravel; iron pipe, same as "L"-----	274. 166

	Feet.
M. About seven-eighths mile north of Olive, on the Atchison, Topeka and Santa Fe right of way, about 165 meters south of milepost 43, at the northeast corner of the plate girder bridge A 44, on the northeast corner of the steel base, about two-thirds meter below the rail; outlined square, in iron, same as "Q"-----	241. 070
N. Richfield, about 40 meters north of the railroad station, in northwest corner of highway junction, on range with telephone poles; stone post with hole, same as "M"-----	246. 365
O. Horse Shoe Bend, 1½ telegraph poles southwest of signboard "Horse Shoe Bend," at the road crossing, 8 meters south of small highway bridge, on the sloping surface of the concrete canal; tablet, same as "R"-----	381. 781
P. About 1½ miles west of Gypsum, on the Atchison, Topeka and Santa Fe right of way, at north end of county culvert C 35, on horizontal surface of coping, one-third meter from east end; copper bolt, lettered "U. S."-----	401. 920
Q. About 1 mile southwest of Crary, on the Atchison, Topeka and Santa Fe right of way, 23 meters south of milepost 29, 14 meters west of track, on north slope of small knoll; iron pipe, same as "L"-----	469. 960
R. About two-thirds mile northeast of Crary, on the Atchison, Topeka and Santa Fe right of way, at the northwest corner of the road crossing; stone post with hole, same as "M"-----	507. 120
S. Corona, directly south of the Atchison, Topeka and Santa Fe railway station, in center of the triangular park belonging to the railroad company; iron pipe, same as "L"-----	606. 256
T. Corona, on the west side of Main street, in the northeast corner of Masonic Block, one-half meter from the east face and 1½ meters above the walk; copper bolt, same as "K"-----	685. 455
City. Corona, at the northwest corner of Main and Sixth streets, 2 meters northeast of the main entrance to the Citizens' Bank; a metal plug set in the cement walk, corresponds to 171.20 feet, city datum-----	673. 761
U. Within the city limits, Riverside, 1 telegraph pole southwest of signboard "Alvord," in the easterly corner of the road crossing, on land owned by J. T. Hammer; iron pipe, same as "L"-----	669. 348

RIVERSIDE 15' QUADRANGLE (ELSINORE 30' QUADRANGLE).

V. Within the city limits, Riverside, about 2.75 miles southwest of Arlington, at the southernmost corner of the road crossing, at milepost 19, 1 meter northwest of telegraph pole; stone post with hole, same as "M"-----	720. 346
W. Within the city limits, Riverside, one-half mile northeast of Arlington, 4 telegraph poles northeast of milepost 16, in the northwest corner of road crossing, on land owned by R. L. Carpenter; stone post with hole, same as "M"-----	846. 068
X. Within the city limits, Riverside, about 1 mile southwest of Casa Blanca, on the Atchison, Topeka and Santa Fe right of way, 2½ telegraph poles northeast of milepost 15, on northwest side of northeast concrete abutment of trestle D 15, on the horizontal surface, at the angle; outlined square, same as "Q"-----	847. 502

	Feet.
Y. Riverside, on the north side of the county court-house, 2 meters west of northeast corner, in the center of small projection, one-third meter above ground; copper bolt, same as "K"-----	847.944
Z. Riverside, at the east side of the main entrance to the Carnegie Public Library, on the horizontal surface of the cement balustrade, one-third meter from building; tablet, same as "R"-----	857.405

STANDARD BENCH MARKS BY THE UNITED STATES GEOLOGICAL SURVEY.

CORONA QUADRANGLE.

MAGNOLIA CROSSING, SOUTHWEST ALONG MAGNOLIA AVENUE AND NORTHWEST ALONG HIGHWAY, TO RINCON; THENCE SOUTHWEST, ALONG ROAD, TO OLIVE.

May, 0.25 mile southwest of signboard (within city limits of Riverside), on Magnolia avenue, 250 feet northeast of crossing, in line with center row of trees; iron post stamped "687" (recovered by U. S. Coast and Geodetic Survey)-----	687.776
Corona, at northwest corner of Buena Vista avenue and Limon street (pipe line No. 2); iron post stamped "1049 S B"-----	1,050.291
Crary (Rincon post-office), on north side of street, at southeast corner of post-office and store; iron post stamped "494 S B" (recovered by U. S. Coast and Geodetic Survey)-----	494.559
Rincon, 7.3 miles west of, at head of grade where road finally leaves the sidehill slopes of Santa Ana Canyon, on north side of road; iron post stamped "402 S B"-----	402.576

OLIVE, SOUTHEAST UP SANTIAGO CREEK ROAD, TO DIVIDE; THENCE SOUTHWEST, DOWN ALISO CREEK, TO EL TORO.

Olive, 7.7 miles southeast of, at northeast corner of fence of Orange County Park, 20 feet to the right of road; iron post stamped "610 S B"-----	610.931
Olive, 13.7 miles southeast of, where road to Silverado turns off to east up side of gulch, 8 feet west of main road; iron post stamped "977 S B"-----	978.246
Olive, 17 miles southeast of, along Santiago Creek where Santiago Canyon road begins to climb sidehill to cross divide into Aliso Canyon, en route to El Toro; iron post stamped "1271 S B"-----	1,271.473
Aliso schoolhouse, about 45 feet from, in northwest corner of yard; iron post stamped "1041 S B"-----	1,041.808

EL TORO, SOUTH ALONG SOUTHERN CALIFORNIA RAILROAD, TO CAPISTRANO.

El Toro schoolhouse, 2 feet from front of, in angle formed by porch and building; iron post stamped "444 S B" (recovered by U. S. Coast and Geodetic Survey)-----	444.862
El Toro, 4.33 miles south of, 40 feet east of track, at road crossing, in fence corner; iron post stamped "278 S B"-----	279.093

TEMESCAL, NORTHWEST ALONG ROAD, TO CORONA.

Rugby district school, north side of sec. 21, T. 4 S., R. 6 W., northeast corner of grounds; iron post stamped "897"-----	898.000
Corona, southeast angle of, Porphyry quarry and Corona road; iron post stamped "903"-----	904.077

RINCON, NORTH ALONG ROAD, TO DEL CHINO; THENCE EAST TO LA SIERRA RANCH; THENCE SOUTH TO CORONA.

	Feet.
Chino rancho, where Central avenue crosses road running east and west, in northwest angle of road, 1.5 miles south of Southern Pacific station at Chino; iron post stamped "633 S B"-----	633.481
Chino rancho, at southeast corner of boundary; iron post stamped "602 S B"-----	603.269
La Sierra rancho (Sepulveda), 1 mile south of Cooks Ford, east side of road from Corona; iron post stamped "683 S B"-----	684.083

ESPERANZA SIDING, NORTHERLY VIA WAGON ROAD, TO SAN JUAN TRIANGULATION STATION.

San Juan triangulation station, in top of stone and cement monument; aluminum tablet stamped "1780 S B"-----	1,781.064
--	-----------

CAPISTRANO, NORTHEAST UP SAN JUAN CANYON.

Capistrano, 2 miles east of, 320 feet east of southwest corner sec. 32, T. 7 S., R. 7 W., north side of road; iron post stamped "149 S B"--	149.898
---	---------

CAPISTRANO QUADRANGLE.

CAPISTRANO, SOUTHEAST ALONG SOUTHERN CALIFORNIA RAILROAD, TO LA FLORES.

Capistrano, in northwest corner of flower plot south of station and east of track; iron post stamped "103 S B" (recovered by U. S. Coast and Geodetic Survey)-----	103.919
San Onofre siding, 20 feet front of section bunk house, in yard; iron post stamped "28 S B" (recovered by U. S. Coast and Geodetic Survey)-----	28.666
Don (formerly Jerome), 2.4 miles northwest of, 50 feet east of track, in fence corner on south side of cattle crossing; iron post stamped "165 S B" (recovered by U. S. Coast and Geodetic Survey)-----	165.671

RIVERSIDE 15' QUADRANGLE (ELSINORE 30' QUADRANGLE).

RIVERSIDE, SOUTHWEST ALONG SOUTHERN CALIFORNIA RAILWAY, TO MAGNOLIA AVENUE CROSSING.

Riverside, in alcove on right of main entrance to Loving Opera House, 4 feet above sidewalk, bronze tablet stamped "851" (recovered by U. S. Coast and Geodetic Survey)-----	851.577
Riverside, in alcove on right of main entrance to Loving Opera House, 1 foot above sidewalk, official city bench mark (elevation of which by city datum, as obtained from city engineers, is 848.777); copper bolt-----	848.653
Olivewood Cemetery, at canal crossing, 0.5 mile north of Pachapa siding; iron post stamped "863" (recovered by U. S. Coast and Geodetic Survey)-----	863.387
Casa Blanca, in southeast concrete foundation pier of station platform, 1 foot underground, protected by covered tin cylinder 4 inches high; copper bolt stamped "861" (recovered by U. S. Coast and Geodetic Survey)-----	861.721
Arlington, center of Southern California Railway station park; iron post stamped "814" (recovered by U. S. Coast and Geodetic Survey)-----	815.249

RIVERSIDE, EAST TO BOX SPRINGS; THENCE NORTH TO HIGH GROVE.

	Feet.
Riverside, Gage canal at Eighth street, in concrete bulkhead north of bridge; copper bolt stamped "1019"-----	1, 019. 821
Box Springs station, near crossing of Box Springs road and railroad, 65 feet west of track, 30 feet west of road; iron post stamped "1539"-----	1, 540. 064

BOX SPRINGS, SOUTH ALONG SOUTHERN CALIFORNIA RAILROAD, TO VALVERDE.

Valverde, east wall of brick warehouse, 4.5 feet above ground; copper bolt stamped "1509"-----	1, 509. 870
--	-------------

AT TEMESCAL.

Temescal, southwest corner of district school grounds; iron post stamped "1114"-----	1, 114. 432
--	-------------

ARLINGTON, SOUTHEAST TO EL SOBRANTE; THENCE EAST TO NEAR VALVERDE.

Mocking Bird Canyon, south of bowlder dam (natural), on Hogback 50 feet south of road; iron post stamped "1219"-----	1, 219. 536
El Sobrante, 75 feet northeast of crossing of Gavilan mine and tin-mine roads; iron post stamped "1447"-----	1, 447. 823
North Mount Glen, center of sec. 10, T. 4 S., R. 4 W., in northwest corner of school grounds and at southeast corner of crossing of Elsinore and Corona roads; iron posts stamped "1651"-----	1, 652. 047

ELSINORE 30' QUADRANGLE.

VALVERDE, ALONG SOUTHERN CALIFORNIA RAILROAD TO PERRIS; THENCE SOUTHWEST TO ELSINORE.

Perris, Santa Fe station, south wall of brick corridor; bronze tablet stamped "1456"-----	1, 456. 697
Canyon siding, 4.5 miles south of Perris, 30 feet north of road where it leaves canyon and crosses over hills to west; iron post stamped "1399"-----	1, 399. 860
Menifee road, east of bridge over San Jacinto River and east of railroad track on south side of road; iron post stamped "1318"-----	1, 318. 740
Elsinore, Consolidated Bank Building, in brickwork on right side of corner entrance; bronze tablet stamped "1305"-----	1, 305. 753

ELSINORE, NORTHWEST ALONG SOUTHERN CALIFORNIA RAILROAD AND HIGHWAY, TO TEMESCAL.

Terra Cotta, 1 mile east of, east of road forks, 3.5 miles northwest of Elsinore; iron post stamped "1258"-----	1, 258. 346
T. 5 S., R. 5 W., sec. 7, 3 feet east of quarter-section post of, secs. 7 and 12, north of Temescal road; iron post stamped "1142"-----	1, 143. 144

NEAR VALVERDE, EAST TO PERRIS INDIAN SCHOOL.

Perris Indian School, east side of sec. 7, T. 4 S., R. 3 E., in brick balcony south side of steps at southwest entrance to main building; copper bolt stamped "1456"-----	1, 457. 173
---	-------------

BOX SPRINGS, EAST ALONG ROAD, TO MORENO; THENCE SOUTH TO LAKE VIEW; THENCE SOUTHWEST, ALONG SOUTHERN CALIFORNIA RAILROAD, TO PERRIS.

Box Springs, north of siding, 65 feet west of Southern California Railway track and 30 feet west of road, at crossing of Box Springs road and railroad; iron post stamped "1539"-----	1, 540. 064
---	-------------

	Feet.
Alessandro boulevard and Heacock street, at northeast corner of street, T. 3 S., between Rs. 3 and 4 W.; iron post stamped "1565"_____	1, 565. 452
Moreno, in front wall of brick store, southeast corner of streets; bronze tablet stamped "1600"_____	1, 600. 596
Lake Bottom road, 50 feet west of, in granite boulder 2 feet high, 12 by 5 feet, at east point of hill 3 miles north of Lakeview; copper bolt stamped "1430"_____	1, 430. 770
Lakeview, northeast angle of lawn, public school grounds; iron post stamped "1468"_____	1, 468. 823

LAKEVIEW, SOUTHEAST ALONG ROAD, TO CASA LOMA.

Casa Loma ranch, at northeast fence corner, San Jacinto road and line between Rs. 1 and 2 W., T. 4 S.; iron post stamped "1466"_____	1, 466. 594
--	-------------

FERRIS, SOUTHEAST ALONG SOUTHERN CALIFORNIA RAILROAD (SAN JACINTO DIVISION), TO WINCHESTER; THENCE NORTHEAST ALONG SAME TO HEMET.

Benedict school, northeast corner of grounds and northeast corner of sec. 24, T. 5 S., R. 3 W.; iron post stamped "1500"_____	1, 500. 436
Winchester, east of front entrance of public school building; bronze tablet stamped "1470"_____	1, 470. 6
Egan siding, 1 mile southwest of, on line between Rs. 1 and 2 W., T. 5 S., north line of right of way; iron post stamped "1502"_____	1, 503. 249

ELSINORE, SOUTHEAST ALONG SOUTHERN CALIFORNIA RAILROAD, TO TEMECULA.

Wildomar, corner Main street and Murrieta road, in angle of L-shaped schoolhouse grounds; iron post stamped "1254"_____	1, 254. 733
Murrieta, in southwest corner of public school grounds; iron post stamped "1092"_____	1, 092. 966

TEMECULA, NORTH ALONG ROAD, TO WINCHESTER.

T. 7 S., R. 3 W., near range line east of sec. 13, top of grade; iron post stamped "1309"_____	1, 309. 586
Alamos district school grounds, east side sec. 5, T. 7 S., R. 2 W., 35 feet east of building; iron post stamped "1375"_____	1, 376. 007
T. 6 S., R. 2 W., sec. 28, 335 feet north of bridge; iron post stamped "1419"_____	1, 419. 516
T. 6 S., R. 2 W., northwest corner sec. 10, Domenigoni Valley, 2.5 miles south of Winchester, at southeast corner of fence, road to Hemet; iron post stamped "1458"_____	1, 458. 454

SAN JACINTO QUADRANGLE.^a

SAN JACINTO, SOUTH ALONG SOUTHERN CALIFORNIA RAILWAY, TO HEMET.

San Jacinto, north side of east entrance of public school building; bronze tablet stamped "1562"_____	1, 562. 463
Hemet grammar school, in brick column on north side of steps; bronze tablet stamped "1591"_____	1, 591. 827

^a For additional elevations on this quadrangle refer to Farmer's double-primary line, Colton to Yuma, along Southern Pacific Railway, p. 30.

HEMET, SOUTHEAST ALONG ROAD, TO KENWORTHY.

	Feet.
Vallevista, southwest corner of school grounds; iron post stamped "1765"-----	1, 765. 817
T. 5 S., R. 2 E., sec. 18, range line on west side of section, top of knoll 20 feet south of road and east of bridge; iron post stamped "2062"-----	2, 062. 771
T. 5 S., R. 2 E., sec. 27, near mouth of Strawberry Creek, 125 feet from east side of road, in granite bowlder; copper bolt stamped "2932"-----	2, 932. 732
T. 5 S., R. 2 E., sec. 25, near mouth of Johnson Creek, 170 feet north of bridge, east side of road, inside of angle in fence; iron post stamped "4443"-----	4, 443. 802
T. 5 S., R. 3 E., sec. 31, divide of Hemet Valley and San Jacinto drainage, 20 feet north of road; iron post stamped "4936"-----	4, 936. 765
T. 6 S., R. 3 E., sec. 10, Thomas's ranch, opposite and north of house, west of road at fence corner, on section line between sections 3 and 10; iron post stamped "4394"-----	4, 394. 718
T. 6 S., R. 3 E., sec. 25, Thomas's ranch, 10 feet east of south gate, where road forks to Kenworthy and Coahuila Valley; iron post stamped "4509"-----	4, 509. 751

KENWORTHY, SOUTHWEST ALONG ROAD, TO WILSON VALLEY.

Coahuila divide, 18 feet west of road; iron post stamped "4965"-----	4, 965. 988
T. 7 S., R. 3 E., sec. 21, Mission Indian Reservation, 20 feet west of north gate, on north side of road; iron post stamped "3836"-----	3, 836. 748
Coahuila Indian School, sec. 23, T. 7 S., R. 2 E., 3 feet north of the southwest corner of the chapel yard; iron post stamped "3635"-----	3, 635. 696
T. 8 S., R. 2 E., sec. 5, divide between Coahuila and Wilson valleys, 7 feet southeast of road; iron post stamped "3542"-----	3, 543. 057

WILSON VALLEY, NORTH ALONG ROAD VIA SAGE, TO HEMET.

T. 7 S., R. 1 E., sec. 20, Lewis Valley, east of road, 18 feet north of line fence between sections 20 and 29; iron post stamped "2130"-----	2, 130. 960
Sage post-office, east of, sec. 12, T. 7 S., R. 1 W., on east side of Coahuila road; iron post stamped "2283"-----	2, 283. 879
T. 6 S., R. 1 W., sec. 36, Sage divide, 10 feet east of road, 260 paces south of Hemet road; iron post stamped "2615"-----	2, 615. 855
T. 6 S., R. 1 W., sec. 4, Diamanta schoolhouse, in Diamond Valley, 0.5 mile west of county road, 20 feet east of entrance to building, in edge of lawn; iron post stamped "1626"-----	1, 626. 898

THREE MILES EAST OF BEAUMONT, NORTH TO SOUTHWEST CORNER SAN BERNARDINO FOREST RESERVE (DOUBLE-RODDED LINE).

Ts. 2 and 3 S., Rs. 1 E. and 1 W., common corner, at southwest corner of San Bernardino Forest Reserve, 1.5 miles north of railroad, 2 feet south of Forest Reserve monument, which is an iron pipe filled with concrete on San Bernardino meridian; iron post stamped "2710"-----	2, 710. 700
--	-------------

THREE MILES EAST OF BANNING, NORTH TO TOWNSHIP AND RANGE LINE CORNER (DOUBLE-RODDED LINE).

Ts. 2 and 3 S., Rs. 1 and 2 E., common corner, on south line of San Bernardino Forest Reserve, 1.25 miles north of Southern Pacific Railroad, in top of square iron post filled with concrete; copper bolt stamped "2342"-----	2, 342. 234
--	-------------

FROM 3.6 MILES EAST OF CABEZON, NORTH TO TOWNSHIP AND RANGE LINE CORNER (DOUBLE-RODDED LINE).

	Feet.
Ts. 2 and 3 S., Rs. 2 and 3 E., common corner, 2 feet north of San Bernardino Forest Reserve, 1.7 miles north of Southern Pacific Railroad; iron post stamped "1978" -----	1,978.563
WHITEWATER, SOUTHEAST ALONG ROAD, TO PALM SPRINGS; THENCE SOUTH UP PALM CANYON TRAIL, TO VANDEVENTER; THENCE NORTHWEST TO KENWORTHY.	
T. 3 S., R. 4 E., sec. 29, 2.5 miles southeast of trestle 584 F, 25 feet east of rocky point, 5 feet south of Rubble canal from Whitewater River to Palm Springs; iron post stamped "828" -----	828.681
Palm Springs, in south concrete wall hotel building; bronze tablet stamped "455" -----	455.833
Garden of Eden, on township line between Ts. 4 and 5 S., R. 4 E., east of Palm Canyon road; iron post stamped "557" -----	557.878
Garden of Eden, 3 miles south of, east side of Palm Canyon, in a grove of palms on southwest side of small canyon, side of trail; iron post stamped "1000" -----	1,000.720
Garden of Eden, 10 miles south of, in Palm Canyon, near rocky gorge, by west wall of canyon, 100 feet southwest of creek crossing, where trail leaves the main canyon and crosses hills to the east; iron post stamped "3000" -----	3,000.032
Vandeventer, north of house on a little knoll, in a granite boulder 3 feet high, 8 by 4 feet, 50 feet east of road to house just south of where it forks to Kenworthy; copper bolt stamped "4549" -----	4,549.646
Kenworthy, south of post-office, in a granite boulder 3 feet high, 7 by 5 feet, at rocky point 100 feet north of wash, by trail; bolt stamped "4566" -----	4,566.491

INDIO SPECIAL QUADRANGLE.^a

WALTERS, WEST, VIA MARTINEZ, TO TORO; THENCE NORTH TO INDIO.

Walters, 27 feet northwest of station, in corner of yard; iron post stamped "—189 T" (below sea level) -----	—188.341
Martinez Indian school, 40 feet southeast of, at northeast side of entrance to yard; iron post stamped "—135 T" -----	—134.114
Toro Indian Village, north side of, in northeast angle of intersection of road north to Indio with road east and west; iron post stamped "—111 T" -----	—110.122
Indio, 4.7 miles south of, sec. 12, T. 5 S., R. 7 E., at south side quarter corner; iron post stamped "—62 T" -----	— 61.125

INDIO, WESTERLY, VIA WHITEWATER RIVER ROAD, TO PALMDALE.

Indian Well, 70 feet south of; iron post stamped "97 T" -----	97.744
Indian Well, 3.9 miles northwest of, sec. 17, T. 5 S., R. 6 E., 6 feet south of road; iron post stamped "181 T" -----	181.549
Indian Well, 7.12 miles northwest of, sec. 12, T. 5 S., R. 5 E., 7 feet north of road and 25 feet north of spur of mountain; iron post stamped "230 T" -----	230.757
Palm Springs, 4.33 miles southeast of, sec. 29, T. 4 S., R. 5 E., 12 feet south of road, at point of mountain; iron post stamped "323 T" -----	323.654

^a For additional elevations on this quadrangle refer to Farmer's double primary line, Colton to Yuma, along Southern Pacific Railway, p. 30.

VANDEVENTER, EAST ALONG TRAIL AND MARTINEZ CANYON, TO MARTINEZ.

	Feet.
Vandeventer, 4 miles northeast of, 3 feet north of north bank of sand wash, 165 feet southwest of point where trail to Martinez leaves wash, in face of white ledge 2.5 by 3 by 2.5 feet; bronze tablet stamped "3871 T"-----	3, 871. 854
Deep Canyon, 40 feet west of edge of west bluff, 15 feet north of trail, in top of granite boulder 4.5 by 5 by 3 feet; bronze tablet stamped "3492 T"-----	3, 492. 906
Summit of divide between Deep and Martinez canyons, on west slope of Martinez Mountain, 25 feet northeast of trail, in southeast face of granite boulder 4 by 5 by 6 feet; bronze tablet stamped "5168 T"-----	5, 168. 832
Agua Alta Spring, 235 feet southwest of, on northeast side of trail, 70 feet northwest of sand wash, on northwest side of granite boulder 3.5 by 5 by 6 feet; bronze tablet stamped "4282 T"-----	4, 282. 623
Martinez Canyon, south side of, opposite mouth of Casa de Tahquitz Canyon, 420 feet from foot of steep side of trail, in top of flat granite boulder 2 by 8 by 9 feet; bronze tablet stamped "2537 T"-----	2, 537. 378
Martinez Canyon, 270 feet below junction with Black Canyon, in face of granite cliff on south side of wash; bronze tablet stamped "1584 T"-----	1, 584. 808
Martinez Canyon, north side of, at mouth, 5 miles southwest of Martinez Indian school, in face of granite cliff 4 feet above ground; bronze tablet stamped "655 T"-----	655. 841

WALTERS, SOUTH ALONG ROAD, TO SOUTH SIDE SEC. 26, T. 9 S., R. 9 E.

Alamo Bonito, south side of, near water hole, in triangle between roads; iron post stamped "—186 T"-----	—185. 201
Agua Dulce, at north end of Indian Village, 300 feet south of spring and garden, in road forks; iron post stamped "—183 T"-----	—182. 286
Figtree John, 140 feet southwest of reservoir at spring, 5 feet west of road, opposite fence corner; iron post stamped "—196 T"-----	—196. 250
Fish Spring, 1.12 miles south of, 6 feet east of road; iron post stamped "—233 T"-----	—232. 178
T. 9 S., R. 9 E., sec. 26, south side of section, 4.12 miles southeast of Fish Spring, 7 feet east of road; iron post stamped "—175 T"-----	—174. 116

AT SEVENTEEN PALMS (SOUTH SIDE SEC. 35, T. 10 S., R. 8 E.)

Seventeen Palms, 165 feet south of chimney, on west side of road; iron post stamped "410 T"-----	410. 828
--	----------

SALTON QUADRANGLE.^a

SEC. 26, T. 9 S., R. 9 E., SOUTH TO CLAY POINT.

T. 10 S., R. 9 E., quarter corner south side of sec. 12; iron post stamped "—39 T" (below sea level)-----	—38. 123
Clay Point, in forks of road at junction with road to water holes; iron post stamped "36 T"-----	36. 846

^a For additional elevations on this quadrangle refer to Farmer's double primary line, Colton to Yuma, along Southern Pacific Railway, p. 31.

CLARK LAKE QUADRANGLE.

CLAY POINT, SOUTHWEST ALONG TRAIL AND NORTHWEST, TO SEVENTEEN PALMS.

	Feet.
T. 11 S., R. 9 E., southeast corner of sec. 4; iron post stamped "71 T"-----	71. 904
SEVENTEEN PALMS, SOUTHWEST ALONG TRAIL TO BOREGO SPRINGS.	
Seventeen Palms, 3.2 miles southwest of, 8 feet east of road; iron post stamped "367 T"-----	367. 889
T. 11 S., R. 7 E., northeast corner of sec. 24; iron post stamped "336 T"-----	336. 779
Borego Springs, 60 feet south of, 25 feet north of cabin; iron post stamped "452 T"-----	452. 906

SAN LUIS REY 30' QUADRANGLE.

TEMECULA, ALONG ROAD SOUTH VIA RAINBOW TO SEC. 31, T. 10 S., R. 3 W. (DOUBLE-RODDED LINE.)

Temecula, in west foundation wall of schoolhouse; bronze tablet stamped "1019"-----	1, 019. 651
Temecula, 3.75 miles southeast of, east side of road, in north face of granite boulder 18 feet high and 12 feet broad; copper bolt stamped "U. S. G. S. 1155 Ft."-----	1, 155. 785
Rainbow post-office, 1.5 miles north of, on west side of Temecula road, in south end of boulder 2.5 feet high, 15 feet long, and 5 feet wide, under a double oak tree in fence line; copper bolt stamped "U. S. G. S. 1164 ft. B. M."-----	1, 164. 781
Rainbow, at northeast corner of Vallecitos schoolhouse grounds; iron post stamped "1044"-----	1, 044. 696
T. 10 S., R. 2 W., northwest corner, 200 feet south of oak tree on west side of Rainbow-Bonsall road at junction with Palla road; iron post stamped "290"-----	290. 735
San Luis Rey River, north bank of, on north side of Bonsall-Palla road, in granite boulder; copper bolt stamped "U. S. G. S. 274 Ft. B. M."-----	274. 860
Bonsall, in center of street north of post-office, in top of boulder 12 feet in diameter, 6 feet high; copper bolt stamped "U. S. G. S. 172 Ft. B. M."-----	172. 821
Bonsall, 2.25 miles south of, at junction of Vista and Oceanside roads, near fence corner; iron post stamped "155"-----	155. 873
SPUR FROM 2 MILES EAST OF SAN LUIS REY, NORTH TO SOUTHWEST CORNER SEC. 34, T. 10 S., R. 4 W.	
T. 10 S., R. 4 W., southwest corner of sec. 34, 24 feet northeast of forks of road; iron post stamped "112 T"-----	112. 714

TEMECULA, EAST UP TEMECULA RIVER, TO VICINITY OF PAUBA GRANT.

Pauba ranch house, 0.25 mile south of, northeast of forks of road; iron post stamped "1090 T"-----	1, 090. 773
Temecula, 6.5 miles east of irrigating ditch and double fork road, north of road; iron post stamped "1161 T"-----	1, 161. 702
Temecula, 8.5 miles east of, southeast corner of private road crossing, just west of dry wash of Temecula River; iron post stamped "1228 T"-----	1, 228. 775

MONSERATE SCHOOL, EAST VIA PALA, TO VICINITY OF PAUMA RANCH.

	Feet.
Monserate schoolhouse, 2 feet south of, under window; iron post stamped "351 T"-----	351.728
Pala, 10 feet south of southwest corner of mission; iron post stamped "411 T"-----	411.674
Pala, 1.75 miles east of, at fork of road to Aqua Tibia ranch, north-east of road; iron post stamped "568 T"-----	569.030
Pala, 3 miles east of, fork of road to Pala Mills, north of road; iron post stamped "557 T"-----	557.729
Pauma ranch, southeast of fork of road to ranch house; iron post stamped "758 T"-----	758.708

SPUR SOUTH FROM PALA 2 MILES.

Pala, 2 miles south of, northeast of forks of road; iron post stamped "481 T"-----	481.799
--	---------

NEAR OUTING, SOUTHWEST TO DELUZ; THENCE SOUTH TO DELUZ STATION.

Sandia Canyon, in forks of Linda Rosa and Fallbrook road and road to Deluz; iron post stamped "837 T"-----	837.422
Deluz, 1.25 miles south of, 30 feet west of forks of road to schoolhouse (Deluz), in bed rock; copper bolt stamped "379 T"-----	379.909
Deluz Station, 12 feet northwest of switch south of; iron post stamped "146 T"-----	146.825

RAINBOW, WEST VIA FALLBROOK, TO DELUZ STATION.

Red Mountain ranch, just east of, northwest of forks of road; iron post stamped "1063 T"-----	1,063.660
Fallbrook, 50 feet north of schoolhouse, south side of Elder street; iron post stamped "732 T"-----	732.660

DELUZ STATION, SOUTH ALONG SOUTHERN CALIFORNIA RAILROAD, TO YSIDORA; THENCE WEST TO LAS FLORES.

Santa Margarita ranch house, southwest corner of retaining wall around, in middle pin; bronze tablet stamped "87 T"-----	87.657
Ysidora, 40 feet east of track, north side of road at fence corner; iron post stamped "23 T"-----	23.579
Ysidora, 1.5 miles west of, north of road at summit; iron post stamped "411 T"-----	411.696
Las Flores, 10 feet southwest of water tank, east of track; iron post stamped "84 T (S. B. (?))" (recovered by U. S. Coast and Geodetic Survey)-----	84.744

LAS FLORES, NORTHEAST UP LAS PULGAS CANYON, TO LAS PULGAS CORRAL.

Las Pulgas corral, 0.5 mile northeast of, east side of Las Flores Creek, on side of hill; iron post stamped "293 T"-----	293.652
--	---------

ESCONDIDO 15' QUADRANGLE (SAN LUIS REY 30' QUADRANGLE).

BONSALL, SOUTHEAST TO MOOSA.

Moosa, 15 feet southwest of house next east of post-office; iron post stamped "458 T"-----	458.821
--	---------

NEAR BONSTALL, SOUTH TO VISTA; THENCE SOUTHEAST, ALONG SOUTHERN CALIFORNIA RAILROAD AND COUNTY ROAD, TO GREEN VALLEY (DOUBLE-RODDED LINE).

	Feet.
Delphi, northwest corner of schoolhouse grounds; iron post stamped "491" -----	491. 806
Vista, 50 feet northeast of Escondido Branch Railroad track, on southwest side of county road, in row of eucalyptus trees east of railroad crossing; iron post stamped "330" -----	330. 870
San Marcos, close to schoolhouse building, in angle of porch and building in front; iron post stamped "582" -----	582. 826
Richland, in row of eucalyptus trees at southern corner of school grounds, 50 feet northeast of track and 35 feet northwest of road center; iron post stamped "634." -----	634. 920
Escondido, northeast corner of iron footplate of step at entrance to drug store, on lot 15, next to bank and post-office building, on Main street; official city bench mark -----	654. 661
Escondido, in north wall of main entrance to corridor in basement of college building on hill, 4 feet above ground; bronze tablet stamped "754" -----	754. 948
Escondido, 2.5 miles south of, on San Diego road at junction; iron post stamped "530" -----	530. 959
Bernardo post-office, 625 feet north of Bernardo River bridge, on west side of county road; iron post stamped "319" -----	319. 983
Green Valley, in sloping boulder 4 feet high, east of large boulder pile, west side of San Diego road and 80 feet north of bridge; copper bolt stamped "U. S. G. S. 482 ft. B.M." -----	482. 976

BERNARDO, NORTHEAST ALONG RIVER ROAD, TO SAN PASQUAL.

Glenella schoolhouse, 80 feet southwest of, in yard; iron post stamped "381 T" -----	381. 763
San Pasqual schoolhouse, in yard at east side of gate; iron post stamped "366 T" -----	366. 791

OCEANSIDE 15' QUADRANGLE (SAN LUIS REY 30' QUADRANGLE).

YSIDORA, SOUTHEAST TO SAN LUIS REY; THENCE NORTHEAST TO NEAR BONSTALL.

San Luis Rey, northeast corner of grounds around schoolhouse; iron post stamped "76 T" -----	76. 579
--	---------

RAMONA QUADRANGLE.

AT WILSON VALLEY.

T. 8 S., R. 1 E., about southwest corner sec. 2 in Wilson Valley, 4 feet east of lowest point of road; iron post stamped "2146" -----	2, 146. 866
---	-------------

PAUBA GRANT, SOUTHEAST VIA OAK GROVE, TO WARNER RANCH.

Nigger Canyon, 1.75 miles southeast of, 10 feet south of road, at junction of Temecula-Warner road with road to north, 120 feet southwest of box elder tree; iron post stamped "1450 T" -----	1, 450. 683
Radec post-office, 0.25 mile north of, at junction with road to San Jacinto; iron post stamped "1694 T" -----	1, 694. 668
Cienega schoolhouse, 2 feet south of fence and 3 feet east of front gate; iron post stamped "1988 T" -----	1, 988. 615

	Feet.
Cienega schoolhouse, 2.75 miles southeast of, in flat draw, 10 feet north of road; iron post stamped "2439 T"-----	2, 439. 679
Oak Grove schoolhouse, 50 feet south of, in yard, at east side of gate; iron post stamped "2751 T"-----	2, 751. 637
Oak Grove schoolhouse, 4 miles southeast of, sec. 35, T. 9 S., R. 2 E., about 400 feet west of quarter corner, 10 feet west of road on summit of divide between Temecula and San Luis Rey rivers, 3 feet east of fence corner; iron post stamped "3282 T"-----	3, 282. 746
Puerta Cruz, .05 mile northeast of, 25 feet south of road; iron post stamped "2916 T"-----	2, 916. 746
Warner's ranch, 0.5 mile northeast of Adobe Cabin corral, north side of Agua Caliente Creek bed, in southeast corner of intersection of road from ranch house to corral with Temecula-Julian road; iron post stamped "2772 T"-----	2, 772. 733

WARNER'S RANCH, WEST VIA SAN LUIS REY CANYON AND POTRERO INDIAN RESERVATION, TO PAUMA GRANT.

San Luis Rey Canyon, head of, 45 feet west of road above foot of grade in first bend of Smith Mountain; iron post stamped "2724 T"-----	2, 724. 628
Amago post-office, 3.33 miles southeast of, at east side of trail in San Luis Rey Canyon, south side of creek, 100 feet west of junction of dry creek bed from south with San Luis Rey River, on west side of granite ledge; bronze tablet stamped "2404 T"-----	2, 404. 694
Lajolla, at southwest corner of, Indian reservation schoolhouse; iron post stamped "2719 T"-----	2, 719. 777
Sparkman's store, 45 feet northwest of, 2 feet northeast of stone fence on southwest side of road; iron post stamped "1016 T"-----	1, 016. 622

SPARKMAN'S STORE, SOUTH VIA RINCON, TO T. 11 S., R. 1 W.

Rincon schoolhouse, 1.87 miles south of, 0.5 mile south of San Luis Rey River crossing, at junction of road to Escondido with road up creek; iron post stamped "939 T"-----	939. 583
---	----------

ADOBE CABIN CORRAL ON WARNER'S RANCH, EAST TO AGUA CALIENTE; THENCE SOUTHEAST TO POINT 1 MILE EAST OF WARNER SCHOOLHOUSE; THENCE NORTHWEST TO ADOBE CABIN CORRAL.

Agua Caliente schoolhouse, southwest corner of; iron post stamped "3165 T"-----	3, 165. 634
Warner schoolhouse, 3.25 miles north of, T. 10 S., R. 3 E., 150 feet east of road and 5 feet east of southwest corner of building; iron post stamped "3459 T"-----	3, 459. 682
Warner schoolhouse, 1 mile east of, 50 feet east of junction of old Fort Yuma road with road to east; iron post stamped "3240 T"-----	3, 240. 601
Warner ranch house, in forks of road at southwest corner of; iron post stamped "2894 T"-----	2, 894. 681

HEAD OF SAN LUIS REY CANYON, SOUTHEAST TO SANTA YSABEL; THENCE WEST, VIA RAMONA, TO SAN PASQUAL.

Mesa Grande road, 400 feet southwest of end of lane; iron post stamped "2719 T"-----	2, 719. 614
--	-------------

	Feet.
T. 11 S., R. 3 E., north side of sec. 32, Santa Ysabel ranch boundary line, 5 feet south of intersection with section line; iron post stamped "3015 T"-----	3, 015. 636
Balcon Canyon, in forks of road; iron post stamped "3123 T"-----	3, 123. 792
Santa Ysabel, 180 feet west of road junction and south side of road; iron post stamped "2983 T"-----	2, 983. 684
Santa Ysabel schoolhouse, in yard at north side of gate; iron post stamped "2764 T"-----	2, 764. 738
Ballena schoolhouse, 60 feet south of, in yard at east side of gate; iron post stamped "2470 T"-----	2, 470. 640
Mesa Grande, in forks of road; iron post stamped "1776 T"-----	1, 776. 729
Ramona town hall, east side of, 0.5 foot above step; aluminum tablet stamped "1440 T"-----	1, 440. 697
Pamo grade, 0.2 mile south of forks of road, west of road, in turntable; iron post stamped "789 T"-----	789. 624
East San Pasqual, 1 mile east of, 95 feet north of schoolhouse, in yard, 3 feet from fence at west side of gate; iron post stamped "410 T"-----	410. 636

JUNCTION OF ROAD 3 MILES EAST OF RAMONA, NORTH TO SPRING HILL SCHOOLHOUSE.

T. 12 S., R. 2 E., sec. 32, Spring Hill schoolhouse, 55 feet west of, in yard at south side of gate; iron post-stamped "2340 T"-----	2, 340. 666
--	-------------

SAN YSABEL, EAST TO JULIAN; THENCE NORTH TO OBERLIN SCHOOLHOUSE.^a

Wynola, at northeast corner of road intersection; iron post stamped "3654 T"-----	3, 654. 600
Julian, 1.75 miles west of, at southwest corner of junction of main road with private road to south; iron post stamped "3948 T"-----	3, 948. 690
Julian high schoolhouse, in yard at north side of gate; iron post stamped "4219 T"-----	4, 219. 765
Oberlin schoolhouse, in yard at north side of gate; iron post stamped "4132 T"-----	4, 132. 471

CUCAMONGA, DEEP CREEK, HESPERIA, POMONA, ROCK CREEK, SAN ANTONIO, SAN BERNARDINO AND VICTOR 15' QUADRANGLES; SAN GORGONIO 30' QUADRANGLE.

LOS ANGELES AND SAN BERNARDINO COUNTIES.

The elevations in the following list are based upon the 1906 precise-level line of the United States Coast and Geodetic Survey from San Diego which recovered several bench marks of this list on San Bernardino, Hesperia, and Victor quadrangles.

The leveling of Pomona, Cucamonga, and on part of San Bernardino quadrangles was done in 1897 by Mr. H. S. Crowe, levelman; other leveling was done on San Bernardino, Hesperia, and Victor quadrangles in 1898; on Hesperia, Victor, and Deep Creek quadrangles in 1898-99, and on San Antonio and Rock Creek quadrangles in 1899, under Mr. W. T. Turner, topographer, by Mr. C. R. Smith,

^a A line from south closes 1.6 feet high on Julian.

levelman. The leveling on San Gorgonio quadrangle was done in 1899 under Mr. E. T. Perkins, topographer, by Messrs. C. R. Smith, R. A. Hamilton, and C. C. Ward, levelmen.

POMONA QUADRANGLE.

BASSETT, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO POMONA (DOUBLE-RODDED LINE).

	Feet.
Bassett, 86.7 feet from west end of platform and 107.7 feet south of southwest corner of station; iron post stamped "295"-----	295.540
Puente, 18 feet west of turnstile in fence north of station, 125 feet north of east end of platform; iron post stamped "328"-----	328.659
Puente warehouse, 1.4 feet from northwest corner and 1.2 feet below brick foundation; bronze tablet stamped "331"-----	331.745
Lemon, in southeast corner of fence of railroad reservation and 113.2 feet from southwest corner of station; iron post stamped "519"---	519.879
Spadra, 122.4 feet from northwest corner of station; iron post stamped "711"-----	711.998
Pomona, 55 feet from station, near telegraph pole near park hedge; iron post stamped "861"-----	861.738
Pomona, in Odd Fellows Building, corner Second and Ellen streets, on Ellen street side, 11.6 feet from Second street corner, in third course from window and 8.5 courses from sidewalk; bronze tablet stamped "854"-----	855.060

CUCAMONGA QUADRANGLE.

POMONA, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO SOUTH ETIWANDA (DOUBLE-RODDED LINE).

Pomona, J. H. Graber building, corner railroad reservation and Gordon street, northwest corner of Gordon street, four rows from corner, 7 courses from sidewalk; bronze tablet stamped "861"-----	861.992
Ontario, in grass plot in front of station, 79.2 feet south of southwest corner of station; iron post stamped "986"-----	986.375
Ontario, in southwest corner of Southern Pacific Hotel, seventh course from sidewalk and two courses from doorway on west side of building; bronze tablet stamped "992"-----	992.315
Ontario, in northwest corner of bank building, on Main avenue, second corner from steps, eighth course above sidewalk; bronze tablet stamped "987"-----	987.830
South Cucamonga (Zucker), in station park, 45.1 feet from southeast corner of station and 2.6 feet from telegraph pole; iron post stamped "958"-----	958.556
South Etiwanda; 58.6 feet south of center of wagon road and 2.6 feet west of telegraph pole; iron post stamped "981"-----	982.134

SAN BERNARDINO QUADRANGLE.

RIVERSIDE, NORTHEAST TO HIGH GROVE.

High Grove, station park south end of diamond-shaped lawn; iron post stamped "945" (recovered by U. S. Coast and Geodetic Survey)-----	945.517
--	---------

RIVERSIDE, NORTHEAST ALONG MOTOR RAILROAD, TO SAN BERNARDINO; THENCE NORTHWEST ALONG ATCHISON, TOPEKA AND SANTA FE RAILROAD, TO KEENBROOK.

	Feet.
Colton, 1 mile northeast of, at Lytle Creek, in northeast cylinder on east side of wagon-road bridge; copper bolt stamped "1007"-----	1, 007. 486
San Bernardino, in stone on northeast corner of court-house building; bronze tablet stamped "1048" (recovered by U. S. Coast and Geodetic Survey)-----	1, 048. 451
Verdemont, 2.8 miles southward from, 50 feet east of track at point where 3 wagon roads pass over one common crossing; iron post stamped "1420 S B" (recovered by U. S. Coast and Geodetic Survey)-----	1, 420. 770
Glen Helen ranch, on east side of county road; iron post stamped "2008 S B" (recovered by U. S. Coast and Geodetic Survey)-----	2, 009. 267

SOUTH ETIWANDA, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO MOUND CITY (DOUBLE-RODDED LINE).

San Sevaine, on south side of track, 231 feet from southwest corner of station, near fence; iron post stamped "1063"-----	1, 063. 238
Bloomington, south side of track, 87.9 feet from southeast corner of station, 2.2 feet from telegraph pole and 7 feet from center of wagon road; iron post stamped "1090"-----	1, 090. 279
Bloomington, in brick building at post-office, in sixth course of brick above foundation and second course from southeast corner of building owned and occupied by W. H. H. Easton, southwest corner of Orchard and Commercial streets; bronze tablet stamped "1098"-----	1, 099. 141
Colton, 1.25 miles west of, at Cement Company's storehouse, in wall on north side, 3.4 feet from east corner, 0.7 foot from top of foundation, 35.8 feet from center of track; bronze tablet stamped "1006"-----	1, 006. 665
Colton, in corner of brick building at Transcontinental Hotel, in third course above top of corner post and in center of brick laid horizontally; bronze tablet stamped "978"-----	979. 073

COLTON, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO VICINITY OF PALM SPRINGS.

Mound City, northeast corner of reservoir wall east of station; copper bolt stamped "1079"-----	1, 079. 762
---	-------------

ROCK CREEK QUADRANGLE.^a

NORTH SIDE SEC. 4, T. 4 N., R. 8 W., WEST TO ROCK CREEK; THENCE SOUTHEAST TO SHOEMAKER (BIG ROCK VILLA).

Sheep Creek, 14.5 miles west of, at forks where second road to Palmdale branches to northwest; iron post stamped "3497 S B"-----	3, 497. 687
Shoemaker's ranch, on Rock Creek, 50 feet west of hotel; iron post stamped "3927 S B"-----	3, 927. 355

SAN ANTONIO QUADRANGLE.

APPLEWHITE, NORTHWEST VIA NORTH FORK OF LYTLE CREEK AND LONE PINE CANYON ROADS, TO CENTER OF T. 3 N., R. 7 W.; THENCE NORTH AND EAST ALONG SHEEP CREEK ROAD, TO TAMBORINO (10 MILES WEST OF HESPERIA).

Glen (Applewhite) ranch, 5.45 miles northwest of, at mouth of Coldwater Canyon, near first pine tree above forks of road; iron post stamped "5017 S B"-----	5, 017. 766
---	-------------

^a These elevations are possibly in error on account of closure on line from southeast about 3 feet high.

	Feet.
Hesperia, 24.65 miles southwest of, at forks where Swartout road branches off to the west, north side of road; iron post stamped "6006 S B"-----	6,006.428
Hesperia, 19.35 miles southwest of, at forks where main traveled road branches off to northwest to Palmdale and Lancaster, west side of road; iron post stamped "4429 S B"-----	4,429.322
Hesperia, 10 miles west of, south side of road at the Tamborino ranch; iron post stamped "3740 S B"-----	3,740.127
MOUTH OF SHEEP CREEK, NORTHWEST ALONG LANCASTER AND PALMDALE ROAD, TO SEC. 4, T. 4 N., R. 8 W.	
Sheep Creek, 8 miles west of, in front of deserted frame dwelling house on south side of road; iron post stamped "3763 S B" (possibly 3 feet too high)-----	3,763.393

SHEEP CREEK SUMMIT, WEST UP SWARTOUT VALLEY, TO SHOEMAKER.

Swartout road summit, on south side of road in gap; iron post stamped "6862 S B" (true elevation is possibly 3 feet higher)----	6,862.311
---	-----------

HESPERIA QUADRANGLE.

KEENBROOK, NORTHEAST ALONG ATCHISON, TOPEKA AND SANTA FE RAILROAD, TO VICTOR.

Cosy Dell road station, inside of garden fence east of county road; iron post stamped "2768 S B"-----	2,768.147
Cajon, 4.75 miles north of, at point where county road recrosses railroad track, west side of track; iron post stamped "3685 S B"-----	3,684.985
Summit station, 5.2 miles north of, where second wagon road crosses railroad, 40 feet west of track and 20 feet north of wagon road; iron post stamped "3462 S B" (recovered by U. S. Coast and Geodetic Survey)-----	3,462.665
Hesperia, at northeast corner of red brick hotel building; iron post stamped "3190 S B" (recovered by U. S. Coast and Geodetic Survey)-----	3,190.475
Hesperia, 4.75 miles north of, cross on north end of coping of small cement culvert west side of track (recovered by U. S. Coast and Geodetic Survey)-----	2,856.822

HESPERIA, WEST ALONG ROAD, TO TAMBORINO RANCH; THENCE NORTHEAST, ALONG NORTH BRANCH OF SHEEP CREEK, TO POINT 5 MILES WEST OF VICTOR.

Hesperia, 5 miles west of, at junction of road to Tamborino ranch with road from Oro Grande to San Bernardino, via Cajon Pass; iron post stamped "3522 S B"-----	3,522.120
Hesperia, 10 miles west of, at southeast corner of Tamborino ranch, on south side of Sheep Creek road, 30 feet southeast of corner common to secs. 13, 14, 23, and 24, T. 4 N., R. 6 W.; iron post stamped "3740 S B"-----	3,740.127

KEENBROOK, NORTHWEST TO APPLEWHITE (GLEN) RANCH.

Applewhite (Glen) ranch, 40 feet west of westernmost building; iron post stamped "3256 S B"-----	3,256.940
--	-----------

SUMMIT, EAST TO BURCHAM'S RANCH; THENCE SOUTHWEST ALONG CLEGHORN CANYON, TO COSY DELL.

	Feet.
Burcham's ranch, on east end of south side rail of large cattle scales; cross cut on iron plate.....	3, 181. 54
Ts. 2 and 3 N., Rs. 4 and 5 W., 400 feet south of common corner, on left side of road by gate in west fence of Wixum's ranch on West Fork of Mohave River; iron post stamped "3355 S B".....	3, 354. 966

VICTOR QUADRANGLE.

VICTOR, WEST ALONG ROAD 5.2 MILES.

Victor, 60 feet north of wagon bridge over Mohave River and 60 feet west of track; iron post stamped "2723 S B" (recovered by U. S. Coast and Geodetic Survey).....	2, 723. 292
Victor, south end of veranda of Turner Hotel; cross chiseled on west end of top stone step.....	2, 716. 77
Victor, 5.25 miles west of, at point where Oro Grande and San Bernardino road crosses road from Victor to Sheep Creek; iron post stamped "3063 S B".....	3, 063. 594

DEEP CREEK QUADRANGLE.

VICTOR, SOUTHEAST ALONG OLD TELEGRAPH ROAD, TO FIFTEENMILE POINT.

Victor, 5.75 miles southeast of, on Rocksprings and Old Telephone Line roads, 6 feet right of latter road, on brow of second bench land; iron post stamped "2960 S B".....	2, 959. 960
Fifteenmile Point, 0.5 mile east of where road from Victor joins old stage road from San Bernardino to Rabbit Springs; iron post stamped "3010 S B".....	3, 010. 780

HESPERIA, EAST VIA BEAR VALLEY AND RABBIT SPRINGS ROAD, TO FIFTEENMILE POINT.

Mohave River, on brow of first bench land east of, 4 feet north of Bear Valley road; iron post stamped "3097 S B".....	3, 097. 041
--	-------------

JUNCTION OF RABBIT SPRINGS AND BEAR VALLEY ROADS, SOUTHEAST ALONG BEAR VALLEY ROAD TO COXEY'S RANCH; THENCE WEST DOWN DEEP CREEK, TO MOHAVE RIVER.

Rock Springs, in triangle of roads; iron post stamped "3748 SB"....	3, 748. 181
Coxey's ranch, in corner of garden fence; iron post stamped "5619 S B".....	5, 619. 653
Deep Creek, Hesperia Land and Water Company's diversion dam; surface of top of cement work.....	3, 366. 54

HESPERIA, SOUTHEAST ALONG PIPE LINE, TO MOHAVE RIVER (SOUTHWEST CORNER, SEC. 7, T. 3 N., R. 3 W.); THENCE SOUTHWEST TO BURCHAM'S RANCH.

T. 3 N., R. 3 W., southwest corner sec. 7, 7 miles southeast of Hesperia; iron post stamped "2960 S B".....	2, 960. 131
---	-------------

COXEY'S RANCH, SOUTHEAST 4.3 MILES, TO JUNCTION OF ROAD TO PINE FLATS.

Coxey's ranch, 4.3 miles southeast of, at point where road to Pine Flat branches off, in forks of road; iron post stamped "6823 SB"....	6, 823. 543
---	-------------

SAN GORGONIO 30' QUADRANGLE.

FIFTEENMILE POINT, EAST TO BOX S RANCH (1 MILE SOUTHEAST OF RABBIT SPRINGS); THENCE SOUTHEAST TO NEAR CACTUS SPRINGS; THENCE WEST, VIA HOLCOMB VALLEY, TO POINT 4.3 MILES EAST OF COXEY'S RANCH.

	Feet.
Box S ranch, sec. 11, T. 4 N., R. 1 W., south side of section, in front of dwelling house; iron post stamped "2935 S B"-----	2,936.196
Box S Springs, sec. 4, T. 3 N., R. 1 E., northeast corner of section, 6.25 miles southeast of Box S ranch, at east end of watering trough; iron post stamped "3550 S B"-----	3,550.149
Cactus Flat, at northeast corner of picket fence in front of James Johnson's residence; + on embedded square stone monument-----	5,878.91
Cactus Flat, 1 mile southeast of, sec. 30, T. 3 N., R. 2 E., where road branches off to the south from road to Rose Mine; iron post stamped "6031 S B"-----	6,031.796
Holcomb Valley, sec. 31, T. 3 N., R. 1 E., in front of offices of Holcomb Valley Mining Company; iron post stamped "7239 SB"-----	7,240.028

HOLCOMB VALLEY, SOUTH 3 MILES, TO BEAR LAKE; THENCE WEST TO FAWN SKIN VALLEY; THENCE NORTHEAST TO HOLCOMB VALLEY.

Holcomb Valley, 3.5 miles southeast of, where west branch of Poligue Canyon road joins Bear Valley road to San Bernardino; iron post stamped "6761 S B"-----	6,761.879
Fawnskin Valley, upper end of, where Holcomb Valley road forks to the northeast; iron post stamped "7211 S B"-----	7,211.964

BAIRDSTOWN (SOUTH OF CACTUS FLAT), SOUTHEAST VIA ROSE MINE, TO MOUND SPRINGS; THENCE NORTH TO OLD WOMANS SPRINGS; THENCE SOUTHWEST TO CUSHENBERRY.

Baldwin Lake, 0.75 mile east of, at junction of road from Rose mine to Bear Valley with road to Bairdstown, in road forks; iron post stamped "6773 S B"-----	6,773.415
Rose mine, at southeast corner of cook house; iron post stamped "6867 S B"-----	6,867.597
Old Womans Springs, 3.5 miles south of, west side of road, 400 feet north of where it leaves Rattlesnake Canyon and runs north toward springs; iron post stamped "3659 S B"-----	3,659.745
Old Womans Springs, 40 feet south of house, 4 feet from cottonwood tree 1 foot in diameter; iron post stamped "3186 SB"-----	3,186.544
Old Womans Springs, 4.5 miles west of, on north of road, opposite junction of road with road to southeast, where road goes between two small hills; iron post stamped "3565 S B"-----	3,565.512

WHITEWATER STATION, NORTH VIA CHUCK WARREN'S, TO "THE PIPES;" THENCE NORTHWEST TO ROSE MINE.

Dry Morongo, about sec. 9, T. 2 S., R. 4 E., on west side of canyon at junction with Mission Creek Valley, 15 feet west of road junction; iron post stamped "1800 S B"-----	1,800.475
Warren's ranch, sec. 28, T. 1 S., R. 4 E., at gatepost, 110 feet south of barn; iron post stamped "2504 S B"-----	2,504.499
T. 1 S., R. 4 E., sec. 14, 100 feet southwest of northeast corner, in forks of Little Morongo Canyon road, where it branches from road to Virginia Dale; iron post stamped "2745 S B"-----	2,745.674

	Feet.
Little Morongo Canyon, sec. 2, T. 1 S., R. 4 E., mouth of lateral canyon, at junction with trail to The Pipes, at upper end of timber patch, 3 feet above ground, in face of granite cliff; aluminum tablet stamped "3380 S B"-----	3, 380. 536
The Pipes, 20 feet northeast of house, 45 feet southwest of barn, 2 feet east of yucca tree; iron post stamped "4459 S B"-----	4, 459. 430
Burns Spring, 1.75 miles northwest of, in saddle of small spur ridge, at top of first steep hill out of canyon; iron post stamped "5438 S B"-----	5, 438. 270
Rattlesnake Canyon, 1.1 miles southeast of, at junction of road from The Pipes to Rose Mine with road to Old Womans Springs, 23 feet west of piñon tree; iron post stamped "5736 S B"-----	5, 736. 444

WHITEWATER SIDING, NORTHWEST ALONG WHITEWATER CANYON, TO SEC. 36, T. 1 S., R. 2 E.

Whitewater Creek, sec. 36, T. 1 S., R. 2 E., 475 feet southwest of junction with creek from the south, southwest side of Whitewater Canyon, 500 feet south of cluster of pine trees, in vertical face of granite ledge, 1.5 feet above ground; aluminum tablet stamped "3438 S B"-----	3, 438. 608
--	-------------

DRY MORONGO, WEST TO CORNER OF TS. 1 AND 2 S., RS. 3 AND 4 E.

Ts. 1 and 2 S., Rs. 3 and 4 E., common corner, which is also corner of the San Bernardino Forest Reserve and is marked "No. 99" in top of cement-filled iron post 4 inches square; aluminum tablet stamped "3075 S B"-----	3, 075. 519
--	-------------

SEC. 14, T. 1 S., R. 4 E., NORTHWEST UP LITTLE MORONGO CANYON, TO T. 1 N., RANGE 4 E. (ABOUT SEC. 30, UNSURVEYED).

Little Morongo, on south side of canyon, at second water camping place, in red granite ledge 10 feet above creek bed; aluminum tablet stamped "4831 S B"-----	4, 831. 526
---	-------------

CALABASAS, DOWNEY, FERNANDO, GOLETA SPECIAL, HUENEME, PASADENA, REDONDO, SAN PEDRO, SANTA BARBARA SPECIAL, SANTA MONICA, SANTA PAULA, SANTA SUSANA, TUJUNGA, AND VENTURA 15' QUADRANGLES; CAMULOS, GUADALUPE, LOMPOC, MOUNT PINOS, PALMDALE, SANTA YNEZ, AND TEJON 30' QUADRANGLES.

KERN, LOS ANGELES, SAN LUIS OBISPO, SANTA BARBARA, AND VENTURA COUNTIES.

The elevations in the following list are based upon the 1906 precise-level line of the United States Coast and Geodetic Survey from San Diego along the Atchison, Topeka and Santa Fe Railroad via San Bernardino to Barstow, and are derived by a readjustment of leveling mostly heretofore published in Bulletin No. 185 and in Appendix to the Nineteenth Annual Report. The elevations previously published were based upon double-rodged primary lines from Los Angeles to Pacoima, Santa Monica, San Bernardino, and San Pedro, based upon the United States Coast and Geodetic Survey gage record at San Pedro. The unadjusted values corrected to San Bernardino would now close 0.7 foot high at San Pedro and 0.2 foot low at Santa Monica, but an adjustment has been made arbitrarily adding 0.4

foot at San Pedro and 0.9 foot to the elevation (see Nineteenth Annual Report) at Santa Monica to equal the Coast and Geodetic Survey value there; also 0.5 foot has been added at Los Angeles and 0.7 foot at Pacoima. The elevations are further controlled by precise leveling of 1902 along the Southern Pacific Railway from Pacoima to Mohave, bearing additional rod correction found by rerunning a portion in 1906 near Mohave, and adjusted to the new accepted heights at these points.

The leveling was done as follows: By Mr. H. S. Crowe, levelman, on San Pedro, Redondo, Downey, Pasadena, and Tujunga quadrangles in 1897; on Fernando quadrangle in 1897-98; on Santa Monica quadrangle in 1897 and 1900; on Santa Susana quadrangle in 1898 and 1900; on Calabajas 15' and remainder of Camulos 30' quadrangles in 1900; on Hueneme and Santa Paula quadrangles in 1900 and 1901; on Ventura, Santa Barbara Special, and Mount Pinos quadrangles in 1901; on Palmdale quadrangle in 1900; on Tejon quadrangle in 1900 and 1901; and on Goleta Special, Santa Ynez, and Lompoc quadrangles in 1901-2. Additional work was done on Lompoc quadrangle in 1903-4 by Mr. S. N. Stoner, and in 1903 by Mr. C. L. Nelson. Work on Guadalupe quadrangle was done in 1903-4 by Mr. Stoner.

In the spring of 1907 a prism level yard rod line of levels was run by Mr. Charles H. Lee, for the Los Angeles aqueduct, under Mr. J. B. Lippincott, which agrees well between Pacoima, Saugus, and Mohave with the adjusted elevations of this list, but disagrees grossly with Crowe's levels of this list on Tejon quadrangle, increasing elevation at San Francisco Canyon 2 feet, lowering elevation at Fairmont 1.5 feet, and making various other corrections between these extremes, which show Crowe's lines to be somewhat unreliable; but no readjustment has been yet made of Crowe's lines on account of this information.

SAN PEDRO QUADRANGLE.

AT SAN PEDRO.

	Feet.
San Pedro, top of upper stone of foundation to brick building of Bank of San Pedro, U. S. C. & G. S. bench mark (of 1890) ^a -----	22.74

REDONDO QUADRANGLE.

SAN PEDRO, NORTH ALONG SOUTHERN PACIFIC RAILROAD, TO WILMINGTON (DOUBLE RODDED LINE).

Wilmington, 152 feet from northeast corner of railroad water tank and 153 feet from southwest corner of station; iron post stamped "7" -----	6.915
--	-------

^a To U. S. C. & G. S. elevation 0.4 foot has been added.

DOWNEY QUADRANGLE.

WILMINGTON, NORTH ALONG SOUTHERN PACIFIC RAILROAD, TO CLEMENT JUNCTION, LOS ANGELES (DOUBLE-RODDED LINE).

	Feet.
Thenard Junction, about 100 feet west of station sign and 1 foot from telegraph pole; iron post stamped "33"-----	33. 007
Cerritos, corner of Dominguez and Railroad avenues, 1 foot from corner of fence of railroad right of way and 96 feet from southwest corner of railroad building; iron post stamped "32"-----	31. 903
Compton, 1 foot from fence in front of station, 88 feet from northeast corner of station building and 30 feet from north post of gate to R. Barker's residence, fronting station; iron post stamped "67"-----	67. 038
Florence, between station building and small outhouse, 39 feet from southwest corner of station building and 5 feet from large palm tree; iron post stamped "136"-----	136. 052

PASADENA QUADRANGLE.

CLEMENT JUNCTION, NORTH VIA LOS ANGELES, TO TROPICO (DOUBLE-RODDED LINE).

Los Angeles:

Clement Junction, at intersection of fence lines; iron post stamped "220"-----	220. 470
Arcade station, 3 inches north of center post of northwest tower of; copper plug set in asphaltum, stamped "256"-----	256. 179
Post-Office Building, in north stone buttress of main entrance to, on Main street, between Winston and Fifth streets; bronze tablet stamped "270"-----	270. 619
City Hall Building, on Broadway, about 3 feet above the northern steps to front entrance; bronze tablet stamped "286"-----	286. 633
County court-house, in granite buttress of, right hand of main steps to building, which is at southeast corner of Broadway and Temple street; bronze tablet stamped "338"-----	338. 523
Naud Junction, in concrete of floor of waiting room, alley at, 4 inches from side of baggage room and 8 inches from edge of concrete nearest railroad track; copper bolt stamped "282"-----	282. 733
Naud Junction, 0.5 mile east of, at Los Angeles River, southwest corner of railroad bridge, in concrete pier; copper bolt stamped "294"-----	294. 590
Junction warehouse, brick building, at Junction of San Fernando and Olympia streets, in front wall; bronze tablet stamped "306"-----	306. 403
Buena Vista street, bridge over Los Angeles River, 0.5 mile north of station, second bent from south end, 18 feet from California Southern and 12 feet from Southern Pacific railroad tracks, in northeast granite post; copper bolt stamped "314"-----	314. 546

LOS ANGELES, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO BASSETT.

East Lake Inn, northeast corner of Eastlake avenue and Mission road, on south side of building and 1.2 feet from steps in concrete, at top of foundation; bronze tablet stamped "333"-----	333. 391
Anrant station, 0.75 mile west of, in top step of brick culvert on west side of railroad; copper bolt stamped "399"-----	399. 226
Shorb station, on south side of railroad yard, 99.5 feet southeast from corner of station and 55 feet west of signal tower building; iron post stamped "464"-----	464. 325

	Feet.
Alhambra station, in the west corner of railroad park; iron post stamped "456"-----	456.547
San Gabriel, 85.6 feet from northeast corner of, and 94.9 feet from northwest corner of station building, 7.1 feet west from rain-gage post; iron post stamped "415"-----	415.993
Savannah, 1 foot from fence south of station and 75.9 feet from southeast corner of station; iron post stamped "300"-----	300.660
Savannah, in Western Union Telegraph pole, 73.3 feet north of station; bronze tablet stamped "292"-----	292.416

SANTA MONICA QUADRANGLE.

CLEMENT JUNCTION, LOS ANGELES, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO SANTA MONICA (ADJUSTED DOUBLE-RODDED LINE).

University station, 1 foot west of telegraph pole and 65 feet south of southwest corner of station; iron post stamped "174"-----	174.851
Cienega siding, at northwest corner of fence for cattle corral and 50 feet west of center of track; iron post stamped "118"-----	118.934
Ivy station, in southwest corner of fence of cattle guard at road crossing, 150 feet northwest of station building; iron post stamped "103"-----	103.180
Palms, in front brick wall at northwest corner of warehouse, fifth course of bricks above water table and in center of second course of bricks from north end; bronze tablet stamped "126"-----	126.909
Home Junction, on east side of track near fence, 80 feet east from center of railroad building and 48 feet from center of track; iron post stamped "165"-----	165.323
Santa Monica, in brick wall of building used as bank on northeast corner of Oregon and Third streets; bronze tablet stamped "79"---	79.400
Santa Monica, in concrete floor of railroad turntable foundation, 3.2 feet north of center of turntable, and 6 inches west of center of track at end of Long Wharf; copper bolt stamped "17"-----	17.510
Santa Monica, top surface of the railroad turntable at inner end of wharf (the turntable has a well-laid concrete foundation); U. S. C. & G. S. benchmark No. 1 (elevation by U. S. C. & G. S.)---	17.42

TROPICO, NORTHWEST ALONG SOUTHERN PACIFIC RAILROAD, TO PACOIMA (DOUBLE-RODDED LINE).

Tropico, 1.5 feet from northwest corner of fence around garden, 200 feet north of station building; iron post stamped "432"-----	432.289
Burbank, on west side of railroad track, 51 feet from center, 117 feet northwest from northwest corner of station; iron post stamped "563"-----	563.348
Dundee, near post-office building, 12.2 feet from northeast corner of building, 4.2 feet from eucalyptus tree, 600 feet west of railroad station; iron post stamped "760"-----	760.108

BURBANK, WEST ALONG CHATSWORTH PARK BRANCH RAILROAD, TO ENCINO.

MacNeil siding; top of rail-----	597.2
Garnsey siding; top of rail-----	663.6
Garnsey siding, 300 feet west of, 3.5 feet east of telegraph pole 479, 50 feet south of railroad track; iron post stamped "665 L. A."-----	665.635
Trestle 483 C, opposite, 50 feet south of center of track, 4 feet east of telegraph pole 484; iron post stamped "704 L. A."-----	704.933

FERNANDO QUADRANGLE.

PACOIMA, NORTHWEST ALONG SOUTHERN PACIFIC RAILROAD, TO FERNANDO; THENCE EAST UP TUJUNGA VALLEY INTO CANYON.

	Feet.
Pacoima, at corner of fence, 165 feet northwest of northwest corner of brick station building; iron post stamped "1013" (beginning of precise line)-----	1, 013. 230
San Fernando, in southeast corner of brick wall of McClay & McClay Company's building on Johnson street; bronze tablet stamped "1066," recovered by precise levels-----	1, 066. 665
T. 2 N., R. 14 W., sec. 10, 0.3 mile west of road fork, 40 feet south from corner of old orchard, 4 feet north of crooked tree and 20 feet from center of wagon road; iron post stamped "1187"-----	1, 187. 837
T. 2 N., R. 13 W., sec. 6, 0.75 mile east of S. A. Johnson's house, 10 feet south of wagon road on township line; iron post stamped "1470"-----	1, 470. 898

SAUGUS, EAST ALONG SOUTHERN PACIFIC RAILROAD AND HIGHWAYS, TO RAVENNA (RECOVERED BY PRECISE LEVELING).

T. 4 N., R. 15 W., 4.6 feet from common corner secs. 13, 14, 23, and 24, road over tunnel, 15 feet from fence; iron post stamped "1565"-----	1, 564. 636
Lang's station, at north end of picket fence, 45 feet north of center of track, between hotel building and section house; iron post stamped "1690" (recovered by precise levels)-----	1, 689. 544
Steel bridge No. 11, on concrete bulkhead pier of, in Soledad Canyon, 11 miles south of Acton; copper bolt stamped "1822"-----	1, 821. 790
Steel bridge No. 5, on concrete pier bulkhead at northwest corner of; copper bolt stamped "1913"-----	1, 913. 053

SPUR NORTH UP AGUA DULCE CANYON.

T. 5 N., R. 14 W., sec. 34, 1.25 miles west of J. M. Talbot's house, 2 feet south of southeast corner of adobe house; iron post stamped "2258"-----	2, 257. 840
---	-------------

SPUR NORTH UP MINT CANYON.

T. 4 N., R. 15 W., sec. 15, 2 miles north of railroad, in flat rock 12 by 12 by 8 inches on side of hill, about 30 feet north of spring; copper bolt stamped "1556"-----	1, 555. 511
T. 4 N., R. 15 W., sec. 2, northwest corner of W. H. Thomas's cabin, 4.75 miles from mouth of canyon; iron post stamped "1778"-----	1, 777. 721

TUJUNGA QUADRANGLE.

UP TUJUNGA CANYON, EAST ALONG ROAD, TO HOYT RANCH; THENCE NORTHEAST ALONG TRAIL UP CANYON AND OVER RIDGE, TO NORTH FORK TUJUNGA CREEK AT MOUTH OF MILL CREEK; THENCE NORTHEAST 2 MILES UP MILL CREEK, TO END OF WAGON ROAD.

Hoyt ranch, 0.7 mile northwest of, about 800 feet from creek crossing on brushy flat, 6.5 miles northeast of Montevista, in face of rock 14 by 5 by 3 feet, 2.7 feet above surface of ground; bronze tablet stamped "1888"-----	1, 888. 645
---	-------------

	Feet.
Hoyt's ranch, 2.75 miles northeast of, in rock at foot of slope, pine tree growing in rock; copper bolt stamped "2115"-----	2, 115. 315
Boulder 7 by 5 by 3 feet, on trail where it is in sight of Big Tujunga, about 1,500 feet up ridge; copper bolt stamped "2593"-----	2, 593. 905
Small summit, 1.1 miles on trail, in flat granite slab; copper bolt stamped "3526"-----	3, 526. 291
Summit of ridge, 50 feet east of, in granite boulder 2 by 1 feet; copper bolt stamped "4398"-----	4, 398. 579
Junction of North Fork and Mill creeks, 0.5 mile northwest of, in granite boulder 12 feet north of trail; copper bolt stamped "3935"-----	3, 935. 200
Junction of Mill Creek and North Fork of Big Tujunga, near trail from latter, in granite boulder; copper bolt stamped "3056"-----	3, 056. 473
Mill Creek, 2 miles above mouth, 20 feet from north end of wagon road, in rock on south bank of Mill Creek at point where trail goes over ridge to Big Tujunga Creek; copper bolt stamped "3463"-----	3, 463. 749
MOUTH OF MILL CREEK SOUTHWEST TO MOUTH OF NORTH FORK OF TUJUNGA CREEK (SINGLE SPUR).	
Vertical Falls, on North Fork, 35 feet in height, in ledge of rock on north side of creek, about 6 feet above water and 20 feet north of falls; bronze tablet stamped "2879"-----	2, 879. 723
Falls where North Fork empties into Big Tujunga Creek, 40 feet south of, in granite boulder 6 by 5 by 4 feet on north side of North Fork where drift log is lodged; copper bolt stamped "2671"-----	2, 670. 977
END OF WAGON ROAD ON MILL CREEK, SOUTHEAST ACROSS RIDGE ALONG TRAIL, TO TUJUNGA CREEK; THENCE UP CREEK TRAIL, TO SOUTHEAST CORNER SEC. 5, T. 2 N., R. 11 W. (SINGLE SPUR).	
Wickiup Canyon, 0.3 mile east of, on south side of Big Tujunga Creek, in boulder 4 by 6 by 2 feet in bed of stream, 25 feet south of trail and 60 feet east of canyon, where trail goes down from ridge from Mill Creek, in oak stake driven in bank marked "B M." and near dead willow tree in stream; copper bolt stamped "3266"-----	3, 266. 066
Alder Creek, in bed of, at junction with Big Tujunga, in hole drilled in boulder 8 by 8 by 12 feet; copper bolt stamped "3415"-----	3, 415. 462
T. 2 N., R. 11 W., sec. 5, near southeast corner of, 40 feet east of trail between Barley Flats and Mount Wilson, in face of granite ledge facing Tujunga River 60 feet east of pine tree 18 inches in diameter; bronze tablet stamped "4046"-----	4, 046. 138
UP MILL CREEK, NORTHEAST OVER DIVIDE AND NORTHWEST DOWN ALISO CANYON, TO ACTON.	
Divide between Mill Creek and Aliso Canyon, 10 feet east of road; iron post stamped "5030"-----	5, 030. 964
Smith's stamp mill, 250 feet east of, in boulder 6 by 6 by 4 feet at junction of roads going up Dump and Tie canyons; copper bolt stamped "4452"-----	4, 452. 098
Big Tujunga mines and Jones ranch, intersection of roads to, 6 miles east of Acton, 18 feet south of signboard; iron post stamped "3348"-----	3, 348. 151
Acton, 3 miles south of, 30 feet from northeast corner of stone house on big ridge; copper bolt stamped "3021"-----	3, 021. 701

	Feet.
Aliso Canyon, mouth of, 2 miles east of Acton, 1 foot west of sign-board; iron post stamped "2829"-----	2, 829. 711
Acton, in brick wall southeast corner of hotel; bronze tablet stamped "2700" (recovered by precise leveling)-----	2, 700. 771
ACTON, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD TO RAVENNA (RECOVERED BY PRECISE LEVELING).	
Ravenna station, on east side of track, 58 feet east of door of office of station building and 3.5 feet from gum tree; iron post stamped "2468"-----	2, 468. 188
ALISO CANYON, NORTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO VINCENT (RECOVERED BY PRECISE LEVELING).	
Vincent, 500 feet north of station, in corner of jog in fence, and 500 feet west of center line of sec. 22, T. 5 N., R. 12 W.; iron post stamped "3219"-----	3, 219. 258
CALABASAS 15' (CAMULOS 30') QUADRANGLE.	
ENCINO, WEST ALONG CHATSWORTH PARK BRANCH RAILROAD, TO CANOGA; THENCE NORTH TO CHATSWORTH.	
Reseda, 2.7 miles west of, 40 feet west of center of county road, near first telegraph pole west of road crossing, 50 feet south of track; iron post stamped "773 L. A."-----	773. 859
NEAR CANOGA, SOUTHWEST ALONG ROAD, TO GRAPE ARBOR.	
Calabasas, 38 feet east of northeast corner of calaboose building, at southeast corner of picket fence around vineyard, 60 feet northwest of west end of bridge; iron post stamped "928 L. A."-----	928. 576
T. 1 N., R. 17 W., sec. 31, 4 feet north of southwest corner; iron post stamped "694 L. A."-----	694. 558
SANTA SUSANA 15' (CAMULOS 30') QUADRANGLE.	
FERNANDO, NORTH ALONG SOUTHERN PACIFIC RAILROAD, TO SAUGUS (RECOVERED BY PRECISE LEVELS).	
San Fernando tunnel, 0.25 mile south of south end of, at south end of white fence at end of yard at section house; iron post stamped "1417" (recovered by precise line)-----	1, 416. 373
San Fernando Pass, road over tunnel, 50 feet south of north end of cut east side of wall, 4 feet above floor of road; bronze tablet stamped "1799"-----	1, 799. 437
Newhall, between tree and telegraph pole, 27 feet south of station and 30 feet from center of track; iron post stamped "1273" (recovered by precise line)-----	1, 272. 195
Saugus, 18 inches from north corner of pump house, 18 feet from center of track and 33 feet from south corner of station building; iron post stamped "1171" (recovered by precise line)-----	1, 170. 641
FERNANDO, WEST ALONG WAGON ROAD, TO CHATSWORTH PARK.	
Chatsworth Park and Fernando, midway between, 5 feet south of fence corner, 37 feet south of center of road running east and west, and 45 feet east of road running north and south; iron post stamped "1031 L. A."-----	1, 031. 863

	Feet.
Chatsworth Park, at corner of Simi road and Devonshire avenue, 1 foot north from southeast corner of Santa Susana schoolhouse, 11.5 inches below base of building; bronze tablet stamped "962 L. A."-----	963. 154

CHATSWORTH PARK, WEST ALONG ROAD OVER SANTA SUSANA PASS, TO SIMI.

Santa Susana Pass, at summit and 50 feet north of road, 33 feet southwest of signpost, in large sandstone boulder 4.5 feet above ground; bronze tablet stamped "1604 L. A."-----	1, 604. 321
Santa Susana, 30 feet southeast from southeast corner of bunk house, 165 feet southeast of section house, at corner of fence; iron post stamped "961 L. A."-----	961. 276

SAUGUS, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO CAMULOS.

San Francisco ranch, 81 feet east from northeast corner of house of superintendent, in northeast corner of yard, 2 feet from junction of fence lines, 15 feet west of center of road; iron post stamped "1054 L. A."-----	1, 053. 601
Los Angeles and Ventura counties, 3.5 feet south of iron signpost of, 6 feet south of fence line, 50 feet north of center of track, 12 feet south of county road; iron post stamped "858 L. A."-----	857. 773

SAUGUS, NORTH ALONG ROAD, TO ST. FRANCIS RANCH.

T. 5 N., R. 16 W., sec. 34, south side of, in northwest corner of Edw. D. Kichline's field, at foot of grade over mountain, 1 foot east of corner of fence; iron post stamped "1235 L. A."-----	1, 234. 801
---	-------------

CAMULOS QUADRANGLE.

GRAPE ARBOR, WEST ALONG ROAD, TO RUSSELL VALLEY; THENCE NORTH TO SIMI.

Russell Valley, 2 miles east of, summit of pass between Vejour and Newbury Park ranch, north side of road where ledge of sandstone appears on surface, in center of most westerly slab of sandstone 10 by 4 by 1.5 feet; bronze tablet stamped "977 L. A."-----	977. 431
Newbury Park ranch, in front of residence of W. H. Crowley, 30 feet south of wagon road at west corner of fence; iron post stamped "859 L. A."-----	859. 749
Summit of pass from Crowley's to Simi; south side of road, in flat sandstone; bronze tablet stamped "1289 L. A."-----	1, 289. 486
Simi, 1.3 miles southwest of, 18 feet east of marked corner of sec. 17, T. 2 N., R. 18 W., 24 feet east of center of road at fence post; iron post stamped "730 L. A."-----	730. 453

SIMI, NORTHWEST ALONG ROAD VIA GRIMES CANYON, TO FILLMORE; THENCE EAST ALONG SOUTHERN PACIFIC RAILROAD, TO CAMULOS.

Epworth, 39 feet east of center line of Buena Vista street, at corner of Broadway, 87 feet southeast of southeast corner of fruit packing house; iron post stamped "868 L. A."-----	868. 898
Grimes ranch, sec. 7., T. 3 N., R. 19 W., 600 feet southwest of house, 100 feet east of corral, 30 feet east of small dry wash, 3 feet north of gate post on wagon road; iron post stamped "642 L. A."-----	642. 562

	Feet.
Fillmore, 125 feet southwest of southwest corner of station, 65 feet southeast of center of railroad and highway crossing, 1.5 feet north of fence corner; iron post stamped "469 L. A."-----	469.914
Buckhorn, 153 feet northeast of northeast corner of station, 50 feet north of track, 3 feet west of telegraph pole; iron post stamped "599 L. A."-----	598.493
Camulos, 200 feet south of southeast corner of station, 2.5 feet south of northwest corner of post-office; iron post stamped "732 L. A."--	731.437

FILLMORE, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO SESPE.

Brownstone, in front of station; top of north rail-----	448.3
Sespe, 1,300 feet north of station, 50 feet south of main entrance to San Cayetano schoolhouse, 1 foot north of fence; iron post stamped "501 L. A."-----	502.382
Sespe, in front of station; top of north rail-----	456.0

RUSSEL RANCH, WEST AND NORTH IN CONEJO VALLEY VIA POTRERO, TO SOMIS; THENCE EAST TO SIMI.

Pass from Conejo to Potrero, 150 feet west of road, on slope of rock ledge in field; bronze tablet stamped "1315 L. A."-----	1,315.549
Guadaluca, El Conejo, and Calleguas grants, joint corner of, 10 feet north of road, in pile of rocks, at summit of ridge; iron post stamped "778 L. A."-----	778.704
Somis, 8 feet south of southeast corner of fence around public school, 15 feet west of public road; iron post stamped "288 L. A."-----	288.460
Moor Park, 20 feet southwest of southwest corner of station, 30 feet north of center of track; iron post stamped "511 L. A."-----	511.960

HUENEME QUADRANGLE.

SOMIS, SOUTHWEST ALONG SOUTHERN PACIFIC RAILROAD (SOMIS BRANCH), TO SUCROSA; THENCE WEST TO OXNARD; THENCE NORTH TO MONTALVO.

Springville, 1 mile south of, in T. 2 N., R. 21 W., 90 feet south of junction of Wood and Pleasant Valley roads, 1 foot east of east corner of schoolhouse; iron post stamped "53 L. A."-----	54.185
Oxnard, in front of station; top of south rail-----	50.0
Oxnard, 445 feet southwest of southwest corner of station, 1.3 feet west of west fence post; iron post stamped "48 L. A."-----	48.639
Montalvo, in front of station; top of north rail-----	95.9
Montalvo, 225 feet northwest of station, 35 feet east of road, 1 foot south of fence, 50 feet north of center of track; iron post stamped "93 L. A."-----	94.133

OXNARD, SOUTH ALONG WAGON ROAD, TO HUENEME; THENCE EAST AND NORTH TO SUCROSA SIDING.

Hueneme, at junction of Market and Main streets, west side of Bank of Hueneme, in eighth row of bricks above sidewalk and second horizontal row from sidewalk; bronze tablet stamped "8 L. A."--	8.494
Round Mountain, at north foot of, junction of road, 250 feet east of water trough on Conejo road, 2.5 feet west of signboard marked "Hueneme 8.75 m., Conejo county line 14.5 m., Montalvo 13 m., Saticoy 12.5 m."; iron post stamped "30 L. A."-----	30.338

SANTA PAULA QUADRANGLE.

SESPE, SOUTHWEST ALONG SOUTHERN PACIFIC RAILROAD (SANTA BARBARA BRANCH), TO MONTALVO.

	Feet.
Santa Paula, 100 feet south of south side of station, at southwest corner of Ojai and Santa Barbara streets; iron post stamped "288 L. A."-----	288.363
Santa Paula, in front of station; top of rail-----	290.8
Saticoy, 80 feet south of center of station, at northeast corner of park on railroad reservation; iron post stamped "149 L. A."-----	149.302
Saticoy, in front of station; top of north rail-----	149.2

SATICOY, NORTHWEST 3 MILES ALONG WAGON ROAD, TO HARMAN BARRANCA.

Harman Barranca, on west side of northeast fork of, at north end of cultivated field on east slope of hill; iron post stamped "620 L. A."-----	629.572
--	---------

SATICOY, EAST ALONG WAGON ROAD, TO SOMIS.

Saticoy, 3.1 miles south of, at southwest corner of Santa Clara and Del Norte avenues, 60 feet west of signpost, in corner stake of ranch; 8-penny wire nail-----	114.54
Saticoy, 6.2 miles east of, at Center schoolhouse, in northwest corner of yard; iron post stamped "313 L. A."-----	313.567

SANTA PAULA, NORTH ALONG WAGON ROAD, TO SULPHUR MOUNTAIN SPRINGS; THENCE WEST TO NORDHOFF.

Sulphur Mountain Springs, 6 feet east of gate to, 50 feet north of cottage, 1 foot south of wire fence on north side of road; iron post stamped "1005 L. A."-----	1,005.610
Thatcher's school, 600 feet west of, 40 feet north of township corner, at southwest corner of sec. 34, T. 5 N., R. 22 W., south side of road, 6 feet east of telephone pole; iron post stamped "1323 L. A." (elevation by spur 2 miles north of main road)-----	1,323.516
Nordhoff, 5 feet north of southwest corner stake of schoolhouse lot, 35 feet north on center of road; iron post stamped "743 L. A."-----	743.389
Nordhoff, in front of station; top of rail-----	730.1

VENTURA QUADRANGLE.

MONTALVO, NORTHWEST ALONG SOUTHERN PACIFIC RAILROAD, TO CARPINTERIA.

Ventura, in front of station; top of north rail-----	48.0
Ventura, on east side of main entrance to county court-house, 2.4 feet west of northeast corner of tower, 1.4 feet above sidewalk; bronze tablet stamped "13 L. A."-----	14.095
Sea Cliff, in front of station; top of north rail-----	14.7
Punta Gorda, in front of station; top of rail-----	16.5
Punta Gorda schoolhouse, 600 feet east of, 100 feet west of milepost 514, in north corner of fence at road crossing, 25 feet east of road; iron post stamped "21 L. A."-----	22.020

VENTURA, NORTH ALONG SOUTHERN PACIFIC RAILROAD, TO NORDHOFF.

Lacrosse siding, at south end of, center of track-----	302.6
Lacrosse road crossing, 50 feet west of, opposite signpost marked "Matilija 8.75 m., Nordhoff 6.5 m., Santa Anna schoolhouse 3.5 m., Ventura 7.5 m."; iron post stamped "314 L. A."-----	314.786

	Feet.
Oakview spur, at switch stand; base of rail-----	481.2
Mirror Lake, south end of, 45 feet northwest of road crossing, 3 feet south of signpost marked "Matilija 5.75 m., Nordhoff 4.25 m., Ventura 10.5 m.;" iron post stamped "626 L. A."-----	626.812
Mirror Lake; surface of water-----	611.4
Long Valley spur, opposite waiting room; center of track-----	632.9
Matilija spur, in front of waiting room; center of track-----	757.5

NORDHOFF, NORTHWEST ALONG WAGON ROAD, TO MATILIJA.

Matilija, 100 feet west of post-office, at east end of corral, opposite feed barn, in large rock in fence; bronze tablet stamped "955 L. A."-----	955.843
---	---------

CASITAS SWITCH, WEST ALONG WAGON ROAD, TO CARPINTERIA.

Casitas Pass, summit of, 15 feet north of center of road, near center line of sec. 34, T. 4 N., R. 24 W.; iron post stamped "1155 L. A."--	1,155.317
Shepards, 0.2 mile south of, on sec. 25, T. 4 N., R. 25 W., 2 feet north of signpost marked "County line—Ventura 18 m., Santa Barbara 17 m.," near junction of road, on northwest bank of Rincon Creek; iron post stamped "213 L. A."-----	213.661

PALMDALE QUADRANGLE.

MANZANA, EAST ALONG ROAD, TO FAIRMONT; THENCE SOUTH TO ELIZABETH LAKE; THENCE SOUTHEAST TO HAROLD (ALPINE).

Fairmont, 300 feet southeast of southeast corner of public school-house, at southeast corner of fence; iron post stamped "2786 L. A."--	2,785.588
W. A. Spencer's house, 75 feet southeast from corner of, 1 foot south of fence corner; iron post stamped "2803 L. A."-----	2,802.809
Pedro Andrada's house, 60 feet north of, 2 feet northeast of sign-board at corner of road where it forks east and south; iron post stamped "3403 L. A."-----	3,402.719
Hill, on slope of, 25 feet south of road; iron post stamped "3177 L. A."	3,176.513
J. G. Ritter's house, 0.5 mile north of, 450 feet north of gate, 12 feet north of road at summit of ridge at head of valley; iron post stamped "3048 L. A."-----	3,047.223
Signpost marked "Alpine, 5 miles," 15 feet west of, 100 feet east of road up canyon, 200 feet south of road to Palmdale; iron post stamped "2831 L. A."-----	2,830.299
Una Lake, sec. 3, lot 8, T. 5 N., R. 12 W., 1.5 feet southeast of southeast corner of bunk house of South Antelope Valley Irrigation Company; iron post stamped "2820 L. A."-----	2,819.772
Harold siding (formerly Alpine), 1.5 feet west of northwest corner of fence around railroad section house, 9 feet east of center of track; iron post stamped "2826 L. A."-----	2,826.028

UNA LAKE, SOUTHEAST, TO LITTLE ROCK.

East Palmdale, 0.25 mile south of, in corner of fence, 40 feet north of center of road to Little Rock from East Palmdale, in sec. 6, T. 6 N., R. 11 W., 450 feet northwest of section corner; iron post stamped "2682"-----	2,681.639
---	-----------

Feet.

Little Rock, inside of fence at Chaplin ranch, 54 feet east from post-office building and 25 feet east of quarter corner on west side of sec. 13, T. 5 N., R. 11 W.; iron post stamped "2910"----- 2,910.249

ELIZABETH LAKE, SOUTHWEST, TO ST. FRANCIS RANCH.

P. Andrade's house, 60 feet north of, 2 feet northeast of signboard at forks of road; iron post stamped "3403 L. A."----- 3,402.558
 Juan de Cellis's house, 1 mile south of, at turn of road on top of first hill south of bridge; iron post stamped "2604 L. A."----- 2,603.774
 Canyon, at turn of road in, 15 feet below small ditch where it turns around point of hill; iron post stamped "1913 L. A."----- 1,912.124

TEJON QUADRANGLE.

AT SEC. 11, T. 5 N., R. 16 W.

T. 5 N., R. 16 W., sec. 11, 1 mile south of St. Francis ranch, 40 feet west of road, on small flat, 5 feet east of cottonwood tree; iron post stamped "1600 L. A."----- 1,598.988

CASTAC, NORTHWEST ALONG WAGON ROAD AND TRAIL VIA CASTAC, PIRU, AND GRAPEVINE CREEKS TO ROSE STATION.

Carmichael's ranch, 1.5 feet west of northwest corner of fence, on north side of lane; iron post stamped "1172 L. A."----- 1,171.538
 Victor Cordova's residence, west side of, at west corner of fence around garden, 500 feet north of wagon road, on mesa above creek; iron post stamped "1457 L. A."----- 1,456.750
 House of Frank S. Randolph, 0.3 mile from, 12 feet east of trail to Oak Flats, at summit of ridge from Castac Creek; iron post stamped "2807 L. A."----- 2,806.940
 Spring Creek, 1,500 feet north of where it empties into Piru Creek, 45 feet north of trail where it turns north up Piru Canyon, on flat side of rock 6 by 2 by 4 feet; bronze tablet stamped "2060 L. A."----- 2,059.276
 Bainbridge's house, 250 feet northeast of, sec. 34, T. 7 N., R. 18 W., at north corner of fence around hog corral, at south end of and 30 feet east of center of wagon road to house; iron post stamped "2307 L. A."----- 2,306.266
 Alamo ranch, in jog of fence around house of M. C. Bailey; iron post stamped "2796 L. A."----- 2,795.270
 German ranch, Charles Schliesmayer's ranch, 1.5 feet west of corner, at intersection of fence lines, 45 feet south of road; iron post stamped "3463 L. A."----- 3,462.718
 Tejon Pass, at summit, 6 feet south of brush fence and 40 feet north of wagon road; iron post stamped "4230 L. A."----- 4,229.933
 Los Angeles and Kern counties; 6 penny wire nail in notch on post marking line----- 2,750.18
 Los Angeles and Kern counties, 2.5 feet north of line post; iron post stamped "3744 L. A."----- 3,744.104
 Fort Tejon, in front of gatepost at entrance to residence of superintendent of Castac ranch, 45 feet west of wagon road; iron post stamped "3174 L. A."----- 3,173.480
 Rose station, 0.5 mile south of top of grade from, 20 feet east of road at top of hill where road runs across low place to the south; iron post stamped "2132 L. A."----- 2,131.525

	Feet.
T. 10 N., R. 19 W., near northwest corner sec. 4, 12 feet south of gate across road, 10 feet east of center of road, 2 feet south of post 6 by 8 inches; iron post stamped "1085 L. A."-----	1, 084. 684

LUBEC, WEST TO SOLDIERS' HOME CAMP.

Soldiers' Home Camp, opposite deserted ranch house, 4 feet west of fence line, 6 feet south of wagon road; iron post stamped "4471"-----	4, 471. 721
--	-------------

GERMAN, EAST ALONG ROAD, VIA QUAIL AND NEENACH, TO MANZANA.

McKenzie's house, 160 feet northeast of northeast corner-of, at northeast corner of intersection of fences, 50 feet south of road; iron post stamped "3393 L. A."-----	3, 392. 690
La Liebre ranch, at corner of fence where road turns to east, 0.5 mile west of brick house on county road; iron post stamped "3091 L. A."-----	3, 090. 936
Henry Hatch's ranch (Vala Vista), at residence, 2 feet east of gate, in front of picket fence; iron post stamped "3039 L. A."-----	3, 039. 618
Manzana, opposite driveway from main road to post-office and store of A. E. Silvey, on east side of road, 1 foot south of fence post; iron post stamped "2870 L. A."-----	2, 869. 559

MOUNT PINOS QUADRANGLE.

MATILIJIA, NORTH ALONG TRAIL, TO OZENA.

Matilija Creek, north side of, 50 feet east of junction with Upper North Fork, west side of trail, at mouth of canyon, on sandstone boulder, 3.5 by 2.5 feet; bronze tablet stamped "1589 L. A."-----	1, 590. 189
Ortega Hill, at summit; on ridge between North Fork of Matilija River and Sespé River, on rock boulder 2.5 feet by 3 feet; bronze tablet stamped "4970 L. A."-----	4, 971. 315
Sespe River, 450 feet east of small cabin, mouth of canyon, 25 feet east of where trail leaves to go over Pine Mountain, in ledge of sandstone; bronze tablet stamped "4144 L. A."-----	4, 145. 021
Pine Mountain, 3 miles south of Ozena; at summit of ridge, 6 feet east of trail, in block of hard rock 18 by 24 inches; bronze tablet stamped "5314 L. A."-----	5, 314. 963
Ozena, 10 feet southwest of southwest corner of post-office, 10 feet north of wagon road; iron post stamped "3576 L. A."-----	3, 576. 691

OZENA, NORTHEAST ALONG WAGON ROAD, TO SOLDIERS' HOME CAMP NEAR LUBEC.

Ozena, 6 miles east of, at junction of canyons, 20 feet east of road where road to Lockwood Valley turns north, north end of grade; iron post stamped "4017 L. A."-----	4, 017. 421
Cuyama and Lockwood valleys, summit of ridge divide between, 8 feet north of wagon road; iron post stamped "5516 L. A."-----	5, 516. 643
Griffin, 1,200 feet northwest of residence of S. Snedden, 2 feet south of corner of fence at intersection, at turn of road; iron post stamped "4871 L. A."-----	4, 871. 830
Griffin and Cuddy's ranches, summit of divide between, 25 feet east of road; iron post stamped "5556 L. A."-----	5, 556. 014

	Feet.
OZENA NORTHWEST ALONG WAGON ROAD TO SEC. 19, T. 9 N., R. 24 W.	
T. 8 N., R. 24 W., sec. 8, south side of, 1.2 feet north of county-line post marked "C. L. 25" on north side, "V" on east side, and "S. B." on south side, 60 feet south of road; iron post stamped "3100 L. A."-----	3, 101. 168
T. 9 N., R. 24 W., sec. 19, 600 feet south of, George Root's adobe house, north edge of road, in corner of fence at junction; iron post stamped "2749 L. A."-----	2, 750. 005

SANTA BARBARA SPECIAL QUADRANGLE.

CARPINTERIA, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO SANTA BARBARA.	
Carpinteria, 30 feet east of southeast corner of station, 35 feet north of main track, 2 feet east of telegraph pole; iron post stamped "11 L. A."-----	11. 710
Serena, at switch stand; top of rail-----	28. 3
Ortega siding, in front of signboard; top of south rail-----	73. 8
Summerland, 30 feet east of east end of station, 1 foot east of telegraph pole, 60 feet north of center of track; iron post stamped "52 L. A."-----	52. 789
Summerland, in front of station; top of rail-----	52. 8
Miramar; top of rail-----	23. 6
Santa Barbara, on block 192, at west corner of City Hall; iron post stamped "37 L. A."-----	38. 011
Santa Barbara, Victoria street, in front of station; top of north rail-----	66. 7
Santa Barbara, 1.3 miles northwest of Victoria street station, in corner of fence at private road crossing, 300 feet east of east end of through cut, 40 feet north of track, 30 feet east of lone cottonwood tree; iron post stamped "128 L. A."-----	129. 237

GOLETA SPECIAL QUADRANGLE.

SANTA BARBARA, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO CAPITAN.	
Irma siding, opposite signboard; top of rail-----	158. 4
Goleta, 70 feet east of windmill frame, 120 feet south of center of track, 2 feet east of corner of fence, east side of road; iron post stamped "43 L. A."-----	43. 530
Elwood, in front of station; top of north rail-----	85. 6
Elwood, 1.7 miles west of, 660 feet east of milepost 358, at road crossing, 20 feet north of track, near fence; iron post stamped "57 L. A."-----	58. 212
Naples, in front of station; top of north rail-----	96. 2

SANTA BARBARA, WEST ALONG ROAD, TO NEAR GOLETA; THENCE NORTH OVER SAN MARCOS PASS, TO COLD SPRING CANYON.

Mrs. D. Pico Ruis's house, 45 feet north of northeast corner, 100 feet southwest of road to Laurel Springs, 2 feet south of sandstone boulder 7 by 6 by 6 feet; iron post stamped "1526 L. A."-----	1, 527. 336
---	-------------

GOLETA SPECIAL (SANTA YNEZ 30') QUADRANGLE.

AT COLD SPRING CANYON.

	Feet.
Cold Springs Hotel, south side of driveway to, on first terrace on west side of main road; iron post stamped "1630 L. A."-----	1, 631. 431

SANTA YNEZ 30' QUADRANGLE.

COLD SPRING CANYON, NORTHWEST, TO NEAR SANTA YNEZ.

San Marcos ranch, 100 feet south of old abode ruin, 30 feet west of road, 20 feet east of gate, in corner of fence; iron post stamped "842 L. A."-----	842. 818
San Marcos ranch, 5.8 miles northwest of, 5 feet north of road, at down-grade turn to cross canyon; iron post stamped "696 L. A."---	696. 911

SAN RAFAEL, NORTHEAST ALONG TRAIL, TO WASIOJA SCHOOL.

San Rafael Mountain; summit of trail-----	4, 374
Davy Brown's cabin, 80 feet southwest of southwest corner of, 100 feet south of creek crossing, 30 feet west of northwest corner of trail, at northwest corner of fence, in slab of sandstone 2 by 2 feet; bronze tablet stamped "2038 L. A."-----	2, 038. 767
Manzana schoolhouse, 4.8 miles southeast of, on top of ridge, about 7 feet south of trail, where creek makes big bend to north, in slab of sandstone; bronze tablet stamped "1511 L. A."-----	1, 512. 300
Manzana schoolhouse, east of, at foot of slope, 60 feet west of road, 600 feet south of mouth of Manzana Creek, in sandstone boulder, 6 by 5 by 3 feet; bronze tablet stamped "1163 L. A."-----	1, 164. 013
Williams Canyon, mouth of, on west bank, 750 feet north of adobe house, 30 feet south of road, in block of sandstone 18 by 30 inches; bronze tablet stamped "1489 L. A."-----	1, 490. 344
Williams Canyon, 5.1 miles northwest of mouth of, on north edge of trail, at mouth of small ravine, on top of cement gravel boulder 8 by 5 inches by 4 feet; bronze tablet stamped "3009 L. A."-----	3, 009. 980

SEC. 19, T. 9 N., R. 24 W., NORTHWEST ALONG CUYAMA RIVER ROAD AND OVER RIDGE, TO WASIOJA.

T. 10 N., R. 25 W., sec. 33, intersection of east and west and north and south fence lines, 150 feet south of road; iron post stamped "2404 L. A."-----	2, 405. 320
Cuyama ranch, at turn of road to house, 300 feet southwest of southwest corner of adobe house, 100 feet east of southwest corner of cattle corral, in southwest corner of fence; iron post stamped "2180 L. A."-----	2, 180. 912
Agua Caliente ranch, 2.2 miles west of east boundary of, 30 feet north of road, on flat on Agua Caliente ranch; iron post stamped "1935 L. A."-----	1, 935. 792
Green Canyon, mouth of, foot of slope, 15 feet east of road at turn up canyon where road leaves Cuyama River and goes over mesa to Wasioja; iron post stamped "1784 L. A."-----	1, 784. 899
Wasioja schoolhouse (3 miles east of Wasioja), 1.5 feet west of northeast corner of building; iron post stamped "2352 L. A."-----	2, 352. 663
Wasioja, 1 foot north of northwest corner of residence of J. B. Malory, in sec. 7, T. 10 N., R. 28 W.; iron post stamped "2303 L. A."---	2, 393. 950

PRIMARY LEVELING.

83

LOMPOC 30' QUADRANGLE.

CAPITAN, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO GAVIOTA.

	Feet.
Capitan, 1.8 miles east of, 1 foot west of milepost 352, 25 feet north of track; iron post stamped "109 L. A."-----	109.720
Capitan siding, in front of signboard; top of north rail-----	75.3
Morella siding; top of north rail-----	47.1
Tajiquas siding, 135 feet east of northeast corner of fence around railroad section house lot, 200 feet north of center of track, 50 feet south of road, 30 feet west of gate in fence; iron post stamped "59 L. A."-----	59.813
Gaviota, in front of telegraph office; top of south rail-----	94.9
Gaviota, 125 feet south of southwest corner of station, 80 feet south of center of track, against fence on edge of bluff above beach; iron post stamped "94 L. A."-----	93.869

GAVIOTA, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO JALAMA.

Santa Anita switch, at road crossing; center of track-----	64.2
Santa Anita switch, 1 mile west of, 355 feet east of signpost, 185 feet west of milepost 334, 20 feet south of track; iron post stamped "48 L. A."-----	48.281
Gata switch, at road crossing; top of rail-----	51.9
Concepcion, 200 feet northwest of station, 6 feet east of northeast support of water tank; iron post stamped "112 L. A."-----	112.427
Concepcion, in front of station; center of track-----	111.4

GAVIOTA, NORTH ALONG WAGON ROAD, TO LOS OLIVOS.

Las Cruces, 1 foot south of northeast corner of fence around public school; iron post stamped "339 L. A."-----	339.043
Nojoqui Pass, summit of, 25 feet south of road, on bench; iron post stamped "879 L. A."-----	879.296
Old Santa Ynez mission, 35 feet northeast of gate at entrance to grounds, south edge of road, at corner of fence; iron post stamped "495 L. A."-----	495.415

LOS OLIVOS, NORTHWEST ALONG PACIFIC COAST RAILWAY, TO SANTA MARIA; THENCE NORTHEAST, ALONG HIGHWAY, TO SUEY RANCH.

Los Olivos, 1 foot north of south corner of public school building, 1 foot west of brick foundation; iron post stamped "836 L. A."-----	836.150
Zaca, in front of station; base of west rail-----	774.7
Calkin siding, west end of, 1 foot south of fence, 60 feet northeast of road crossing; iron post stamped "939 L. A."-----	939.141
Wigmore siding, in front of signboard; base of south rail-----	751.3
Los Alamos, road crossing at station; top of rail-----	569.
Los Alamos public school, in northwest corner of lot, 1 foot east of junction of fence lines; iron post stamped "569 L. A."-----	569.324
Los Alamos, 4 miles west of, at point of curve near telegraph pole, 31 feet south of track; iron post stamped "425 L. A."-----	425.279
Harris, in front of station; top of east rail-----	308.3
Harris, 1.5 miles north of, top of bank, through cut, 30 feet east of track, 1 foot west of fence, between two crossings of creek; iron post stamped "378 L. A."-----	378.370
Blake, in front of station; top of rail-----	400.7
Divide, in front of station; top of rail-----	509.2

	Feet.
Graciosa schoolhouse, 15 feet south of northeast corner of fence around, 150 feet west of road crossing at track; iron post stamped "314 L. A."-----	314.411
Lake View, in front of station; top of east rail-----	253.8
Santa Maria, in front of station; top of east rail-----	203.4
Santa Maria, 140 feet east of east side of Pacific Coast Railway Company's station, 2 feet north of corner post of fence at northeast corner of Chapel street and Railroad reservation; iron post stamped "204 L. A."-----	204.496
Suey ranch house, at entrance to grounds, 8 feet east of gatepost at junction of fence lines, 20 feet west of center of road; iron post stamped "377 L. A."-----	377.067
SANTA YNEZ MISSION, EAST VIA SANTA YNEZ, TO FERRY; THENCE NORTH, VIA SANTA AGUEDA CREEK, TO SAN RAFAEL MOUNTAIN.	
Santa Ynez, at ferry crossing, 30 feet west of road, 15 feet south of tree to which cable is fastened, on flat; iron post stamped "522 L. A."-----	523.646
Santa Agueda (St. Agnes) Creek, 5 miles north of junction with Santa Ynez River, line between Donovan ranch and College pasture, 20 feet west of gate in fence, 85 feet west of creek; iron post stamped "807 L. A."-----	809.016
Los Olivos, 7.5 miles northeast of, 2.7 miles west of Birabent's house, at junction of small canyon below grade that turns north; iron post stamped "1501 L. A."-----	1,502.976
Birabent's house, 1.7 miles east of, 30 feet south of wagon road, on ridge near summit; iron post stamped "2982 L. A."-----	2,984.066
LOS ALAMOS, SOUTHWEST ALONG COUNTY ROAD VIA SANTA RITA (STEWART), TO LOMPOC; THENCE SOUTHEAST TO LAS CRUCES.	
Los Alamos, 6.3 miles southwest of, on saddle between two ridges, on west side of road, 25 feet south of gate in fence; iron post stamped "1476 L. A."-----	1,476.629
Stewart (Santa Rita), 0.8 mile west of, in southwest corner of field, on north side of road, at corner of lane to barnyard of D. Streeter; iron post stamped "415 L. A."-----	415.297
Purisima Mission Building, 0.3 mile south of ruins of, at southwest corner of road where it turns south, opposite county tank and water trough; iron post stamped "112 L. A."-----	112.210
Lompoc, at station of Southern Pacific Railroad, in front of telegraph office; top of south rail-----	94.9
Lompoc, at southwest corner of Railroad avenue and Eighth street, in northeast corner of fence around public schoolhouse lot, 36 feet south of main track; iron post stamped "93 L. A."-----	93.588
Lompoc, 4.6 miles southeast of, south side of gate, on east side of main road, in east corner of fence at intersection of fences; iron post stamped "238 L. A."-----	237.971
San Julian ranch, 0.9 mile west of house, in corner of fence, 30 feet south of gate; iron post stamped "603 L. A."-----	603.065
Las Cruces, 4.1 miles northwest of, 30 feet north of road, 40 feet south of telephone pole, 2.5 feet south of white stake No. 24, in mound of rocks; iron post stamped "927 L. A."-----	926.752

SANTA YNEZ MISSION, WEST ALONG ROAD TO STEWART.

	Feet.
Santa Rita (Stewart), 4.3 miles southeast of, road at culvert, 6 feet west of road, at summit; iron post stamped "552 L. A."-----	552. 022

SANTA MARIA, SOUTHEAST VIA GAREY AND CAT CANYON, TO LOS ALAMOS.

Santa Maria, 5.8 miles southeast of, 75-foot south of small frame house on land owned by Mr. Blockman, 50 feet south of poplar tree 18 inches in diameter; 15 feet southwest of right turn in road, 2 feet southwest of fence corner; iron post stamped "322 L. A."-----	321. 920
Garey, 60 feet north and 10 feet east of schoolhouse, 6 feet southwest of northeast corner of fence around schoolhouse; iron post stamped "376 L. A."-----	376. 063
Garey, 4.8 miles southeast of, 70 feet northeast of Hopedale schoolhouse, 150 feet south of road, 20 feet west of fence; iron post stamped "596 L. A."-----	596. 067
Garey, 8 miles southeast of, 12 feet southeast of road at summit; iron post stamped "1252 L. A."-----	1, 252. 001

GUADALUPE QUADRANGLE.

SANTA MARIA, WEST ALONG COUNTY ROAD, TO GUADALUPE.

Bennett schoolhouse, in southeast corner of school yard, 8 feet from corner of fence; iron post stamped "144 L. A."-----	144. 197
--	----------

GUADALUPE, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO JALAMA.

Guadalupe, 0.25 mile south of station, 100 feet north of point where switch leaves for sugar factory, 30 feet west of switch target at south end of Guadalupe yards, 50 feet north of county road, at south end of fence; iron post stamped "84 L. A."-----	84. 063
Waldorf, 3 feet north of signpost; iron post stamped "201 L. A."-----	201. 668
Casmalia, 100 feet south of, south side of track, 30 feet west of wagon road; iron post stamped "291 L. A."-----	291. 092
Narlon sign post, 3 feet north of, east side of track; iron post stamped "129 L. A."-----	129. 200
Lompoc Landing, 60 feet west of crossing signpost, at road crossing, in corner of fence; iron post stamped "158 L. A."-----	158. 026
Surf, 300 feet north of station, north side of wagon road, near southwest point of Y, 6 feet northeast of crossing signpost; iron post stamped "36 L. A."-----	35. 600
Surf, in front of station; center of track-----	46. 0
Weser, opposite signpost; center of track-----	133. 1
Honda, signpost; center of track-----	108. 6
Honda, 900 feet south of signpost, 300 feet north of south end of switch, 3 feet southwest of railroad crossing signpost; iron post stamped "110 L. A."-----	110. 738
Arguello, at signpost; top of rail-----	173. 7
Arguello, 30 feet east of east end of switch, 30 feet north of track, opposite white post; iron post stamped "161 L. A."-----	160. 789
Sudden, west end of gate leading into station, 250 feet west of telegraph office; iron post stamped "85 L. A."-----	84. 588

	Feet.
Jalama Creek, 50 feet north of north end of bridge over, 30 feet west of track, opposite large red water tank; iron post stamped "96 L. A."-----	95.748
Jalama, switch signpost; center of track-----	102.4

NARLON, EAST ALONG ROAD, TO HARRIS.

Narlon, 5 miles southeast of, south of San Antonio Creek, at foot of Barker's grade on Lompoc road, at southeast corner of wire fence, in boulder 24 by 36 by 36 inches above ground; aluminum tablet stamped "95 L. A."-----	95.462
---	--------

SURF, EAST ALONG SOUTHERN PACIFIC RAILROAD (LOMPOC BRANCH), TO LOMPOC.

Baroda, 3.5 miles southeast of, 30 feet west of county windmill No. 11, southwest corner of railroad crossing inclosure; iron post stamped "31 L. A."-----	30.080
--	--------

BALLARAT, FURNACE CREEK, AND PILOT PEAK, 1° QUADRANGLES (WHICH INCLUDE VARIOUS 30' QUADRANGLES NOT MENTIONED); BARSTOW 30' QUADRANGLE; AND RANDSBURG 15' QUADRANGLE.

INYO, KERN, AND SAN BERNARDINO COUNTIES.

The elevations in the following list are based upon the precise line Mohave, Cal., to Lida, Nev., of the United States Geological Survey and upon an elevation at Barstow determined by the United States Coast and Geodetic Survey in 1906 by precise leveling from San Diego.

The leveling was done mostly by Mr. L. F. Biggs, levelman, in 1907. Part of the work on Randsburg quadrangle was done in 1900 under Mr. L. C. Fletcher, topographer, by Mr. C. C. Ward, levelman, republished from Bulletin No. 185 corrected, and additional work on Pilot Peak 1° quadrangle and part of the work on Ballarat 1° quadrangle was done in 1905 by Messrs. Biggs and Ress Philips, and in 1906 by Mr. Philips. The 1906 and 1907 lines were run single with prism level and yard rods.

The bench marks are stamped serially or with figures of elevation, or both, and with datum letters. Those stamped "J" on Randsburg quadrangle are stamped with figures of elevation about 7 feet too great, and those of 1905-6, having been stamped prior to office reduction, are stamped about 1 to 4 feet too low.

BARSTOW 30' QUADRANGLE.

BARSTOW, NORTH 6 MILES ALONG ROAD TOWARD BALLARAT.

	Feet.
Barstow, 215 meters west of Atchison, Topeka and Santa Fe station, in fence corner of land of Charles O'Donnell; top of stone post (U. S. Coast and Geodetic Survey B. M. H. 1906)-----	2,101.707

	Feet.
Barstow, 2.6 miles north of, 20 feet west of road; iron post stamped "B 2386 1906"-----	2, 386. 487
Barstow, 6 miles north of, at Forks of roads; iron post stamped "B 2695 1906"-----	2, 691. 094

PILOT PEAK 1° QUADRANGLE.

POINT 6 MILES NORTH OF BARSTOW, TO BALLARAT.

Barstow, 9 miles north of, 10 feet north of 18-inch Yucca; iron post stamped "B 2892 1906"-----	2, 892. 427
Barstow, 12.5 miles north of, summit 30 feet west of road; iron post stamped "B 3960 1907"-----	3,960. 261
Barstow, 15 miles north of, 20 feet east of road; iron post stamped "B 3679 1907"-----	3, 679. 390
Barstow, 18.2 miles north of, 20 feet east of road; iron post stamped "B 3306 1907"-----	3, 306. 461
Barstow, 21.3 miles north of, 20 feet east of road; iron post stamped "B 3221 1907"-----	3, 220. 762
Barstow, 24.8 miles north of, 20 feet east of road, 200 feet south of dry lake; iron post stamped "B 3006 1907"-----	3, 005. 657
Copper City, 7.3 miles south of, 20 feet east of road; iron post stamped "B 3035 1907"-----	3, 035. 070
Copper City, 3.5 miles south of, 20 feet east of road; iron post stamped "B 3291 1907"-----	3, 291. 006
Copper City House, 100 feet east of, iron post stamped "B 4001 1907"-----	4, 000. 932
Copper City, 3.2 miles north of, on summit 15 feet west of road; iron post stamped "4402 B 1907"-----	4, 402. 326
Granite Wells, junction of roads, large boulder; aluminum tablet stamped "B 3936 1907"-----	3, 939. 564
Granite Wells, 2.7 miles north of, 40 feet east of road, sandstone ledge; aluminum tablet stamped "B 3404 1907"-----	3, 403. 590
Granite Wells, 6 miles north of, 40 feet east of road, boulder; aluminum tablet stamped "B 2719 1907"-----	2, 718. 586
Granite Wells, 8.9 miles north of, 20 feet east of road; iron post stamped "B 2370 1907"-----	2, 270. 292
Granite Wells, 12.2 miles north of, 20 feet east of road; iron post stamped "2276 B 1907"-----	2, 175. 828
Lone Willow, 10 miles south of, 15.3 miles north of Granite Wells, 20 feet east of road; iron post stamped "B 2203 1907"-----	2, 103. 810
Lone Willow, 6 miles south of, 20 feet east of road; iron post stamped "2121 B 1907"-----	2, 021. 245
Lone Willow, 2.6 miles east of, at junction of road to Lone Willow; iron post stamped "2016 1907 B"-----	1, 915. 696
Lone Willow, 2.5 miles north of, 10 feet east of road, large boulder; aluminum tablet stamped "B 1932 1907"-----	1, 832. 120
Lone Willow, 5.4 miles north of, 20 feet east of road at junction of road to Ballarat; iron post stamped "B 1786 1907"-----	1, 685. 479
Lone Willow, 8.1 miles north of, 200 feet north of large boulder, 30 feet west of road; iron post stamped "B 1907 1632"-----	1, 631. 582
Lone Willow, 10.1 miles north of, 10 feet east of road; boulder, tablet stamped "B 1907 1427"-----	1, 427. 216
Lone Willow, 12.7 miles north of, 17.1 miles south of Ballarat, 20 feet east of road; iron post stamped "B 1907 1229"-----	1, 228. 940

	Feet.
Ballarat, 14 miles south of, 20 feet west of road; iron post stamped "B 1907 1098"-----	1, 098. 300
Ballarat, 10.9 miles south of, 20 feet east of road; iron post stamped "B 1907-1059"-----	1, 059. 047
Ballarat, 7.6 miles south of, at junction of road, 10 feet east of road; iron post stamped "B 1907 1051"-----	1, 051. 027

BARSTOW, ALONG BALLARAT ROAD EAST, TO POINT 3.3 MILES EAST OF WINDGATE PASS.

Windgate Pass, at summit, 10 feet east of road, 2.5 miles east of junction of road; iron post stamped "B 1977 1907"-----	1, 976. 778
Windgate Pass, 3.3 miles east of, 20 feet north of road; iron post stamped "B 1925 1907"-----	1, 924. 983

FREEMAN, SOUTHEASTERLY TO RANDBURG; THENCE EASTERLY TO GRANITE WELLS.

Freeman, 400 feet south of, 20 feet west of road, on hillside, south side of Walker Canyon; iron post stamped "3379 B"-----	3, 381. 335
Freeman, 5 miles east of, 150 feet north of road, on point 300 yards west of wash, 10 feet east of section corner, large bowlder; tablet stamped "B 2705 1907"-----	2, 706. 763
Freeman, 123 miles east of, 30 feet south of road, ledge; tablet stamped "B 2975 1907"-----	2, 977. 063
Willow Springs, at summit of divide south of, 15 feet west of road, 10 feet from granite bowlder; iron post stamped "J 4116"-----	4, 109. 639
Garden station, 3.3 miles south of, at junction of road to Willow Springs, 300 feet west of road; volcanic bowlder; aluminum tablet stamped "B 3512 1907"-----	3, 513. 244
Randsburg, 5.1 miles north of, 25 feet northwest of junction of Old Borax road to Garlock, 20 feet northwest of road; iron post stamped "3010 J"-----	3, 002. 810
Randsburg, 1.5 feet west of door of butcher shop (stone building), 1 foot above ground; bronze tablet stamped "3530 J"-----	3, 522. 737
Johannesburg, 2.5 feet northwest of platform of station, north side of track; iron post stamped "3544 J"-----	3, 536. 333
Johannesburg, 4.4 miles east of, on summit of divide 20 feet west of road; iron post stamped "3326 J"-----	3, 317. 945
Ts. 29 and 30 S., Rs. 41 and 42 E., 10 feet southeast of common corner; iron post stamped "2823 J"-----	2, 814. 281
Granite Wells, 9 miles southwest of, 30 feet south of Blackwater Well, granite ledge flush with ground; tablet stamped "B 3520 1907"-----	3, 521. 627
Granite Wells, 7.3 miles southwest of, on summit 20 feet north of road, large bowlder; tablet stamped "B 3952 1907"-----	3, 952. 817
Granite Wells, 1.5 miles south of, 39.8 miles north of Barstow, 10 feet east of road; point on small bowlder painted "3947 USBM"-----	3, 946. 900

FREEMAN, NORTHWEST TO WALKERS PASS.

Walkers Pass, 5 miles southeast of, 50 feet west of road, 200 feet east of spring, granite bowlder; aluminum tablet stamped "BB"-----	4, 033. 279
---	-------------

POINT 6.6 MILES NORTH OF MOUNT VERNON MILL, SOUTHWEST TO INDIAN WELLS NORTH OF FREEMAN.

Mount Vernon Mill, 4 miles north of, 350 feet west of spring, 20 feet northwest of road, in top of large granite bowlder; bronze tablet stamped "5323 B 1905 24"-----	5, 326. 752
---	-------------

	Feet.
Mount Vernon Mill, 1.1 miles north of, 5 feet south of road, 40 feet west of Vurless cabin, in large granite boulder; bronze tablet stamped "4276 B 1905"-----	4, 279. 602
Mount Vernon Mill, 2.25 miles west of, at mouth of Mount Springs Canyon, 20 feet west of road, in large boulder; bronze tablet stamped "3388 B"-----	3, 392. 108
Mount Vernon Mill, 5.8 miles southwest of, 15 feet west of road, in cropping of granite boulder; bronze tablet stamped "2631 B"-----	2, 635. 801
Mount Vernon Mill, 8.8 miles southwest of, 25 feet west of road; iron post stamped "2273 B"-----	2, 277. 960
Desert Well, 1 mile east of, 35 feet north of road, in borax flat in ledge; bronze tablet stamped "2199 B"-----	2, 203. 775
Desert Well, 2 miles south of, 100 feet east of road, on south side of dry lake; iron post stamped "2209 B"-----	2, 214. 008
Desert Well, 5.2 miles southwest of, 50 feet east of road; iron post stamped "2225 B"-----	2, 229. 966
Indian Wells, 5.5 miles northeast of, 30 feet east of road, in alkali flat; iron post stamped "2236 B"-----	2, 241. 178
Indian Wells, 2.5 miles north of, 15 feet west of road; iron post stamped "2402 B"-----	2, 407. 195
Indian Wells, 300 feet north of, 10 feet west of road; iron post stamped "F 16"-----	2, 740. 161

RANDSBURG 15' QUADRANGLE (PILOT PEAK 1° QUADRANGLE).

JOHANNESBURG WEST TO RANDSBURG.

Johannesburg, in front of station; top of rail-----	3, 537. 3
Johannesburg, 25 feet northwest of platform of station, north side of track; iron post stamped "3544 J" (recovered by Biggs, 1907)-----	3, 536. 333
Randsburg, 1.5 feet west of door of butcher shop (store building), 1 foot above ground; bronze tablet stamped "3530 J" (recovered by Biggs, 1907)-----	3, 522. 737

RANDSBURG, NORTH TO GARDEN STATION.

Randsburg, 5.1 miles north of, 25 feet northwest of junction of old borax road to Garlock, 20 feet northwest of road; iron post stamped "3010 J" (recovered by Biggs, 1907)-----	3, 002. 810
Garden station, 1 mile northeast of, sec. 18, T. 28 S., R. 41 E., Mount Diablo meridian, 50 feet northwest of road, 4 feet east of northwest corner of section; iron post stamped "3024 J." (This bench mark is north of Randsburg 15' quadrangle on Pilot Peak, 1° quadrangle)-----	3, 016. 325

IN T. 28 S., R. 40 E., NORTHWEST TO SUMMIT OF DIVIDE SOUTH OF WILLOW SPRINGS.

T. 28 S., R. 40 E., sec. 34, 300 feet west of junction of roads, in volcanic boulder; aluminum tablet stamped "3512 B 1907" (set by Biggs, 1907)-----	3, 513. 244
Willow Springs, at summit of divide south of, 15 feet west of road 10 feet from granite boulder; iron post stamped "4116 J" (recovered by Biggs, 1907)-----	4, 109. 639

GARDEN STATION, SOUTH VIA SUMMIT DIGGINGS, TO JOHANNESBURG.

Little Dry Lake, summit of divide at south end of, 30 feet east of road; iron post stamped "3220 J"-----	3, 212.190
--	------------

RANDSBURG, SOUTHEAST TO BLACK HAWK MINE; THENCE NORTH TO JOHANNESBURG.

	Feet.
Black Hawk Mine, on ridge 750 feet north of, 30 feet north of road and 50 feet from junction with road to Stringer; iron post stamped 3706 J"-----	3, 698. 691

JOHANNESBURG, EAST VIA SKILLING WELLS ROAD, TO TOWNSHIP CORNER; THENCE NORTH-EAST TO SOUTHWEST CORNER SEC. 29, T. 29 S., R. 42 E.

Johannesburg, 4.4 miles east of, on summit of divide 20 feet west of road; iron post stamped "3326 J" (recovered by Biggs, 1907)-----	3, 317. 945
T. 30 S., R. 42 E., 10 feet southeast of northwest corner sec. 6; iron post stamped "2823 J" (recovered by Biggs, 1907)-----	2, 814. 281
T. 29 S., R. 42 E., 5 feet northeast of southwest corner sec. 29; iron post stamped "2812," (single spur)-----	2, 803. 223

JOHANNESBURG, SOUTH ALONG LINE OF RANDSBURG RAILROAD (SINGLE SPUR LINE).

St. Elmo, 50 feet west of switch stand, iron post stamped "3184 J."-----	3, 176. 109
St. Elmo, 3.84 miles south of, 30 feet west of track; iron post stamped "2984 J"-----	2, 975. 880

QUADRANGLE EAST OF PILOT PEAK.

NEAR WINDGATE PASS, NORTHEASTERLY TO POINT 22 MILES FROM WINDGATE PASS.

Windgate Pass, 6.3 miles east of, 50 feet east of road, large boulder; tablet stamped "B 1863 1907"-----	1, 863. 300
Windgate Pass, 9.6 miles east of, 20 feet east of road; iron post stamped "B 1730 1907"-----	1, 730. 316
Windgate Pass, 13.3 miles northeast of, 30 feet east of road; iron post stamped "B 1610 1907"-----	1, 609. 840
Windgate Pass, 15.5 miles northeast of, 20 feet east of road; iron post stamped "B 1907 1278"-----	1, 278. 004
Windgate Pass, 17.5 miles northeast of, 10 feet east of road, boulder; tablet stamped "B 1907 930"-----	929. 394
Windgate Pass, 21.1 miles north of, 200 feet north of road, large boulder; aluminum tablet stamped "B 1907 480"-----	479. 238

FURNACE CREEK 1° QUADRANGLE.

POINT 22 MILES NORTHEAST OF WINDGATE PASS, NORTH THROUGH DEATH VALLEY, TO STATE LINE NEAR DAYLIGHT SPRINGS.

Bennett's well, 16 miles south of, 20 feet east of road; iron post stamped "B 1907 -215"-----	-215. 156
Bennett's well, 13.1 miles south of, 20 feet east of road; iron post stamped "B 1907 -224"-----	-224. 676
Bennett's well, 10 miles south of, 20 feet east of road; iron post stamped "B 1907 -235"-----	-235. 087
Bennett's well, 7.2 miles south of, 40 feet east of Mesquite Wells; iron post stamped "B 1907 -244"-----	-224. 460
Bennett's well, 4.2 miles south of, 20 feet east of road; iron post stamped "B 1907 -248"-----	-248. 546
Bennett's well, 20 feet east of; iron post stamped "B 1907 -276"-----	-266. 393
Bennett's well, 3.5 miles north of, 20 feet east of road; iron post stamped "B 1907 -260"-----	-250. 230
Bennett's well, 7 miles north of, 20 feet east of road; iron post stamped "B 1907 -253"-----	-243. 929

* This bench mark is south of Randsburg 15' quadrangle on Pilot Peak 1° quadrangle.

	Feet.
Bennett's Well, 10.1 miles north of, 20 feet east of road; iron post stamped "B 1907 -263"-----	-253. 412
Furnace Creek ranch, 8.6 miles south of, 20 feet east of road, in borax flat; iron post stamped "B 1907 -284"-----	-274. 180
Furnace Creek ranch, 5.9 miles south of, 20 feet east of road; iron post stamped "B 1907 -233"-----	-223. 173
Furnace Creek ranch, 2.8 miles south of, 20 feet west of road; iron post stamped "B 1907 -227"-----	-217. 576
Furnace Creek ranch, 300 feet south of house at road forks; iron post stamped "B 1907 -188"-----	-178. 357
Furnace Creek ranch, 4.6 miles north of, 20 feet east of road; iron post stamped "B 1907 -262"-----	-253. 389
Furnace Creek ranch, 7.4 miles north of, 400 feet west of road; stone monument (corner of North Coleman borax deposit), top painted "USBM -261"-----	-251. 44
Furnace Creek ranch, 8.6 miles north of, 20 feet east of road; iron post stamped "B 1907 -258"-----	-248. 608
Furnace Creek ranch, 12.4 miles north of, 60 feet north of road; iron post stamped "B 1907 1"-----	10. 753
Furnace Creek ranch, 16 miles north of, 50 feet east of road, sandstone ledge; aluminum tablet stamped "B 1907 669"-----	678. 290
Furnace Creek ranch, 21 miles north of, at junction of road to Stovepipe, 20 feet east of road, rock ledge; aluminum tablet stamped "B 1907 2253"-----	2, 263. 047
Daylight Springs, 3.5 miles south of, 20 feet east of road, rock ledge; aluminum tablet stamped "B 1907 3117"-----	3, 127. 138
Daylight Springs, 0.2 mile east of, on summit 20 feet east of road; iron post stamped "B 1907 4307"-----	4, 317. 380

ROAD FORK 11 MILES NORTH OF FURNACE CREEK RANCH, NORTHWEST 11 MILES TOWARD
STOVEPIPE.

Furnace Creek ranch, 12 miles north of, 9 miles southeast of Stovepipe, 20 feet east of road; iron post stamped "B 1907 -231"----- -231. 630

STATE LINE, WEST TO FURNACE CREEK RANCH.

Kings Springs, 12 miles west of, at junction of roads; iron post stamped "B 1907 2101"-----	2, 101. 736
Kings Springs, 13.2 miles west of, 1.7 miles north of Nelson's mill No. 2, 20 feet west of road; iron post stamped "B 1907 2117"-----	2, 117. 545
Nelson's well No. 2, 200 feet west of; iron post stamped "B 1907 2180"-----	2, 179. 977
Nelson's well No. 2, 4.5 miles west of, 20 feet south of road; iron post stamped "B 1907 2572"-----	2, 572. 655
Summit, 1.5 miles east of, 20 feet south of road, bowlder; aluminum tablet stamped "B 1907 2864"-----	2, 864. 839
Summit, 20 feet south of road; iron post stamped "B 1907 3041"-----	3, 041. 742
Smith Tank, 5.6 miles east of, 20 feet south of road, rock ledge; aluminum tablet stamped "B 1907 2701"-----	2, 701. 536
Smith Tank, 1.4 miles east of, at junction of Greenwater road, 20 feet north of road; iron post stamped "B 1907 1938"-----	1, 939. 069

	Feet.
Smith Tank, 2.1 miles west of, 8.1 miles east of Furnace Creek, 30 feet south of road, bowlder; aluminum tablet stamped "B 1907 1330"-----	1,331.062
Furnace Creek, 2.5 miles east of, at spring (head of Furnace Creek), 40 feet north of road; iron post stamped "B 1907 283"-----	283.463

BALLARAT 1° QUADRANGLE.

BENCH MARK ON FURNACE CREEK QUADRANGLE (9 MILES SOUTHEAST OF STOVEPIPE), NORTH-WEST VIA STOVEPIPE, TO MESQUITE SPRING.

Stovepipe, 6.3 miles southeast of, on summit 20 feet east of road; iron post stamped "B 1907 -68"-----	-68.098
Stovepipe, 3.6 miles southeast of, 20 feet north of road; iron post stamped "B 1907 -90"-----	-90.741
Stovepipe, 150 feet east of store, at junction of roads; iron post stamped "B 1907 -49"-----	-49.118
Stovepipe, 3.3 miles northwest of, 30 feet east of road; iron post stamped "B 1907 -13"-----	-13.539
Stovepipe, 5.6 miles northwest of, 20 feet west of road, bowlder; tablet stamped "B 1907 -29"-----	-29.794
Surveyors Well, 7.5 miles north of, 1.2 miles south of Lost Wagons; 50 feet east of road, large white bowlder; aluminum tablet stamped "B 1907 +373"-----	372.700
Mesquite Spring, 400 feet south of, at junction of roads, bowlder; tablet stamped "B 1907 1739"-----	1,738.824

STOVEPIPE, SOUTHWEST TO EMIGRANT WASH; THENCE SOUTH TO BALLARAT.

Stovepipe, 2.5 miles southwest of, 20 feet north of road; iron post stamped "B 1907 -46"-----	-46.078
Stovepipe, 6.3 miles southwest of, 20 feet north of road; iron post stamped "B 1907 0000"-----	-0.566
Stovepipe, 9.6 miles southwest of, 20 feet north of road; iron post stamped "B 1907 637"-----	636.331
Stovepipe, 12.5 miles southwest of, 6.7 miles north of, Emigrant Spring, 20 feet north of road; iron post stamped "B 1907 1542"-----	1,541.757
Emigrant Spring, 4.2 miles north of, 20 feet north of road; iron post stamped "B 1907 2380"-----	2,379.264
Emigrant Spring, 1.7 miles north of, 40 feet east of road; iron post stamped "B 1907 3199"-----	3,198.574
Emigrant Spring, 100 feet south of restaurant at station; iron post stamped "B 1907 4046"-----	4,045.131
Emigrant Spring, 4.3 miles south of, 3.1 miles north of Summit, 20 feet east of road; iron post stamped "B 1907 4899"-----	4,898.715
Summit between Death and Panamint valleys, 20 feet west of road; iron post stamped "B 1907 5321"-----	5,320.034
Summit, 2.9 miles southwest of, 5.6 miles east of Wild Rose, 20 feet north of road; iron post stamped "B 1907 5021"-----	5,020.272
Wild Rose, 2.2 miles north of, 20 feet west of road; iron post stamped "B 1907 4462"-----	4,461.826
Wild Rose, 20 feet west of road; iron post stamped "3617 B 1907"-----	3,616.896
Wild Rose, 3 miles south of, 14.7 miles north of Ballarat, 20 feet east of road; iron post stamped "B 1907 2496"-----	2,495.773

	Feet.
Ballarat, 11.7 miles north of, 20 feet west of road; iron post stamped " B 1907 1989 "-----	1, 988. 023
Ballarat, 8.2 miles north of, 200 feet south of well; iron post stamped " B 1907 1104 "-----	1, 103. 198
Ballarat, 4 miles north of, 20 feet east of road; iron post stamped " B 1907 1082 "-----	1, 080. 982
Ballarat, 300 feet north of post-office, large boulder; aluminum tablet stamped " KEELER 1906 1069 "-----	1, 069. 587
Ballarat, in front of post-office; iron post stamped " 1066 "-----	1, 066. 729

BALLARAT, SOUTH 3.8 MILES.

Ballarat, 1.6 miles south of, 20 feet east of road, boulder; aluminum tablet stamped " B 1907 1054 "-----	1, 054. 200
Ballarat, 3.8 miles south of, 20 feet east of road; iron post stamped " B 1907 1049 "-----	1, 049. 193

KEELER, SOUTHEAST ALONG ROAD, TO DARWIN.

Keeler, 3.4 miles southeast of, 25 feet east of road; iron post stamped " 3629 B "-----	3, 631. 009
Keeler, 6.4 miles southeast of, 80 feet northeast of road, dark volcanic boulder; aluminum tablet stamped " 3923 B "-----	3, 924. 927
Keeler, 9.6 miles southeast of, 0.5 mile south of summit, 25 feet east of road, volcanic boulder; aluminum tablet stamped " 4298 B "-----	4, 299. 545
Keeler, 12.8 miles southeast of, 1,000 feet east of stone corral, 20 feet north of road; iron post stamped " 4551 B "-----	4, 553. 026
Darwin, 8.4 miles northwest of, 25 feet north of road, black volcanic boulder; aluminum tablet stamped " 4878 B "-----	4, 880. 389
Darwin, 5.3 miles northwest of, 25 feet south of road; iron post stamped " 5269 B 1905 "-----	5, 290. 907

DARWIN, SOUTH AND SOUTHWEST VIA COSO HOT SPRINGS, TO LITTLE LAKE (A POINT ON FARMER'S PRECISE LINE).

Darwin, 2 feet from southeast corner of post-office; iron post stamped " 4746 B "-----	4, 748. 596
Darwin, 2.5 miles south of, 25 feet west of road, 15 feet west of pipe line, granite rock; aluminum tablet stamped " 4787 B "-----	4, 789. 915
Darwin, 5.7 miles south of, 25 feet west of road, granite boulder; aluminum tablet stamped " 5425 B "-----	5, 427. 476
Coso, 200 feet north of, 200 feet north of spring, 200 feet northwest of road, summit of cliff of boulders; aluminum tablet stamped " 5829 B "-----	5, 831. 378
Coso, 2.8 miles southwest of, 1,700 feet north of Cole Spring, 25 feet south of road, granite boulder; aluminum tablet stamped " 6413 B "-----	6, 415. 332
Coso, 6.6 miles southwest of, 20 feet west of road, on summit west of volcanic mountain, volcanic rock; aluminum tablet stamped " 6251 B "-----	6, 253. 873
Coso Hot Springs, 3.3 miles northeast of, 40 feet west of road at east side of large gulch, granite boulder; aluminum tablet stamped " 4398 B "-----	4, 392. 066
Coso Hot Springs, 1,000 feet west of, granite rock; aluminum tablet stamped " 3632 B "-----	3, 634. 850

	Feet.
Coso Hot Springs, 4.1 miles west of, 20 feet south of road, at top of steep pitch volcanic rock; aluminum tablet stamped "4059 B"_____	4, 061. 598
Coso Hot Springs, 8 miles west of, 60 feet southeast of road, opposite small crater, granite bowlder; aluminum tablet stamped "3406 B"_____	3, 408. 636
Little Lake, 1.7 miles north of, 50 feet west of road, summit of bowlder; aluminum tablet_____	3, 329. 511

DARWIN, SOUTH ALONG ROAD, TO POINT 5 MILES SOUTH OF MILLSPAUGH; THENCE SOUTH 6 MILES TO POINT 6.6 MILES NORTH OF MOUNT VERNON.

Darwin, southwest corner of post-office; iron, post stamped "4746 B"_____	4, 748. 596
Darwin, 3 miles southeast of, 15 feet west of road, granite bowlder; aluminum tablet stamped "4463 B"_____	4, 465. 944
Darwin, 6.4 miles southeast of, 25 feet east of road at junction; iron post stamped "4446 B"_____	4, 449. 055
Darwin, 10.5 miles southeast of, 25 feet east of road, granite bowlder; aluminum tablet stamped "4815 B"_____	4, 818. 215
Darwin, 12.3 miles southeast of, 20 feet west of road, granite bowlder; bronze tablet stamped "5324 B"_____	5, 327. 071
Darwin, 15 miles southeast of, 60 feet west of Frank Steward's house; iron post stamped "5722 B"_____	5, 725. 383
Mount Vernon Mill, 12.4 miles north of, 5 miles west of Millsbaugh, 25 feet east of road; iron post stamped "5685 B 1905"_____	5, 688. 170
Mount Vernon Mill, 9.3 miles north of, 50 feet west of road, in large granite bowlder; bronze tablet stamped "5842 B 1905"_____	5, 845. 037
Mount Vernon Mill, 6.6 miles north of, 15 feet east of road, near summit, in large granite bowlder; bronze tablet stamped "5884 B"_____	5, 887. 468

FIVE MILES WEST OF MILLSPAUGH, EAST ALONG STAGE ROAD VIA MILLSPAUGH, TO BALLARAT.

Millsbaugh, 1 mile west of, 20 feet south of road, in large bowlder; aluminum tablet stamped "6073 KEELER"_____	6, 074. 448
Millsbaugh, 100 feet west of post-office, 75 feet south of well, in large outcropping bowlder; aluminum tablet stamped "6157 KEELER"_____	6, 157. 805
Millsbaugh, 3 miles southeast of, 0.2 mile east of spring and stage station, 12 feet north of road, in top of granite bowlder; bronze tablet stamped "4857 KEELER"_____	4, 858. 355
Millsbaugh, 5.5 miles southeast of, in canyon 100 feet west of high black cliff, in large outcropping bowlder; aluminum tablet stamped "3517 KEELER"_____	3, 517. 921
Ballarat, 8.7 miles northwest of, on broad slope overlooking Ballarat and Panamint valleys, below mouth of Shepherds Canyon, 20 feet north of road, in large granite bowlder; aluminum tablet stamped "2460 KEELER 1905"_____	2, 461. 208
Ballarat, 4.6 miles west of, 15 feet north of road, in outcropping bowlder; aluminum tablet stamped "1387 KEELER"_____	1, 389. 160
Ballarat, 2.4 miles west of, 40 feet west of junction of Ballarat and Bullfrog roads, in large borax flat; iron post stamped "KEELER 1045"_____	1, 045. 700
Ballarat, 300 feet north of post-office, 20 feet north of road, in large outcropping bowlder; aluminum tablet stamped "1069 KEELER"_____	1, 069. 587
Ballarat, 20 feet south of post-office; iron post stamped "1066 KEELER" set in cubic yard of concrete_____	1,066. 729

MESQUITE SPRINGS NORTH TO STATE LINE MONUMENT NO. 82.

	Feet.
Mesquite Springs, 4.8 miles north of, opposite Grapevine Springs, 20 feet west of road, large boulder; tablet stamped "B 1907 2078"-----	2, 078. 164
Sand Spring, 50 feet southwest of, boulder flush with ground; tablet stamped "B 1907 3127"-----	3, 127. 681
Sand Spring, 4 miles north of, 200 feet east of road; California-Nevada State-line monument No. 82, top of painted post-----	3, 741. 714
Sand Spring, 4 miles north of, State-line monument No. 82, on boulder; tablet stamped "B 1907 3739"-----	3, 739. 866

KERNVILLE AND OLANCHA QUADRANGLES.

INYO, KERN, AND TULARE COUNTIES.

The elevations in the following list are based upon precise levels run in 1905 from Mohave north along stage road to Keeler, thence north along Carson and Colorado Railway, and also upon a bench mark at Caliente. The bench marks at Mohave and Caliente are on a precise-level line of 1902, and the heights now accepted are derived by an adjustment of this line made in January, 1907, taking into account rod error discovered upon rerunning, and precise leveling of 1906 from San Diego to Mohave, the new value at Mohave being 2 feet higher than that formerly accepted.

The leveling along the Kern Valley is the result of a single primary line run in 1905 by Mr. C. H. Semper, levelman, corrected for rod error by 0.0004 foot per vertical foot decreasing differences and bearing no other adjustment except to spur west from mouth of Coyote Creek to Hackett trail; Kaweah quadrangle, on account of a remaining closure of +1.8 feet and to the section north from Coyote Creek to Mount Whitney on account of a closure of -1.5 feet on the mean results of Farmer's and Shannon's primary lines from Mount Whitney station."

The other leveling on Olancha quadrangle, from Olancha north, was done in 1905 by Mr. L. F. Biggs, levelman, and that on Kernville quadrangle east from Isabella to Walkers Pass was done in 1906 by Mr. Biggs. The work was all done under the direction of Mr. R. B. Marshall, geographer.

The standard bench marks are stamped with the year and figures of elevation as determined when the line was run, which are mostly incorrect.

"The bench marks of Semper's line falling upon other quadrangles are elsewhere inserted as follows: Caliente (p. 104), Greenhorn (p. 103), Kaweah (p. 107), and Mount Whitney (p. 99).

OLANCHA QUADRANGLE.

OLANCHA, NORTH ALONG ROAD ON WEST SIDE OF OWENS LAKE, TO POINT 8 MILES SOUTH OF LONE PINE.

	Feet.
Olancha, in front of post-office; iron post stamped "F 31"-----	3, 649. 391
Olancha, 4 miles north of, top of hill 20 feet west of road, granite bowllder; aluminum tablet stamped "3644 B"-----	3, 642. 661
Cottonwood, 1 mile south of, 40 feet east of road, granite bowllder; aluminum tablet stamped "3678 B"-----	3, 676. 092
Lone Pine, 14 miles south of, 2 miles north of Cottonwood, top of hill, 40 feet west of road, in rock; aluminum tablet stamped "3750 B"-----	3, 748. 490
Lone Pine, 11 miles south of, 50 feet east of road, granite bowllder; aluminum tablet stamped "3691 B"-----	3, 689. 402
Lone Pine, 8 miles south of, 50 feet west of road at top of hill, granite bowllder; aluminum tablet stamped "3691 B"-----	3, 689. 580

ROCK CREEK, SOUTH ALONG KERN RIVER, TO COYOTE CREEK.*

Rock Creek, 100 feet south of, at top of bank of creek, west margin of trail, large rock; aluminum tablet stamped "6966 G 1905 5S"-----	6, 969. 098
Big Arroyo, 125 feet south of, 10 feet west of trail, 15 feet west of 4-foot cedar tree, large rock; aluminum tablet stamped "6662 G 1905 4 S"-----	6, 664. 410
Kern River, junction of trail down Coyote Creek with trail along Kern River, 60 feet south of Coyote Creek, west face of large gran- ite rock; aluminum tablet stamped "6456 G 1905 3 S"-----	6, 458. 117

COYOTE CREEK, SOUTH ALONG KERN RIVER, TO TROUT MEADOW; THENCE WEST ALONG JORDAN TRAIL TO LLOYD; THENCE VIA LOWER PEPPERMINT MEADOWS AND SUCKER FLAT, TO DRY MEADOWS.

Kern Lake, surface of water, August, 1905-----	6, 232. 7
Coyote Creek, 5.3 miles south of, 100 feet north of foot of hill leading up to Trout Meadow, 600 feet south of stone wall fence across trail, in rock ledge; aluminum tablet stamped "5786 G 1905 1 S"-----	5, 788. 933
Trout Meadow, at junction of trail to Kern Flat and trail to Dry Meadows, 275 feet north of McIntyre's cabin, 25 feet east of trail, west face of large rock; aluminum tablet stamped "6119 G 1905 2 S"-----	6, 121. 123
Little Kern River, 2.8 miles south of, 750 feet south of summit of mountain, 20 feet west of trail, leading down to Lloyds Meadow, in face of large rock; aluminum tablet stamped "6839 G 1905"-----	6, 841. 084
Lloyds Meadow, at Soda Spring, top of rock over Soda Water Flow; aluminum tablet stamped "5527 G 1905 4 S"-----	5, 529. 571
Lower Peppermint Meadow, southeast end of trail which enters small dry canyon and dense scrub oak, 15 feet west of trail, face of large rock; aluminum tablet stamped "5196 G 1905 5 S"-----	5, 198. 642
Dry Meadows, at south end of, 20 feet east of trail leading to Mat Flynn Canyon, 160 feet north of trail crossing Dry Meadow Creek, west face of very large granite rock; aluminum tablet stamped "4341. G 1905 6 S"-----	4, 344. 208

* Line crosses Kern River at south end of Upper Funston.

KERN RIVER, WEST VIA COYOTE AND RIFLES CREEKS, TO GREAT WESTERN DIVIDE.

Feet.

Great Western Divide, at summit, trail leading south, top of large rock; aluminum tablet stamped "10033 G 1905 2 S"-----10, 033. 664

KERNVILLE QUADRANGLE.

DRY MEADOW, SOUTH VIA ANGEL CAMP AND KERN RIVER, TO FAIRVIEW; THENCE ALONG TRAIL AND HIGHWAY FOLLOWING KERN RIVER, TO HAVILAH.

Kern River, junction of second Dry Meadow Creek with Kern River, 230 feet north of junction, in north wall of dry creek; aluminum tablet stamped "3765 G 1905 7 S"----- 3, 768. 028

Fairview, 150 feet directly east of Fairview Camp, 40 feet east of top of river bank, top of large granite boulder; aluminum tablet stamped "3516 G 1905 S S"----- 3, 519. 659

Kern River, 3 miles south of, 0.5 mile north of old corral, 25 feet east of trail, northwest face of large rock, 8 by 8 by 7 feet; aluminum tablet stamped "3122 G 1905 9 S"----- 3, 126. 051

Kernville, 6.3 miles north of, at Chico ranch, 85 feet south of south margin of house, 30 feet west of fence, 15 feet north of ditch, north face of large rock; aluminum tablet stamped "2767 G 1905 10 S"----- 2, 771. 192

Kernville, 3.1 miles north of, 960 feet south of Frank Apalatea's ranch, on west margin of road, 15 feet west of fence line, 55 feet north of fence corner, top of rock; aluminum tablet stamped "2631 G 1905 11 S"----- 2, 634. 929

Kernville, southeast corner of A. Brown & Co.'s store; aluminum tablet stamped "2565 G 1905 12 S"----- 2, 569. 015

Hot Springs, 1.9 miles south of, Kern River Flume, north end of concrete bent foundation east margin of road; aluminum tablet stamped "2487 G. 1905 14 S"----- 2, 491. 264

ISABELLA, EAST VIA ONYX, TO WALKER PASS.

Isabella, on road to Death Valley, 105 feet northeast of northeast corner of Methodist Church, 8 feet north of road, top of large rock; aluminum tablet stamped "G 1905 13 2521" (Semper's)----- 2, 525. 326

Isabella, 3 miles east of, sec. 22, T. 26 S., R. 33 E., 20 feet south of road at rocky point, slate ledge; aluminum tablet stamped "B. B. 1906 1 2554"----- 2, 555. 587

Isabella, 7 miles east of, sec. 20, T. 26 S., R. 34 E., 2 feet north of fence south of road, 1,000 feet east of cottonwood trees, granite rock, flush with ground; aluminum tablet stamped "B. B. 2 2617"----- 2, 618. 291

Isabella, 9 miles east of, sec. 22, T. 26 S., R. 34 E., 1.2 miles west of Weldon, 250 feet north of cemetery, 10 feet north of road, granite bowler; aluminum tablet stamped "B. B. 1906 3 2635"----- 2, 637. 024

Weldon, 2.6 miles east of, sec. 18, T. 26 S., R. 35 E., 10 feet east of road, in saddle west of rocky point, in granite boulder; aluminum tablet stamped "B. B. 1906 4 2686"----- 2, 688. 367

Onyx, 0.8 mile east of, sec. 4, T. 26 S., R. 35 E., 100 feet east of northeast corner of field, 20 feet south of road, granite rock; aluminum tablet stamped "B. B. 1906 5 2746"----- 2, 747. 971

Onyx, 7 miles east of, sec. 30, T. 25 S., R. 36 E., opposite Power's house, 20 feet south of road, in granite rock; aluminum tablet stamped "13 B 1906 6 2893"----- 2, 895. 527

	Feet.
Onyx, 9.2 miles east of, near quarter corner east side of sec. 29, T. 25 S., R. 36 E., 10 feet south of road, granite boulder; aluminum tablet stamped "B. B. 1906 7 3145"-----	3, 147. 096
Onyx, 12 miles east of, sec. 23, T. 25 S., R. 36 E., 0.5 mile north of canebrake, on grade 20 feet west of road in canyon, granite rock; aluminum tablet stamped "B. B. 1906 8 3745"-----	3, 746. 956
Onyx, 15 miles east of, near southeast corner sec. 36, T. 25 S., R. 36 E., east side of creek, 20 feet east of forks of road, granite rock; aluminum tablet stamped "B. B. 1906 9 4327"-----	4, 329. 372
Walker Pass, summit of, sec. 17, T. 26 S., R. 37 E., 18 miles east of Onyx, 15 feet east of road, granite rock; aluminum tablet stamped "B. B. 1906 10 5245"-----	5, 248. 321

BISHOP, LONG VALLEY, MOUNT GODDARD, AND MOUNT WHITNEY QUADRANGLES.

INYO, MONO, AND TULARE COUNTIES.

The elevations in the following list are based upon precise leveling by R. A. Farmer, in 1905, corrected to accord with an elevation at Mohave determined by an adjustment made in January, 1907. Additional elevations on Bishop and Mount Whitney quadrangles on precise lines, Mohave to Laws and Alvord to Oasis are given in another list, pages 11-12.

The leveling was done in 1905 under Mr. R. B. Marshall, geographer, mostly by Mr. L. F. Biggs, levelman. The work on Mount Whitney quadrangle includes a double line from Mount Whitney station west to summit of Mount Whitney run by Messrs. R. A. Farmer, topographer, and M. D. Shannon, levelman, and a single line thence to and down the Kern River run by Mr. C. H. Semper, levelman. The work on Long Valley quadrangle includes work of 1898 by Mr. C. R. Smith, levelman.

MOUNT WHITNEY QUADRANGLE.

MOUNT WHITNEY STATION, WEST ALONG WAGON ROAD AND TRAIL TO SUMMIT OF MOUNT WHITNEY.

	Feet.
Mount Whitney station, southeast corner of, spike in base of telegraph pole. (This from precise line from Keeler to Law)-----	3, 689. 754
Lone Pine, in front of post-office; iron post stamped "3728 B 1905"-----	3, 726. 617
Stone House, 200 feet south of, southwest of creek, granite boulder, 20 by 8 by 7 feet, 10 feet south of road; aluminum tablet stamped "4519 B 1905"-----	4, 518. 188
Lone Pine Creek canyon, mouth of, 400 feet east of falls, south of trail, in face of rock 20 by 10 by 6 feet; aluminum tablet stamped "6670 B 1905"-----	6, 668. 877
Hunters Camp ground, 20 feet south of trail, at bottom of steep pitch to the lakes, rock 10 by 6 feet and 5 feet out of ground; aluminum tablet stamped "8373 B 1905"-----	8, 371. 495
Summit of divide of Sierra Nevada Mountains where Lone Pine trail crosses, 20 feet north and west of trail, in granite wall; aluminium tablet stamped "13337 B 1905"-----	13, 335. 095

Feet.

B. M. No. 35 by Semper, Mount Whitney, on south slope of junction of Lone Pine and Crabtree creeks trail; rock on top, marked "13766"-----	13,766.729
Mount Whitney, highest point of summit, in large rock 6.5 feet south and 5 feet west of center of monument; aluminum tablet one-half inch thick, 4.5 inches wide and 7 inches long, engraved as follows: "U. S. Geological Survey, Charles D. Walcott, Director, Latitude 36° 44' 44", Longitude 118° 17' 29", Elevation above sea, 14,501, 1905"-----	14,500.737

MOUNT WHITNEY, WEST ALONG TRAIL, TO CRABTREE MEADOW; THENCE NORTHWEST TO KERN RIVER; THENCE SOUTH DOWN KERN RIVER TO ROCK CREEK.

Crabtree Meadow, at junction of trail to Mount Whitney, Kern River, and Whitney Creek, top of very large rock; aluminum tablet stamped "10330 G 1905 7 S"-----	10,332.569
East Fork of Kern River, 2.4 miles north of, on cut-off trail, 30 feet northeast of crossing of small creek, south margin of trail, a north face of large boulder in small meadow; aluminum tablet stamped "9837 1905 6 S"-----	9,838.983

LONE PINE, SOUTH ALONG ROAD 8 MILES.

Lone Pine, in front of post-office; iron post stamped "3727 B"-----	3,726.617
Lone Pine, 5 miles south of, 100 feet south of gulch, 20 feet west of road; iron post stamped "3711 B"-----	3,709.849

LONE PINE, NORTH ALONG ROAD, TO INDEPENDENCE; THENCE EAST TO CITRUS.

Lone Pine, 4 miles north of, 60 feet east of road, granite boulder; aluminum tablet stamped "B"-----	3,723.462
Lone Pine, 7 miles north of, 20 feet east of road; iron post stamped "B"-----	3,811.899
Independence, 5.5 miles south of, 800 feet north of Shepherd's house, 50 feet west of road, in boulder; aluminum tablet stamped "3873 B"-----	3,871.899
Independence, 2 miles south of, top of hill 100 feet west of road, in boulder; aluminum tablet stamped "B"-----	3,941.878
Citrus, in front of station; iron post stamped "F 10"-----	3,766.400

INDEPENDENCE, NORTH ALONG ROAD, TO ABERDEEN.

Independence, in west wall of court-house; aluminum tablet stamped "B"-----	3,924.790
Independence, 4.5 miles north of, 15 feet west of road, 400 feet south of house, granite boulder; aluminum tablet stamped "3891 B"-----	3,889.696
Independence, 7.5 miles north of, 20 feet west of road; iron post stamped "3868 B"-----	3,867.352
Independence, 10.5 miles north of, 60 feet west of road; 500 feet north of stream crossing, 0.5 mile west of Eaton's house, in volcanic rock; aluminum tablet stamped "3933 B"-----	3,931.947
Aberdeen, 2.8 miles southwest of, 2 miles north of Eaton's house, east side of road, volcanic rock; aluminum tablet stamped "3864 B"-----	3,862.978

BISHOP QUADRANGLE.

NEAR ABERDEEN, NORTH ALONG ROAD, TO BIG PINE; THENCE EAST TO ALVORD.

	Feet.
Big Pine, 12.3 miles south of, 1 mile north of Bower's house, 20 feet west of road, volcanic rock; aluminum tablet stamped "3870 B"-----	3,868.581
Big Pine, 7.8 miles south of, under window in front of Fish Spring schoolhouse; iron post stamped "3936 B"-----	3,934.648
Big Pine, 6.3 miles south of, 100 feet west of south end of pond, volcanic rock; aluminum tablet stamped "3888 B"-----	3,887.659
Big Pine, 3.3 miles south of, 500 feet northwest of Rheinackle's house, 150 feet west of road, volcanic rock; bronze tablet stamped "3934 B"-----	3,932.802
Big Pine, 4 feet north of schoolhouse; iron post stamped "4003 B"---	4,002.108
Alvord, in front of station; iron post stamped "F 19"-----	3,930.130

BIG PINE, NORTH ALONG ROAD, TO BISHOP; THENCE EAST TO LAWS.

Big Pine, 2 miles north by 2 miles west of, west side of road at cliff of rocks, bowlder; aluminum tablet stamped "3982 B"-----	3,980.749
Big Pine, 6.5 miles northwest of, near quarter corner east side of sec. 36, T. 8 S., R. 33 E., 60 feet west of road, bowlder; aluminum tablet stamped "4037 B"-----	4,036.016
Valley schoolhouse, 3.5 miles north of, common corner of secs. 32 and 33, T. 7 S., and secs. 4 and 5, T. 8 S., R. 34 E., 0.25 mile south of Butler schoolhouse, 600 feet west of road; iron post stamped "4046"-----	4,045.236
Bishop, 2 miles south by 1 mile west of, 300 feet west of canal, at stone post; iron post stamped "4319 B"-----	4,318.783
Bishop, Fred. H. Bulpitt's store, under front window, in stone wall; aluminum tablet stamped "4148 B"-----	4,147.311
Laws, 100 feet east of station; iron post stamped "25 F"-----	4,114.583

MOUNT GODDARD QUADRANGLE.^a

WEST AND NORTHWEST OF LAWS.

Laws, 10.7 miles west of, 1,000 feet west of Fred Meger's house, west side of road, granite bowlder; aluminum tablet stamped "B 4422 1905 B 2"-----	4,420.872
Laws, 14 miles northwest of, 2 miles south of Will Robert's ranch, 60 feet west of road, volcanic rock; aluminum tablet stamped "B 1905 B 3 4513"-----	4,511.245

LONG VALLEY QUADRANGLE.^aNORTHWEST OF LAWS TO DEADMAN HILL.^b

Laws, 17 miles northwest of, 1 mile north of Will Robert's house, near Mono-Inyo County line, east side of road, volcanic rock; aluminum tablet stamped "B 1905 14 4698 B"-----	4,696.499
---	-----------

^a The elevations following on Mount Goddard and Long Valley quadrangles are by a single primary line, unadjusted, making a closure about 6 feet high on elevations brought from Yosemite based upon the same adjusted datum.

^b For closure see Mount Lyell quadrangle, p. 118.

	Feet.
Laws, 21 miles northwest of, summit of Sherwin hill, 60 feet west of road, volcanic boulder; aluminum tablet stamped "B 1905 B 6432" -----	6, 430. 273
Laws, 24.7 miles northwest of, south end of meadow, 15 feet east of road, 30 feet west of Rock Creek, granite boulder; aluminum tablet stamped "B 1905 6815 B 16" -----	6, 813. 667
Laws, 28.5 miles northwest of, 100 feet north of Crookes Creek, north side of road, 200 feet northeast of forks of road, in volcanic rock; aluminum tablet stamped "B 1905 B 7 6786" -----	6, 764. 867
Laws, 30 miles northwest of, 200 feet east of proposed dam site, north side of river, 20 feet from water, large boulder; aluminum tablet stamped "B 1905 B 8 6668" -----	6, 668. 274
Laws, 34 miles northwest of, 1 mile north of Eaton's house, north side of road, in boulder; aluminum tablet stamped "B 1905 9 6834" -----	6, 835. 123
Laws, 37.5 miles northwest of, sec. 13, T. 4 S., R. 24 E., 300 feet north of Summer's gate, 200 feet north of road, large boulder; aluminum tablet stamped "B 1905 10 7066" -----	7, 066. 379
Laws, 41.5 miles northwest of, 1 mile north of Summer's house, 300 feet south of Hot Creek, 100 feet south of road, at point of volcanic boulders; aluminum tablet stamped "B 1905 B 11 7196" -----	7, 196. 987
Laws, 45 miles northwest of, 2 miles northwest of Casa Diablo, 60 feet, west of road, boulder; aluminum tablet stamped "B 1905 12 7571" -----	7, 581. 517
Laws, 48.5 miles northwest of, 5.5 miles northwest of Casa Diablo, summit between Hot and Deadman creeks, 200 feet north of road, volcanic rock; aluminum tablet stamped "B 1905 13 7446" -----	7, 657. 043
Laws, 52 miles northwest of, 0.75 mile north of Deadman Creek, west side of road about halfway up Deadman Hill, large boulder; aluminum tablet stamped "B 1905 B 14 7723" -----	7, 733. 896
RUSH CREEK (MONO LAKE), SOUTHEAST TO MONO MILLS; THENCE SOUTHWEST TO CRATER RIDGE. ^a	
Mono Mills road, about 3 miles southeast of where road leaves lake shore, 15 feet to right of road and about 200 feet east of foot of spur of Crater Ridge; iron post stamped "6899 O" -----	6, 910. 057
Mono Mills, in northwest corner post of sawmill; aluminum tablet stamped "7335 O" -----	7, 346. 304
Bodie-Benton wagon road, on summit between Mono Lake and Owens River drainage, 20 feet east of road; iron post stamped "7987 O" -----	7, 998. 104

BAKERSFIELD, CALIENTE, FAMOSO, AND GREENHORN 30' QUADRANGLES; BAKERSFIELD SPECIAL AND OIL CENTER SPECIAL QUADRANGLES.

KERN AND TULARE COUNTIES.

The elevations in the following list are based upon a line of precise levels from Benicia along the Southern Pacific Railroad (which traverses all these quadrangles excepting Greenhorn and Oil Center Special) as adjusted in January, 1907.

^a Elevations determined from levels run in 1898 by Mr. C. R. Smith, corrected to agree with line from Laws, 6,355. feet greater than as determined from Merced.

Leveling was done on all of the above quadrangles in 1903 by Mr. L. D. Ryus, levelman, and on all except Oil Center Special in 1904 by Mr. S. N. Stoner. Other work was done on Caliente and Greenhorn quadrangles in 1905 by Mr. C. H. Semper, levelman.

The work on Oil Center Special was done under the direction of Mr. A. B. Searle, topographer. The remainder was done under Mr. R. B. Marshall, geographer, in 1903 and 1905, Mr. S. N. Stoner having charge in 1904.

Each of the special maps covers portions of certain of the thirty-minute quadrangles above named, and the bench marks of this list which fall upon them are not separately specified.

BAKERSFIELD 30' QUADRANGLE.

KERN, ALONG SUNSET BRANCH OF THE SOUTHERN PACIFIC RAILROAD, RUNNING SOUTHWEST, WEST, AND NORTHWEST, TO SEC. 36, T. 29 S., R. 25 E.

	Feet.
Kern, at station; iron post stamped "B"-----	421.877
T. 30 S., R. 28 E., sec. 6, southeast corner of, on west side of Union avenue road at crossing, north side of railroad right of way; iron post stamped "392 B"-----	392.278
T. 30 S., R. 27 E., sec. 15, southeast corner of, 1.68 miles west of Wibble Orchard, at west side of wagon road, at north edge of railroad right of way; iron post stamped "369 B"-----	369.209
Gosford, in front of station; top of rail-----	362.0
T. 30 S., R. 27 E., sec. 20, northwest corner of, 1.7 miles west of Gosford, at south side of road, opposite crossing to ranch house; iron post stamped "358 B"-----	358.551
T. 30 S., R. 26 E., sec. 15, near quarter corner on south side of, 1,200 feet west of milepost 328, north edge of right of way; iron post stamped "346 B"-----	346.813
T. 30 S., R. 26 E., sec. 7, 1.5 miles west of Stevens, 200 feet south of track, at corner of fence, 500 feet west of milepost 331, 20 feet east of gate; iron post stamped "337 B"-----	337.748
T. 29 S., R. 25 E., sec. 36, south of northwest corner of, on east side of county road, north edge of railroad right of way; iron post stamped "327 B"-----	327.610

SUNSET BRANCH, NORTH ALONG WAGON ROAD, TO RIO BRAVO SCHOOL; THENCE EAST TO SANTA FE RAILWAY.

T. 29 S., R. 25 E., sec. 11, near quarter corner on east side of, Rio Bravo schoolhouse, at southeast corner of yard; iron post stamped "332 B"-----	332.278
T. 28 S., R. 26 E., sec. 32, quarter corner on south side of, opposite north corner common to secs. 4 and 5, T. 29 S., north side of wagon road, at west edge of railroad right of way; iron post stamped "339 B"-----	339.643

SOUTHEASTERLY ALONG SANTA FE RAILROAD TO KERN.

T. 29 S., R. 26 E., sec. 14, near southeast corner, 0.25 mile east of Rosedale, 1 mile north of Rosedale post-office, west side of county road, north edge of railroad right of way; iron post stamped "360 B"---	360.612
---	---------

T. 29 S., R. 27 E., sec. 29, quarter corner on east side of, 4 miles west of Bakersfield, west side of public road, north edge of railroad right of way; iron post stamped "387 B"----- 387.366
 Feet.

ONE MILE EAST OF OIL TRIANGULATION STATION, SOUTHWEST ALONG ROAD 3 MILES; THENCE SOUTHWEST ACROSS COUNTRY TO 1 MILE SOUTHEAST OF JEWETTA.

T. 28 S., R. 27 E., sec. 25, southwest quarter of, Standard Oil Company's storage reservoirs, 1.5 miles north of, east bank of ravine, west side of Bakersfield and Poso Creek road; iron post stamped "730"----- 730.355

OIL TRIANGULATION STATION, SOUTHWEST ACROSS COUNTRY TO SEC. 14, T. 28 N., R. 27 E.; THENCE SOUTH TO NEAR JEWETTA.

T. 28 N., R. 27 E., at center of, sec. 14, 2 miles southwest of Oil triangulation station; iron post stamped "864"----- 864.260

FAMOSO 30' QUADRANGLE.

POSO CREEK STAGE ROAD STATION, WEST DOWN POSO CREEK TO SEC. 29, T. 27 S., R. 27 E.; THENCE SOUTH TO NEAR JEWETTA.

T. 27 S., R. 28 E., sec. 31, in Poso Creek Valley, 2.8 miles west of stage station, 30 feet south of road, at bend of road; iron post stamped "593 B"----- 593.372

T. 27 S., R. 27 E., sec. 24, 8 miles north of Jewetta, mouth of drain, on end of spur, north side of road at point where road leaves Poso Creek bottom; iron post stamped "545 B"----- 545.397

GRANITE CANYON, NORTHWEST ALONG TRAIL AND RIDGE, TO MOUNT POSO (POSO TRIANGULATION STATION); THENCE SOUTH TO POSO CREEK.

Poso triangulation station; iron post stamped "1214 B"----- 1,214.865

GREENHORN 30' QUADRANGLE.

AT OIL TRIANGULATION STATION.

Oil triangulation station, sec. 7, T. 28 S., R. 28 E.; tablet marking station, stamped "1205"----- 1,205.588

SEC. 18, T. 28 S., R. 28 E., NORTH ALONG HIGHWAY VIA MON CANYON AND GRANITE CANYON, TO POINT 2.4 MILES NORTH OF POSO CREEK STAGE STATION.

Poso Creek stage station, 0.2 mile east of, sec. 4, T. 28 S., R. 28 E., 300 feet east of water trough, 30 feet south of road at point where road enters creek bottom, 200 feet west of head of old canal; iron post stamped "633 B"----- 633.176

T. 27 S., R. 28 E., sec. 22, at fork of Granite Canyon, 2.4 miles north of Poso Creek, 20 feet west of bank; iron post stamped "884 B"----- 884.126

AT HAVILAH.

Havilah, Havilah Commercial Company building, north end, front face; aluminum tablet stamped "3160 G 1905 15 S"----- 3,164.223

CALIENTE 30' QUADRANGLE.

HAVILAH, SOUTHWEST ALONG HIGHWAY FOLLOWING KERN RIVER, TO CALIENTE.

	Feet.
Havilah, 4.6 miles south of, 2,400 feet south of summit of mountain, on east margin of road, in small canyon, in large granite rock, west face; aluminum tablet stamped "4072 G 1905 16 S"-----	4, 074. 983
Walkers Basin, 0.8 mile north of, W. Rankin's ranch house, on east side of road, 10 feet west of fence, west face of large rock; aluminum tablet stamped "3335 G 1905 17 S"-----	3, 335. 629
Walkers Basin, 5.5 miles south of, 0.6 mile south of Oak Flat, 100 feet west of loop in road, on south edge of road, top of flat rock; aluminum tablet stamped "2900 G 1905 18 S"-----	2, 903. 822
Caliente, 3 miles northeast of, at fork of road to Pinto and Rankin camps, 10 feet west of road, large rock; aluminum tablet stamped "1534 G 1905 19 S"-----	1, 538. 246
Caliente, 65 feet south of milepost 335, 10 feet east of track; iron post ^a stamped "1201 B"-----	1, 202. 070

KERN, ALONG HIGHWAY NORTH VIA OIL CITY STATION, TO OIL TRIANGULATION STATION.

T. 29 S., R. 28 E., sec. 16, 2.5 miles north of Kern, 100 feet south of edge of mesa, at top of grade of road from Kern to Oil City; iron post stamped "684 B"-----	684. 065
T. 28 S., R. 28 E., sec. 34, at quarter corner on south side of, at corner of fence, west side of road; iron post stamped "522 B"-----	523. 492
T. 28 S., R. 28 E., sec. 21, on ridge about 1 mile north of water tank; iron post stamped "976 B"-----	976. 927
Oil triangulation station, 1 mile southeast of, sec. 18, T. 28 S., R. 28 E., on round knob east of Mon Canyon road; iron post stamped "1133"-----	1, 132. 894

OIL CITY, NORTHWEST ALONG RAILROAD AND HIGHWAY, TO SEC. 24, T. 28 S., R. 27 E.

Oil Center schoolhouse, in southeast corner of yard; iron post stamped "634 B"-----	634. 123
T. 28 S., R. 28 E., sec. 30, near southeast corner, 1 mile north of Peerless oil claim, on road on ridge north of Stirling oil claim, 100 feet north of house, south side of road; iron post stamped "768"-----	768. 354

POINT 2.5 MILES NORTH OF KERN, SOUTHEAST ALONG SECOND-CLASS ROAD AND ACROSS COUNTRY, TO MILEPOST 320 ON SOUTHERN PACIFIC RAILROAD.

T. 29 S., R. 29 E., sec. 23, 3.5 feet southwest of northeast corner; iron post stamped "829 B"-----	829. 283
Kern, 5 miles east of, sec. 30, T. 29 S., R. 29 E., 2.5 miles north of Southern Pacific Railroad, 20 feet south of road, at point where drain enters flat, east side of mouth of wash; iron post stamped "569 B"-----	569. 471

KAWEAH AND VISALIA QUADRANGLES.

TULARE COUNTY.

The elevations in the following list are based on an iron post 1.4 miles south of Goshen on east side of Southern Pacific Railroad at margin of highway opposite milepost 242, stamped "286 B 1902" established by precise levels run from Benicia, by Mr. C. H. Semper.

^a Elevation adjusted January, 1907.

The leveling was mostly done in 1902 under the direction of Mr. E. C. Barnard, topographer, by Mr. W. V. Hardy, levelman. Additional work was done on both Kaweah and Visalia quadrangles, under Mr. R. B. Marshall, geographer, partly in 1904 and partly in 1905, by Mr. R. A. Farmer, topographer, and on Kaweah quadrangle alone in 1905 by Messrs. M. D. Shannon and C. H. Semper, levelmen.

VISALIA QUADRANGLE.

GOSHEN, EAST VIA SOUTHERN PACIFIC RAILROAD, TO VISALIA.

	Feet.
Goshen, 0.4 mile south of, east side of track, opposite milepost 241; spike in telegraph pole-----	282. 66
Goshen, 3.62 miles east of, about 600 feet south of G. D. Smith's ranch house, 60 feet southeast of crossing, 30 feet south of track, north of road, 3 feet west of telegraph pole; iron post stamped "307 G"-----	307. 046
Visalia, court-house, east entrance, at foot of steps; center of the letter "G" in the name "Gay" on cement sidewalk-----	330. 53
Visalia court-house, at east side of steps at south entrance, in granite baluster; aluminum tablet stamped "334 G"-----	333. 883

VISALIA, EAST ALONG COUNTY ROAD, TO LEMONCOVE.

Mineral King ranch house, 500 feet west of, northeast angle of road junction near corner fence post; iron post stamped "362 G"-----	361. 850
Lemoncove, 8.87 miles west of, 60 feet southwest of crossing, near junction of railroad fence with wagon fence; iron post stamped "388 G"-----	388. 028
Lemoncove, 4.76 miles west of, 50 feet southwest of Tom Hushback's ranch house, northeast angle of road junction, 1.5 feet southeast of southwest corner of yard; iron post stamped "420 G"-----	419. 845
Lemoncove school, 2 feet east of, midway between north and south entrances; iron post stamped "510 G"-----	510. 311

PORTERSVILLE, NORTHWEST ALONG HIGHWAY AND SOUTHERN PACIFIC RAILROAD, TO POINT EAST OF VISALIA.

Portersville school, south side of, 6 inches east of entrance, 12 inches above porch floor; aluminum tablet stamped "458 G"-----	458. 104
Sam Bend's saloon, 1.15 miles south of, 70 feet southwest of road intersection, 30 inches east of telephone pole; iron post stamped "396 G"-----	396. 431
Lindsay school, south side of, 24 inches east of entrance, 18 inches above ground; aluminum tablet stamped "383 G"-----	382. 677
Exeter, 3.25 miles south of, 90 feet north of crossing, 30 inches east of railroad fence, 36 inches southeast of electric power line pole; iron post stamped "353 G"-----	352. 697
Exeter school, north of steps at northwest entrance, in west face of granite baluster, 24 inches above ground; aluminum tablet stamped "391 G"-----	390. 575
Exeter, in front of station; top of east rail-----	386. 5

CROSSROADS 3 MILES WEST OF LEMONCOVE, SOUTHEAST VIA WAGON ROAD, TO YOKOHL SCHOOL.

James Hamilton's ranch house, 1.21 miles south of, northwest angle of road junction, near corner of fence; iron post stamped "499 G"-----	499. 176
---	----------

PORTERSVILLE, WEST ALONG HIGHWAY, TO TIPTON.

	Feet.
Portersville, 1 mile south by 1.5 miles west of, south side of road, Percell ranch; iron post stamped "433"-----	432.986
Poplar, 2 miles east of, 4.5 miles west by 1 mile south of Portersville, at southeast corner of road crossing, 8 feet south of telephone pole; iron post stamped "396"-----	396.162
Tipton, 5 miles east of, 4 miles west of Poplar, northwest corner of pasture, southwest corner of road crossing; iron post stamped "328"-----	328.091

KAWEAH QUADRANGLE.

LEMONCOVE, EASTERLY ALONG COUNTY ROAD VIA THREE RIVERS, TO MINERAL KING; THENCE SOUTHEAST ALONG TRAIL OVER FAREWELL GAP, TO WET MEADOWS.

T. 18 S., R. 28 E., sec. 4, 60 feet northeast of Horse Creek bridge, south side of road, 3 feet southwest of oak tree at southwest end of gate on road up Horse Creek; iron post stamped "610 G"-----	609.940
T. 17 S., R. 82 E., sec. 24, 1.42 miles north of Three Rivers post-office, junction of Mineral King and Giant Forest wagon roads, 155 feet southeast of Kaweah River bridge, southeast of junction, granite bed rock, 24 inches above level of road; bronze tablet stamped "816 G"-----	815.701
Three Rivers post-office, 5 miles northeast of, Mount Whitney Company power house, 40 feet east of, north of road, in side of large granite boulder, 30 inches above level of road; bronze tablet stamped "1145 G"-----	1,145.355
Oak Grove telephone station, 120 feet north of, south of road, 30 inches east of gate; iron post stamped "2704 G"-----	2,704.579
Tranger's camp, 100 feet west of stream, north of road, in granite bed rock, 24 inches above level of road; bronze tablet stamped "4595 G"-----	4,594.853
Atwells Mills, 125 feet north of, 45 feet north of skid road, redwood stump 15 feet in diameter; 10-penny wire nail in root-----	6,452.214
Mineral King, 85 feet south of hotel, granite boulder 120 by 180 inches by 30 inches high; bronze tablet stamped "7832 G"-----	7,831.686
Farewell Gap, quartz ledge cropping 30 inches long by 12 inches wide and 8 inches high; bronze tablet stamped "10588 G"-----	10,588.555
Wet Meadows, 120 feet south of junction of trail down Little Kern River with trail to Hacketts Meadow and Quinn's horse camp, 40 feet east of river, 20 feet above stream at trail crossing, west side of trail down river, granite boulder, 30 by 36 by 12 inches; bronze tablet stamped "7924 G"-----	7,923.241

WET MEADOWS, ON LITTLE KERN RIVER, SOUTHWEST ALONG TRAIL VIA ENTERPRISE, TO SPRINGVILLE (DAUNT POST-OFFICE).

Quinn's horse camp, on summit west of, 25 feet northwest of junction of trail to Hacketts Meadow, granite boulder 30 by 30 by 84 inches; bronze tablet stamped "9680 G"-----	9,679.275
Moses Mountain, at east foot of, at junction of trail down North Fork of Middle Fork of Tule River with trail to Enterprise Mill, about 300 feet east of river, 4 feet north of trail, granite boulder 36 by 48 inches and 24 inches high; bronze tablet stamped "6614 G"-----	6,612.749

	Feet.
Enterprise Mill, 0.19 mile east of, on summit 15 feet southeast of road, granite boulder, 48 by 96 inches and 24 inches high; bronze tablet stamped "6652 G"-----	6,651.033
Rancheria, 2.1 miles southeast of creek crossing, junction of road to Coburn dump, 4 feet west of road, 4 feet south of oak tree; iron post stamped "3202 G"-----	3,202.847
T. 20 S., R. 29 E., sec. 14, 2.7 miles south of Milo, 50 feet southwest of junction of road up North Tule River, granite boulder 48 by 144 inches and 18 inches high; bronze tablet stamped "1391 G"-----	1,391.073
Springville, sec. 2, T. 21 S., R. 29 E., north side of school, midway between east and west entrance; iron post stamped "1032 G"-----	1,032.305

SPRINGVILLE, SOUTHWEST ALONG COUNTY ROAD, TO PORTERVILLE.

T. 21 S., R. 29 E., northwest corner of sec. 16, west side of Orange school, midway between north and south entrances; iron post stamped "745 G"-----	745.311
T. 21 S., R. 29 E., west side of sec. 24, 20 feet west of Citrus school, 30 inches south of gate; iron post stamped "622 G"-----	621.896

YOKOHL SCHOOL, EAST UP YOKOHL VALLEY AND OVER GAP, TO MILO.

T. 19 S., R. 27 E., sec. 24, Yokohl school, 70 feet southwest of, 20 feet north of road, embedded granite boulder 36 by 72 inches and 12 inches high; bronze tablet stamped "636 G"-----	636.068
T. 19 S., R. 28 E., sec. 15, about 400 feet north of A. Carlson's ranch house, south of road, 30 inches east of gate; iron post stamped "991 G"-----	991.252
Blue Ridge, south end of, 15 feet north of road, summit on road, granite ledge; bronze tablet stamped "2675 G"-----	2,675.061

THREE RIVERS POST-OFFICE, SOUTH ALONG COUNTY ROAD TO CINNAMON SCHOOL (SINGLE SPUR LINE).

Cinnamon school, 50 feet northeast of, 15 feet northeast of road, in top of granite boulder 36 by 60 inches and 30 inches high; bronze tablet stamped "1496 G"-----	1,496.057
---	-----------

SPRINGVILLE, EAST ALONG ROAD TO ELSTER'S RANCH (SINGLE SPUR LINE).

Elster's ranch house, 300 feet west of, south of Middle Fork of Tule River, south of road, 10 feet southwest of gate, granite boulder 30 by 30 inches and 14 inches high; bronze tablet stamped "1206 G"-----	1,206.284
---	-----------

CITRUS SCHOOL, VIA COUNTY ROAD, TO FRAZIERS SCHOOL (SINGLE SPUR LINE).

T. 20 S., R. 28 E., sec. 32, Fraziers school, 18 inches east of, 18 inches south of steps at north entrance; iron post stamped "585 G"-----	585.419
PORTERSVILLE, EAST ALONG COUNTY ROAD, TO WORTH SCHOOL (SINGLE SPUR LINE).	
T. 22 S., R. 28 E., sec. 3, Worth school, 45 feet south of, 3 feet east of gate; iron post stamped "571 G"-----	570.515

WET MEADOWS, SOUTHEAST ALONG LITTLE KERN RIVER, NORTH UP SHOTGUN CREEK, SOUTHEAST ALONG POISON MEADOW TRAIL, TO GREAT WESTERN DIVIDE, CONNECTING WITH WORK ON OLANCHA QUADRANGLE.

Great Western Divide, in saddle of spur running west from about 0.25 mile south of Rifle Creek, 10 feet east of Poison Meadow trail, in granite rock; aluminum tablet stamped "9046 G 1905"-----	9,046.100
--	-----------

COALINGA AND HANFORD QUADRANGLES.

FRESNO AND KINGS COUNTIES.

The elevations in the following list depend upon a bench mark on the precise-level line from Benicia at a point 0.4 mile south of Goshen, opposite milepost 241, a spike in base of telegraph pole, the adjusted elevation of which is 282.661 feet above mean sea level. The line was run in both forward and backward directions and the mean taken.

The leveling was done by Mr. W. V. Hardy, levelman, in the spring of 1903.

GOSHEN TO ALCALDE.

HANFORD QUADRANGLE.

GOSHEN, WEST ALONG WAGON ROAD, TO LEMOORE; THENCE WEST ALONG SOUTHERN PACIFIC RAILROAD, TO BENCH MARK 4 MILES WEST OF LETHENT.

	Feet.
Goshen, 6.34 miles west of, 100 feet northwest of road crossing, 50 feet north of track, 2 feet east of corner of railroad fence; iron post stamped "251 G"-----	251.198
Hanford, 4.58 miles northeast of, northwest angle of road intersection; iron post stamped "255 G"-----	254.765
Hanford, King County Court-house, east side of south entrance, in granite balusters; aluminum tablet stamped "250 G"-----	250.385
Armona school, 180 feet northwest of south of gate, at northwest corner of yard; iron post stamped "237 G"-----	237.211
Lemoore, Union High School, north side of east entrance, in foundation wall, 1 foot above surface of ground; aluminum tablet stamped "223 G"-----	223.199
Lethent, 60 feet northwest of barn, south of track, 2.5 feet east of telegraph milepole 267; iron post stamped "219 G"-----	219.135
Lethent, 4 miles southwest of, 4 feet east of telegraph milepole 271, south of track; iron post stamped "250 G"-----	250.118

COALINGA QUADRANGLE.

BENCH MARK 4 MILES WEST OF LETHENT, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO ALCALDE.

Huron, 4.3 miles northeast of, 50 feet south of track, 3 feet east of telegraph milepole 276; iron post stamped "306 G"-----	306.166
Huron school, 2.5 feet south of entrance; iron post stamped "380 G"-----	380.231
Arroyo Posa Jhena, 0.99 mile southwest of, 50 feet south of track, 3 feet east of telegraph milepole 285; iron post stamped "455 G"-----	455.147
Ora, 3.98 miles east of, 50 feet south of track, 8 feet north of wagon road, 5 feet east of telegraph milepole 290; iron post stamped "569 G"-----	569.216
Ora, 2.13 miles east of, 50 feet south of track, 5 feet east of telegraph milepole 292; iron post stamped "606 G"-----	606.101
Ora, 2.5 feet west of telegraph pole marked with name of station, south of oil tanks, 50 feet south of tracks, 2 feet north of wire fence; iron post stamped "647 G"-----	647.187
Coalinga, southwest end of station; iron post stamped "671 G"-----	671.152

	Feet.
Coalinga, 1.73 miles southwest of, in mouth of Waltham Canyon, 800 feet north of ranch house, 50 feet south of track, 10 feet northwest of road junction; iron post stamped "716 G"-----	716. 110
Alcalde, 70 feet north of station, between station signboard posts; iron post stamped "852 G"-----	852. 214

DUNLAP, FRESNO, KAISER, AND TEHIPITE QUADRANGLES.

FRESNO, MADERA, AND TULARE COUNTIES.

The elevations in the following list are based upon the precise line along the Southern Pacific Railroad. The line Fresno to Madera is adjusted, but the remainder of this list is unadjusted on account of excessive discrepancy in joining work brought from Goshen with that from Fresno. The leveling on the Tehipite quadrangle and on lines from Three Springs and from Millwood to Dunlap on Dunlap quadrangle are based upon an adjusted elevation at Kaweah Bridge on Kaweah quadrangle, in turn based upon an adjusted height at Goshen. The leveling on the Fresno and Kaiser quadrangles and west of Dunlap on Dunlap quadrangle are based upon adjusted elevation at Fresno.

On account of discrepancy the line Kaweah Bridge via Cedar Grove to Three Springs was rerun throughout and in some sections a third running was made. A comparison of these runnings over great differences of elevation enabled rod corrections to be determined, and gross errors to be eliminated. The corrected mean values are used.

The leveling on Kaiser quadrangle and on line Fresno to Kaiser quadrangle was done by Mr. L. D. Ryus in 1901, and to this no rod correction has been applied and no adjustment made except between Fresno and Clovis; the remainder of leveling on Fresno quadrangle was done in 1902-3 by Mr. Ryus.

The first running on lines Snow Corral to Cedar Grove in 1902 and Kaweah Bridge to Cedar Grove in 1903, and the work on lines to Dunlap from Three Springs, Horse Corral, and Fresno in 1903 was done by Mr. Ryus. The rerunning Three Springs via Cedar Grove to Kaweah Bridge was done by Mr. R. A. Farmer, topographer, in 1904-5.

Rod corrections have been applied to the Ryus 1902-3 lines at rate of 0.0001 foot per vertical foot, decreasing differences; and to Farmer's 1904 line 0.0003 foot, increasing differences.

The list as it stands contains the following breaks, to be corrected when further connections have been obtained: At Snow Corral—from Kaweah=7,119.44 feet; from Fresno=7,115.76 feet. At Dunlap—from Three Springs=1,915.38 feet; from Horse Corral=1,915.47 feet; from Fresno=1,911.93 feet.

TEHIPITE QUADRANGLE.

KAWEAH BRIDGE, NORTHEAST VIA MARBLE FORK AND HORSE CORRAL, TO CEDAR GROVE.

	Feet.
T. 16 S., R. 28 E., sec. 26, 7 miles north of Kaweah Bridge, on point of hill on grade 2 miles north of Davis ranch, in top of 5 by 6 foot rock on east side of road; bronze tablet.....	1, 279. 07
Sequoia National Park, 2,100 feet south of Cedar Creek Camp, west side of road at point of hill, in granite ledge; bronze tablet.....	3, 789. 80
Sequoia National Park, 130 feet east of Marble Fork Bridge, east of road and Marble Fork of Kaweah River on Giant Forest road, 50 feet north of small bridge over stream, in granite ledge; bronze tablet.....	5, 161. 00
Sequoia National Park, at upper crossing of Marble Fork of Kaweah River, 200 feet south of Marble Fork, 25 feet west of trail, in granite rock; bronze tablet.....	6, 720. 24
T. 14 S., R. 30 E., "J. O." Pass about 2 miles north of Clover Creek, 15 feet east of trail, 10 feet from signboard tree, in rock; bronze tablet.....	9, 414. 97
Horse Corral Meadow, sec. 32, T. 13 S., R. 30 E., at fork of King River and Millwood and Giant Forest trails, at foot of mound, in top of granite rock; bronze tablet.....	7, 648. 90

CEDAR GROVE, NORTHWEST VIA TEHIPITE, CROWN VALLEY, AND SAMPLER COW CAMP, TO SNOW CORRAL MEADOWS.

Cedar Grove Hotel, 0.25 mile east of sec. 13, T. 13 S., R. 30 E., 250 feet north of trail, 600 feet north of bridge over South Fork of King River, in granite rock, 6 feet high; bronze tablet.....	4, 635. 02
Happy Gap or Red Saddle, sec. 30, T. 12 S., R. 30 E., summit of ridge between Middle Fork and South Fork of King River, in ledge of rock 40 feet south of trail; bronze tablet.....	9, 310. 83
T. 12 S., R. 29 E., sec. 11, Tehipite Valley, 1.3 miles south of Tehipite Dome, 200 feet north of ford, west bank of Middle Fork of King River, in large rock; bronze tablet.....	4, 085. 70
Crown Valley or Collins Meadow, sec. 30, T. 11 S., R. 29 E., at junction of Tunamah and Tehipite trails, 100 feet east of Rogers corral, at Crown Valley Camp, in granite rock, 4.5 feet high, 10 feet square; bronze tablet stamped "7879 F".....	7, 882. 69
Three Springs, 1.5 miles east of, sec. 16, T. 11 S., R. 28 E., south side of trail, 200 feet west of small meadow, at rocky point 2 miles west of creek, 700 feet east of summit of ridge, in granite ledge; bronze tablet.....	8, 274. 41
Cliff Camp, 1 mile northwest of, north line of, sec. 12, T. 11 S., R. 27 E., in granite ledge on west bank of North Fork of King River, 50 feet north of sheep bridge; tablet.....	6, 177. 98

THREE SPRINGS, SOUTH TO RODGERS RIDGE.

T. 12 S., R. 27 E., sec. 1, 5.5 miles southwest of Three Springs, 150 feet south of forks of trail on Rodgers Ridge, about 3.5 miles south of crossing of Raucheria Creek, in rock; bronze tablet.....	6, 844. 28
--	------------

HORSE CORRAL MEADOWS, WEST ALONG TRAIL VIA BIG MEADOW AND GENERAL GRANT PARK, TO
MILLWOOD.

	Feet.
Big Meadows, sec. 8, T. 14 S., R. 29 E., 125 feet south of road, between Ellis Camp and Open Meadow, at foot of rock mound; bronze tablet-----	7, 662. 74
Log Corral Meadow, sec. 4, T. 14 S., R. 28 E., 300 feet west of forks of General Grant Park and Happy Gap trails, 50 feet south of Happy Gap and Millwood trails, north side of road; in granite rock; bronze tablet-----	7, 229. 19

DUNLAP QUADRANGLE.

RODGERS RIDGE, SOUTHWEST TO DUNLAP.

Three Springs, 11.75 miles southwest of, between South and North forks of King River, at point where Rodgers trail from river reaches summit, 10 feet west of trail, in rock; bronze tablet-----	4, 672. 98
King River, crossing on Rodgers trail at Flume station No. 3, 130 feet north of river, 100 feet north of trail, in rock; bronze tablet stamped "1030"-----	1, 034. 03
Dunlap, 7 miles north of, 4.33 miles south of King River, 2 miles north of Akers (jr.) house, in saddle of ridge, 50 feet west of trail, in granite ledge; bronze tablet-----	3, 566. 23
Dunlap, 5 miles north of, summit of divide between Dunlap and White Deer Flat, southwest corner of pasture, 50 feet east of road, inside of fence; bronze tablet-----	2, 399. 94
Dunlap, 25 feet east of gate to Mountain Home Hotel, flush with ground, against fence, in rock; bronze tablet-----	1, 915. 38

MILLWOOD, WEST TO DUNLAP.

Millwood, opposite junction of flumes at north side of Sanger Lumber Company's shipping yard, in granite ledge in hill; bronze tablet----	5, 111. 93
Dunlap, 2 miles east of, north side of road, at point of hill, in granite ledge 4 feet high; bronze tablet-----	2, 388. 98

KINGRIVER POST-OFFICE, EAST TO DUNLAP.

Kingriver post-office, 3 miles east of, at intersection of Millwood and Sanger and Reedly roads, at southwest corner of vineyard; iron post-----	395. 32
Kingriver post-office, 7 miles east of, in front of Clarks Valley church, south side of road, in top of granite ledge; aluminum tablet-----	470. 28
Kingriver post-office, 10 miles east of, 3 miles east of Clarks Valley Church, 1.75 miles west of Street's eating house, 0.25 mile east of small ridge crossing road, granite rock, 4 by 8 by 114 feet, on road right of way; aluminum tablet stamped "587 F" (?)-----	586. 80
Squaw Valley post-office, 100 feet southeast of, in rock; aluminum tablet stamped "1692 F"-----	1, 693. 09
Dunlap, 5.4 miles west of, 5.33 miles east of Squaw Valley store, 2 miles west of Mr. Irvin's house, west side of tributary of Mill Creek, 5 feet north of road, in top of granite ledge; aluminum tablet stamped "1501 F"-----	1, 501. 84

NEAR LETCHER, NORTHEAST TO HUMPHREYS STATION.

	Feet.
Humphreys, 700 yards north of station, 6 feet west of road, 100 feet west of creek, at small flat, in granite ledge; aluminum tablet stamped "1048 F"-----	1,044.424

FRESNO QUADRANGLE.

FRESNO, EAST ALONG STAGE ROAD TO KINGRIVER POST-OFFICE.

Fresno, Southern Pacific Railroad passenger station; tablet-----	289.983
Fresno, 3 miles east of station, 400 feet west of crossing of Sunnyside car line and Ventura avenue, 1 mile east of Fresno schoolhouse, south edge of road; iron post-----	304.849
Fresno, 6 miles east of, northeast corner of Sunnyside vineyard, north side of Centerville road, west side of Fowler road, at intersection; iron post stamped "323 B"-----	323.024
Fresno, 9 miles east of, on south edge of Centerville road, 40 feet east of section line, opposite square yellow house; iron post-----	348.49
Centerville, 4 miles west of, 50 feet west of corner of section, at road crossing, between wheat ranches, south edge of road; iron post-----	372.77
Centerville (Kingriver post-office), 1 mile west of, 0.25 mile east of Fowler ditch, south edge of county road; iron post-----	393.35

FRESNO, ALONG SOUTHERN PACIFIC RAILROAD RUNNING EAST, TO LAS PALMAS (MALTE-MORO); THENCE NORTH VIA CLOVIS, TO POLLASKY; THENCE ALONG HIGHWAY WEST, TO CLOSURE ON PRECISE LINE AT MADERA.

Barton, 1.2 miles east of, in southeast corner of vineyard, north of schoolhouse, east of wagon road, south of track; iron post-----	316.556
Tarpy, 150 feet north of station platform, at southwest corner of northwest quarter sec. 20, T. 13 S., R. 21 E., on ditch bank west of track; iron post-----	347.187
Clovis, at west edge of railroad right of way, 75 feet south of first switch block south of planing mill; iron post-----	356.084
Gordon, 150 feet north of south end of switch, at west edge of railroad right of way; iron post stamped "391"-----	391.250
Pollasky, 450 feet south of station, opposite milepost 231, at east edge of right of way of railroad; iron post stamped "337"-----	337.035
Pollasky, 6.25 miles west of, 75 feet north of corner of small pasture at rocky point, south side of road; iron post stamped "451"-----	451.155
Cottonwood schoolhouse, 0.5 mile north of, north side of road, against fence of adobe ranch; iron post stamped "342"-----	342.188
Madera, 4 miles east of, 200 feet east of first small hill south of Sugar Pine and Madera road, 20 feet south of lumber flume, at north side of public road; iron post stamped "304"-----	304.347

CLOVIS, NORTHEAST ALONG ROAD, TO NEAR LETCHER.

Flume section house No. 7, 50 feet north of, 3 miles northeast of Clovis, east side of road; iron post-----	409.100
Collins ranch, 1.1 miles east of, southwest of section house No. 6, south side of road, opposite curve in flume; iron post-----	460.849
Letcher, 0.5 mile north of, in granite rock in pasture, 50 feet east of county road; aluminum tablet stamped "601 F"-----	597.241

KAISER QUADRANGLE.

HUMPHREYS STATION, NORTH ALONG ROAD VIA TOLLHOUSE AND OCKENDEN, TO SHAVER.

Feet.

Pine Ridge, sec. 9, T. 10 S., R. 24 E., 100 feet south of store and post-office, in top of granite boulder 5.5 by 8 feet; aluminum tablet stamped "4942 F"-----	4, 938. 332
Shaver, sec. 13, T. 9 S., R. 24 E., 150 feet north of mill and machine shop, in granite ledge; aluminum tablet stamped "5275 F" (on a single spur line)-----	5, 271. 531

MUSIC'S OLD MILL (OCKENDEN), OVER COUNTRY ROAD AND TRAIL VIA MARKWOOD AND DINKEY CREEK MEADOWS, TO DIVIDE BETWEEN BEAR AND DEER CREEKS ON KINGS RIVER TRAIL.

T. 10 S., R. 25 E., sec. 12, 2.5 miles east of Markwood Meadows, 400 feet south of road, east of Summit Meadows, in granite ledge; aluminum tablet stamped "6492 F"-----	6, 488. 598
Dinkey Meadows, sec. 20, T. 10 S., R. 26 E., 50 feet south of road, 300 feet south of first cabin, about 0.5 mile west of bridge over Dinkey Creek and 300 feet south of south bank, in granite rock; aluminum tablet-----	5, 607. 484
Snow Corral, 4.5 miles east of Bear Creek, at point of hill, 50 feet north of trail, on east slope of hill west of meadow, 0.8 mile east of summit of ridge, in granite rock; aluminum tablet stamped "7118 F" (elevation by Tehipite levels from Kaweah 7,119.44)-----	7, 115. 758

DINKEYS MEADOWS, NORTH VIA TRAIL, TO MOUTH OF TAMARACK CREEK.

T. 9 S., R. 26 E., sec. 30, 1.7 miles north of Dry Meadows, east of trail, at summit of ridge, in granite ledge at curve; aluminum tablet stamped "7202 F"-----	7, 199. 924
T. 8 S., R. 25 E., sec. 35, Tamarack Creek, 150 feet from ford, west of Red Mountain trail, in granite boulder; aluminum tablet stamped "7141 F"-----	7, 148. 935

MOUTH OF TAMARACK CREEK, VIA MONO TRAIL AND MONO CREEK CROSSING, TO 2.3 MILES NORTHEAST OF SOUTH FORK OF SAN JOAQUIN RIVER.

T. 8 S., R. 26 E., sec. 18, Big Creek, 0.6 mile north of crossing, east of north fork of Big Creek, 200 feet east of ford, in granite ledge; aluminum tablet stamped "6876 F"-----	6, 883. 669
T. 7 S., R. 26 E., sec. 26, Kaiser Ridge, summit of divide north of Kaiser Pass, east of trail, opposite Luck Point, in granite boulder; aluminum tablet stamped "9295 F"-----	9, 302. 591
T. 7 S., R. 27 E., sec. 7, 100 feet north of South Fork of San Joaquin River, 200 feet west of Mono trail ford, in granite ledge at foot of bluff; aluminum tablet stamped "6405 F"-----	6, 412. 356

MONO CREEK, ON MONO TRAIL, NORTHWEST VIA CATTLE TRAIL, TO MILLER'S BRIDGE, OVER MIDDLE FORK OF SAN JOAQUIN RIVER.^a

T. 6 S., R. 26 E. (unsurveyed), 3.2 miles southeast of Rock Creek, in flat small meadow, 10 feet south of trail, in granite boulder; bronze tablet stamped "7061 F"-----	7, 068. 706
--	-------------

^a See under "Mount Lyell quadrangle," p. 118.

	Feet.
Bear Meadow, 0.5 mile northwest of, south of trail, on summit west of Bear Meadow, in granite ledge; bronze tablet stamped "7554 F"-----	7,561.709
Cassidy Meadow, south side of Rattlesnake Lake, sec. 24, T. 5 S., R. 25 E., east of granite point, in ledge between trail and lake; bronze tablet stamped "5576 F"-----	5,583.419
TOLLHOUSE SCHOOLHOUSE, NORTHWEST ALONG PUBLIC ROAD, TO POWER HOUSE; THENCE ALONG PIPE LINE, TO RESERVOIR; THENCE ALONG DITCH TO A POINT 2 MILES SOUTHEAST OF NORTH FORK.	
T. 10 S., R. 23 E., sec. 8, south of intersection of Pine Ridge and power-house roads, in top of granite ledge; bronze tablet stamped "2013 F"-----	2,009.411
T. 9 S., R. 23 E., sec. 18, San Joaquin, light and power house, at northeast corner of building, in granite pillar; bronze tablet stamped "1013 F"-----	1,009.326
T. 8 S., R. 23 E., sec. 30, North Fork, 2 miles southeast of post-office, west of road and ditch, at sharp curve above field and house, in granite boulder 10 by 8 feet; bronze tablet stamped "2503 F"-----	2,499.788

LOS BANOS, MERCED, SONORA, AND YOSEMITE QUADRANGLES.

MARIPOSA AND MERCED COUNTIES.

The elevations in this list are based on an aluminum tablet in southeast corner of the county court-house at Merced. The elevation of this is accepted as 171.118 feet above mean sea level as determined by precise leveling from Benicia.

The work was done in 1905 mostly by Mr. C. H. Semper, levelman, partly run as a double-rodged line and partly the mean of lines run in opposite directions. The connection Yosemite Point to Snow Flats was made by Mr. R. A. Farmer, topographer.

MERCED QUADRANGLE.

MERCED, ALONG HIGHWAY, TO MERCED RIVER.

	Feet.
Merced, southeast corner of county court-house; aluminum tablet stamped "171 B"-----	171.118
Merced, 4.3 miles north of, at entrance to Crocker Huffman back ranch, west side of road, 20 feet north of gate; iron post stamped "175 B"-----	175.222
Sixmile House, northeast corner of fork with road to east; iron post stamped "206 B"-----	205.775
Sixmile House, 3.3 miles north of, 65 feet south of bridge over creek, east side of road; iron post stamped "377 B"-----	376.949
Sixmile House, 6.7 miles north of, at northwest corner of fork with road to west; iron post stamped "284 B"-----	283.913

AMSTERDAM, SOUTHEAST ALONG RAILROAD, TO MERCED.

Amsterdam, 3.3 miles southeast of, north margin of railroad and highway, 4 feet east of milepost 157; iron post stamped "196 B"-----	195.984
Amsterdam, 6.4 miles southeast of, at southwest corner of fork with road to Atwater, at J. J. Gray's ranch house; iron post stamped "175 B"-----	175.333

PRIMARY LEVELING.

115

LOS BANOS QUADRANGLE.

SNELLING, WEST TO HOPETON; THENCE SOUTH TO AMSTERDAM.

	Feet.
Snelling, 4.5 miles southwest of, at corner of fork with road to north, at fence corner of J. G. Ruddle's ranch; iron post stamped "204 B"-----	204. 037
Hopeton, at southeast corner of fork with private road, in front of saloon; iron post stamped "185 B"-----	184. 986
Hopeton, 2.2 miles south of, southwest end of bridge over Merced River, west margin of road; iron post stamped "172 B"-----	172. 245
Amsterdam, 140 feet west of large warehouse, 10 feet east of station signboard, 20 feet north of track; iron post stamped "215 B"-----	215. 156

SONORA QUADRANGLE.^a

MERCED RIVER, NORTHEAST TO SNELLING; THENCE EAST TO MERCED FALLS; THENCE NORTHEAST TO COULTERVILLE; THENCE EAST TO 2.4 MILES SOUTHEAST OF BOWER CAVE.

Snelling, 1.7 miles southwest of, 640 feet north of Merced River roller mills, 60 feet southeast of end of bridge over Merced River, at fence line; iron post stamped "243 B"-----	243. 114
Snelling, at southwest corner of Lewis and Third streets; iron post stamped "259 B"-----	259. 008
Snelling, 2.7 miles east of, on south side of road, on line of east margin of I. J. Buckley's brick ranch house; iron post stamped "291 B"-----	291. 026
Merced Falls, at northeast corner of yard of Merced Falls Power Company, on margin of road; iron post stamped "351 B"-----	351. 125
Merced Falls, 2.9 miles north of, at summit of mountains, 30 feet west of road; iron post stamped "764 B"-----	763. 825
Webbs, at southwest corner of yard fence, margin of road; iron post stamped "1046 B"-----	1, 045. 953
Peter Senges, at gate leading to ranch house, at margin of fence; iron post stamped "1128 B"-----	1, 127. 958
Peter Senges, 1.5 miles north of, at junction of Piney Creek with Merced River, 125 feet south of creek, 700 feet west of river, near corner of fence; iron post stamped "556 B"-----	555. 979
Baxter post-office, northeast corner of yard fence; iron post stamped "1250 B"-----	1, 249. 912
Baxter, 3.1 miles north of, at junction of roads to Coulterville and Horseshoe Bend, 10 feet south of stage station office; iron post stamped "858 B"-----	857. 965
Coulterville, opposite southeast corner of Jeffrey's Hotel, at corner of street in front of burned brick building; iron post stamped "1676 B"-----	1, 676. 092
Coulterville, 2.5 miles east of, 0.6 mile east of forks of road, at horse-shoe bend in road, south side of fence line, near large oak 4 feet in diameter; iron post stamped "2211 B"-----	2, 211. 034
Coulterville, 5.7 miles east of, at summit of mountain, 0.4 mile east of Mountain View saloon, 15 feet south of road; iron post stamped "3346 B"-----	3, 346. 039
Bean Creek Bridge, 1.5 miles east of, in front of W. H. Dudley's ranch house, at northwest corner of front yard fence; iron post stamped "2984 B"-----	2, 984. 063

^a For additional elevations outside this quadrangle see p. 121.

	Feet.
Bower Cave, at road crossing North Fork of Merced River, 50 feet east of river, at north margin of road; iron post stamped "2349 B"-----	2,349.038
Bower Cave, 2.4 miles southeast of, at northeast corner of school-house yard; iron post stamped "2939 B"-----	2,939.069

YOSEMITE QUADRANGLE.

NEAR BOWER CAVE, SOUTHEAST TO MERCED RIVER; THENCE EASTERLY ALONG SAME TO YOSEMITE VALLEY.

Kinsley, on south side of road, at margin of fence, directly opposite post-office; iron post stamped "2715 B"-----	2,714.998
Jenkins Mountain, summit of mountain, on trail, 15 feet south of large oak; iron post stamped "3289 B"-----	3,289.039
Jenkins Mountain, at east foot of, 145 feet west of Big Grizzly Creek, 130 feet north of Merced River, 30 feet east of old cabin, at edge of trail; aluminum tablet ^a stamped "1324 B"-----	1,323.761
Ned Gulch, 1.9 miles east of, 0.5 mile east of junction of South Fork with river, on long flat ground, at foot of slope, north side of large rock; aluminum tablet stamped "1425 B"-----	1,424.982
Ferguson Mine, 2.2 miles east of, 2 feet south of bridge over Merced River, west abutment, 20 feet east of west end; aluminum tablet stamped "1586 B"-----	1,585.908
Merced River Bridge, 2.5 miles east of, at west foot of steep grade, in open ground covered with boulders, 35 feet east of trail, large granite rock, in river face; aluminum tablet stamped "1824 B"-----	1,823.966
Crane Creek, 0.8 mile east of, trail nearly level with river, 95 feet west of common corner of secs. 9, 10, 15, and 16, T. 3 S., R. 20 E., 10 feet east of large crooked oak, perpendicular rock; aluminum tablet stamped "2117 B"-----	2,116.969
Crane Creek, 2.4 miles east of, 260 feet north of zig zag in trail close to river; in face of perpendicular rock; aluminum tablet stamped "2738 B"-----	2,738.001
Cascade House, 0.7 mile south of, on main road, 100 feet southwest of junction of road with river trail, in face of perpendicular rock; aluminum tablet stamped "3511 B"-----	3,510.981
Yosemite, 50 feet west of west boundary stake of old State park, on north side of road to Cascade Falls, large granite boulder; aluminum tablet stamped "3576 B"-----	3,576.004
Yosemite Valley, north side of river, at west turn to bridge near margin of road, 75 feet northwest of Pohone Bridge, large boulder; aluminum tablet stamped "3880 B"-----	3,879.767
Yosemite Valley, directly opposite Guardian's office, at east margin of road, top of large granite rock; aluminum tablet stamped "3964 B"-----	3,964.287
Yosemite Valley, at junction of roads, north side of river, north and east side of roads, 150 feet northeast of iron bridge over Merced River, at Sentinel Hotel, in center of top of concrete pier 2.5 feet high, base 20 by 20 inches, and top 12 by 12 inches; aluminum plug stamped with a triangle, and "U. S. G. S."-----	3,960.096

^a From this point the old system of double rod was used.

	Feet.
Immediately over above bench mark is a rectangular aluminum plate half inch thick marked "Charles D. Walcott, Director, U. S. Geological Survey, Latitude 37° 44' 40", Longitude 119° 35' 21"---	3, 960. 138
Yosemite Valley, at power house, 40 feet south of trail to Vernal Falls, 40 feet north of power house bridge, 30 feet north of road, large granite boulder; aluminum tablet stamped "4034 B"-----	4, 034. 061

UP YOSEMITE FALLS TRAIL, NORTHEAST TO SNOW FLAT.

Yosemite Valley, at foot of trail to Yosemite Falls, 100 feet west of road, 30 feet south of trail, face of large granite boulder; aluminum tablet stamped "3989 B"-----	3, 989. 013
Yosemite Valley, south of trail to Yosemite Falls, in rock; aluminum tablet stamped "F 1905 5031"-----	5, 030. 576
Yosemite Valley, in angle of trail to Yosemite Falls, 100 feet from large flat rock used as lookout to bottom of falls, top of large granite rock; aluminum tablet stamped "5143 B"-----	5, 142. 666
Yosemite Valley, top of Yosemite Falls, east side of bridge over Yosemite Creek, south side of rock foundation of abutment; aluminum tablet stamped "6603 B"-----	6, 603. 056
Yosemite Point, at west end of iron railing; triangulation tablet---	6, 934. 616
Summit north of trail, rock 5 feet base, 3 feet high; aluminum tablet stamped "F 7852 1905"-----	7, 851. 765
Junction of trail with Tioga wagon road, south of, on rock 3 by 3 by 3 feet; aluminum tablet stamped "7981 F"-----	7, 981. 013

BRIDGEPORT AND MOUNT LYELL QUADRANGLES.

MONO AND TUOLUMNE COUNTIES.

The elevations in the following list are determined mostly by single unadjusted lines based upon a new elevation at Snow Flats which was determined in 1905 by a single spur from a double-run spur line run to Yosemite Valley from a bench mark at Merced on the precise-level line from Benicia.

The results were formerly published in the Appendix to the Twentieth Annual Report, based upon a double-rodged line from Stockton; but as now corrected the elevations by this list are 4.389 feet greater than by the corrected line from Stockton and 6.355 lower than by single line of 1905 from Laws. Part of a circuit to Mono Mills is on Benton quadrangle (p. 101).

The leveling was done in 1898 under Mr. R. B. Marshall, topographer, by Mr. C. R. Smith, levelman. The bench mark at Miller Bridge was established by L. D. Ryus, levelman, in 1901, from Fresno.

BRIDGEPORT QUADRANGLE.

TO HARDY STATION FROM BENCH MARK 2.5 MILES WEST.

	Feet.
Hardy station, about 2.5 miles west of, on rock ledge 1,400 feet east of bridge over West Walker River, in a bend of the road, on south side of grade; copper bolt stamped "6703" (elevation by corrected line from Stockton, 6,702.518)-----	6, 706. 907

	Feet.
Hardy station, at junction of Sonora-Mono toll road and the Carson road, 60 feet east of Little Walker River; iron post stamped "6942"-----	6,945.830
HARDY STATION, SOUTH ALONG MAIN ROAD, TO BRIDGEPORT; THENCE SOUTHEAST TO BOWIE; THENCE SOUTHWEST TO MONO LAKE.	
Summit between Hardy and Bridgeport, 15 feet east of road; iron post stamped "7540 O"-----	7,544.812
Hunttoon station, on right side of road, 100 feet below water trough; iron post stamped "6837 O"-----	6,841.999
Bridgeport, 3 miles northwest of, east side of road, at north side of Simmon's Lane; iron post stamped "6496 O"-----	6,500.556
Bridgeport, at southwest angle of court-house; iron post stamped "6465 O"-----	6,469.436
Tollgate, Bridgeport, and Bodie road, near northeast corner of gate; iron post stamped "6643 O"-----	6,647.946
Clearwater Creek crossing, 20 feet north of bridge; iron post stamped "7196 O"-----	7,201.323
Sheep camp, across road from water trough and 50 feet above; iron post stamped "7350 O"-----	7,354.824
Hectors station, on Bodie and Lundy road, across road from the dwelling house at edge of orchard and garden; iron post stamped "6760 O"-----	6,765.322
Jordan Creek crossing of Bodie and Lundy road, 150 feet south of bridge, on north side of road; iron post stamped "6779 O"-----	6,783.407
T. 2 N., R. 26 E., Diablo meridian, 4 feet east of southwest corner of sec. 19, witnessed by mound of rocks, about midway between Mono post-office and Mono schoolhouse, on hillside, about 350 feet in elevation above lake and about 2,000 feet in horizontal distance from lake shore; iron post stamped "6761 O"-----	6,765.714
Mono Lake; surface of water, July 27, 1898.-----	6,417.3

MOUNT LYELL QUADRANGLE.

MONO LAKE POST-OFFICE, SOUTHEAST TO RUSH CREEK.

Ney's ranch, sec. 4, T. 1 N., R. 26 E., near Mono Lake shore, in large bowlder on north side of road and 200 feet east of blacksmith shop; aluminum tablet stamped "6423 O"-----	6,427.471
T. 1 N., R. 26 E., sec. 13, Rush Creek crossing, junction of lake road with Rush Creek road from Farrington station; iron post stamped "6442 O"-----	6,446.571
NEY'S RANCH (SHORE OF LAKE MONO), SOUTH ALONG ROAD, TO JUNCTION OF ROAD IN SEC. 9, T. 2 S., R. 27 E.	
T. 1 N., R. 26 E., northeast corner, sec. 33, Farrington station, 50 feet south of dwelling, inside of fence at edge of road to Walter Lake; iron post stamped "6854 O"-----	6,858.729
T. 1 S., R. 27 E., sec. 29, Owens River road, 7 miles southeast of Farrington station, at head of short, steep grade, at upper edge of grove of trees, 10 feet left of road; iron post stamped "7601 O" (elevation brought from Mohave, 7,612.182)-----	7,605.827
T. 2 S., R. 27 E., sec. 9, Long Valley and Owens River road, at junction of with Bodie and Benton wagon road, on north side of road; iron post stamped "7938 O" (elevation brought from Mohave, 7,948.998)-----	7,942.643

FARRINGTON, SOUTH TO SILVER LAKE.

Feet.

Grant Lake, at outlet of, 10 feet east of road; iron post stamped "7068 O"-----	7, 073. 228
Silver Lake, at outlet of; iron post stamped "7217 O"-----	7, 221. 937

NEY'S RANCH, UP LEEVINING CREEK ROAD, TO SEC. 23, T. 1 N., R. 26 E.

T. 1 N., R. 26 E., quarter corner between secs. 23 and 24; iron post stamped "7467 O"-----	7, 472. 097
--	-------------

FARRINGTON STATION, SOUTHWEST ALONG ROAD AND TRAIL, TO MONO PASS; THENCE WEST ALONG TRAIL, TO SNOW FLAT.

Walker Lake, 100 feet north of outlet of, at upper end of wagon road where Bloody Canyon trail begins, near dwelling of A. Grose, 100 feet from lake and 123 feet from fence; iron post stamped "7929 O"-----	7, 934. 030
Walker Lake; surface of water, September 1, 1898-----	7, 931. 6
Sardine Lake; surface of water, September 26, 1898-----	9, 881. 1
Mono Pass, 30 feet north from Shore of Summit Lake and 4 feet to right of trail; iron post stamped "10599 O"-----	10, 603. 604
Dana Fork, trail at point where sheep trail branches to right through timber alongside hill and where stream turns westward to main trail, continuing northwest down to meadows, in rock at southwest corner of cabin; aluminum plug stamped "U. S. G. S. 9738 Ft. B. M. O."-----	9, 742. 563
Soda Springs, 3.5 miles east of, on north side of Tioga road where trail comes in from the meadows to the eastward of road, in out-cropping ledge of rock; aluminum bolt stamped "U. S. G. S. 9270 Ft. B. M. O."-----	9, 274. 794
Soda Springs, 100 feet west of, in large granite bowlder on south side of trail; aluminum bolt stamped "U. S. G. S. 8594 Ft. B. M. O."-----	8, 598. 681
T. 1 S., R. 23 E., southeast corner sec. 1, Diablo meridian; iron post stamped "8555 O"-----	8, 560. 118
Cathedral Creek, in conspicuous rock in north side of creek bed, 50 feet from road; aluminum bolt stamped "U. S. G. S. 8337 Ft. B. M. O."-----	8, 342. 076
Lake Tanaya, on west shore of, in large bowlder between road and lake shore, about 300 feet east of three log cabins in grove of trees; aluminum tablet stamped "U. S. G. S. 8146 Ft. B. M. O."-----	8, 150. 447
Lake Tanaya; surface of water, September 17, 1898-----	8, 146.
Snow Flat, 300 feet southwest of wooden culvert in road crossing, in large granite bowlder, on west side of road; aluminum tablet stamped "U. S. G. S. 8705 Ft. B. M. O." (recovered in 1905 by leveling from Merced, and correction made)-----	8, 710. 341

DANA FORK, TRAIL NORTH TO TIOGA.

Tioga Pass summit, on rock on east side of road; aluminum tablet stamped "9941 Ft. B. M. O."-----	9, 946. 188
Tioga mine, in ledge of rock, at southwest corner of assay office; round iron plug set in cement and marked "9795"-----	9, 799. 745

AT MILLER BRIDGE.*

Miller Bridge, sec. 11, T. 5 S., R. 25 E., 15 feet east of bridge over Middle Fork of San Joaquin River, in granite ledge; bronze tablet stamped "4556 F"-----	4, 563. 252
--	-------------

* Determined by single unadjusted line by L. D. Ryus in 1901 from Fresno.

BIG TREES, DARDANELLES, JACKSON, OAKDALE, SONORA, AND STOCKTON QUADRANGLES.

CALAVERAS, MONO, SAN JOAQUIN, STANISLAUS, AND TUOLUMNE COUNTIES.

The elevations in the following list are the unadjusted results of a double-rodged primary-level line previously reported upon in Appendix to the Eighteenth Annual Report, corrected in agreement with the elevation at Stockton determined by precise leveling from Benicia, being 0.492 foot greater than values previously published.

The leveling was done in 1896 by Mr. J. B. Lippincott, levelman.

This line closes 4,389 feet low upon the elevation at Hardy station, on Bridgeport quadrangle corrected in agreement with 1905 leveling from Merced.

STOCKTON QUADRANGLE.

AT STOCKTON.

	Feet.
Stockton, southwest corner of Scott avenue (south side of Mormon channel) and Center street, on north iron doorsill, west end of Cool Corner saloon; "Cool Corner" bench mark.....	15. 633
Stockton, southwest corner of Scott avenue and Center street, 18 feet from curb corner and 12 feet north of iron doorsill; iron post stamped "16".....	15. 973
Stockton channel, at southeast head of, corner of Weber avenue and Eldorado street, east of steps at corner post; iron plate.....	12. 714
Stockton, on the top of a stone post on the north side of the court-house and west side of walk.....	16. 1
Stockton, San Joaquin court-house, in angle of wall at north entrance, west of the door and near columns, between north door and first window west of it; bronze tablet stamped "18".....	17. 953
Stockton, Southern Pacific passenger station, Milton and Oakland branch; top of rail.....	18. 7
STOCKTON, NORTHEAST ALONG MILTON ROAD AND SOUTHERN PACIFIC RAILROAD, TO PETERS.	
J. B. Marsh's house, at northeast corner of entrance of lean-to; iron post stamped "34".....	33. 605
Farmington, junction with road to, near Smyth's ranch; iron post stamped "67".....	66. 551
Peters-Linden road, at southeast corner of junction with; iron post stamped "102".....	101. 825

JACKSON QUADRANGLE.

PETERS, NORTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO MILTON.

Waverly, at crossing of the Stockton-Milton road over Southern Pacific tracks, on south side of track and east side of the crossing sign; iron post stamped "219".....	218. 285
Waverly, in front of station; top of rail.....	215. 2
Milton, 9 feet north of southeast corner of Peterson & Drake's warehouse and 57 feet south of the railroad track, 60 feet west of the Southern Pacific passenger station; iron post stamped "383".....	382. 330

MILTON, EAST TO SALT SPRINGS RESERVOIR.

Salt Springs Reservoir, south side of, in large rock about 600 feet south of and in line with dam; copper bolt stamped "1092".....	1, 091. 510
--	-------------

PRIMARY LEVELING.

121

OAKDALE QUADRANGLE.

SALT SPRINGS, SOUTHEAST VIA COPPEROPOLIS, TO MOUNT DIABLO BASE LINE.

	Feet.
Copperopolis, about 2.5 miles north of, east side of road, at a summit between Salt Spring Valley and Copperopolis, at an oblique corner of fence; iron post stamped "1108"-----	1, 107. 371
Copperopolis, in front brick wall of Fontana's store, approximately 2 feet above the store floor and 3 feet above stone foundation, opposite Vendome Hotel; bronze tablet stamped "971"-----	970. 759
O'Byrnes Ferry, Stanislaus River, in the stone front wall of Pardee's store, between south window and southeast corner of store, 500 feet north of bridge on west side of Milton-Jamestown road; bronze tablet stamped "432"-----	431. 758
O'Byrnes Ferry, 3 miles east of, at the top of and on the north side of grade, about 3 miles west of the Goodwin ranch; iron post stamped "1090"-----	1, 089. 981

SONORA QUADRANGLE.^a

MOUNT DIABLO BASE, NORTHEAST VIA SONORA, TO NEAR SOULSBYVILLE.

Goodwin's ranch, 1 mile east of house, on north side of road and 6 miles west of Jamestown; iron post stamped "1389"-----	1, 389. 045
Goodwin's wine cellar, on north step of, about 6 miles west of Jamestown and 3.5 miles north of Chinese camp; copper plug stamped "1176"-----	1, 175. 791
Jamestown, in front wall in the east end of the brick building with iron doors and a stone pavement, on the south side of the road, one-half block west of Sisson's Hotel; bronze tablet stamped "1403"-----	1, 402. 424
Sonora, in south post of east entrance in street wall of the courthouse; bronze tablet stamped "1825"-----	1, 824. 375
Sonora, in the outside wall 1 foot south of gate at the east edge of the court of Victoria Hotel, facing Washington street; copper bolt stamped "1794"-----	1, 793. 648
Soulsbyville, junction with road to, about 3 miles east of Sonora on the north side of Soulsbyville road, near the fence at the Cherokee ranch; iron post stamped "2144"-----	2, 143. 381

BIG TREES QUADRANGLE.

NEAR SOULSBYVILLE, NORTHEAST ALONG ROAD, TO PARSONS; THENCE NORTHEAST 2.5 MILES.

Columbia road, in triangle formed by junction with; iron post stamped "3254"-----	3, 253. 352
Sugarpine, about 800 feet east of post-office, on rock 12 by 6 feet, 4 feet high, in corral; copper bolt stamped "4468"-----	4, 467. 747
Sugarpine, about 2.5 miles east of, in forks of road to Hale's sawmill; iron post stamped "4916"-----	4, 916. 099
Genesee place (Saints' Rest), in rock 3.5 by 2.5 feet, 1.5 feet high, 10 feet east of barn, 10 feet south of road, 150 feet north of creek and on west edge of a group of trees; copper bolt stamped "5139"-----	5, 138. 461
Ball Mountain summit, between North Fork of Tuolumne and South Fork of Stanislaus rivers, on north side of road, about 6 miles west of Strawberry, at the northeast head of draw, on large boulder; bronze tablet stamped "5624"-----	5, 623. 563

^a For additional elevations on this quadrangle see p. 115.

	Feet.
Cold Spring, about 0.75 mile west of, at the summit between North Fork of the Tuolumne and South Fork of Stanislaus rivers, at bend of road; iron post stamped "5697"-----	5,696.568
Parsons (Strawberry), 48.8 feet southeast from southeast corner of Parson's store and 24.8 feet from southwest corner of Parson's house, on east side of road on north side of South Fork of Stanislaus River; iron post stamped "5240"-----	5,239.435
Strawberry, about 2.5 miles east of, in top of granite boulder at the summit between South Fork and Main Fork of Stanislaus River, and 50 feet east of road, trees blazed in vicinity; copper bolt stamped "6134"-----	6,133.894

DARDANELLES QUADRANGLE.

POINT 2.5 MILES NORTHEAST OF PARSONS, NORTHEAST TO EUREKA VALLEY.

Cow Creek, 50 feet east of crossing of, in side of large boulder on south of road; bronze tablet stamped "5769"-----	5,769.121
T. 5 N., R. 18 E., 2 feet north of southeast corner sec. 15, north of road between mileposts 30 and 31, 6 feet from sugar pine tree marked "B. T. 60° E. 5 feet"; iron post stamped "5943"-----	5,942.822
Mill Creek, 200 feet east of crossing, on north side of road, trees blazed in vicinity; iron post stamped "6273"-----	6,272.380
Niagara Creek, 150 feet north of crossing, in large granite boulder, the highest one of the group, trees blazed in vicinity; copper bolt stamped "6530"-----	6,529.408
T. 6 N., R. 19 E., sec. 31, summit between Niagara Creek and Stanislaus River, at the head of grade and about 2,000 feet north of the Niagara Creek crossing, in a granite rock on north side of road, 4 feet above road level, on southwest face of rock; bronze tablet stamped "6638"-----	6,637.268
T. 6 N., R. 19 E., sec. 23, about 2 miles southwest from Brightmans Flat, on south side of road, in pyramid-shaped rock 6 feet high, at level road below Pattersons grade; bronze tablet stamped "5664"-----	5,664.204
Stanislaus River, in granite ledge 28 feet northwest from the northwest corner of bridge, and approximately 2 miles west from Douglas ranch and 6 feet above road level; copper plug stamped "5828"-----	5,827.953
Eureka Valley, 6 feet south of southwest corner of Douglas ranch; iron post stamped "6076"-----	6,075.838

EUREKA VALLEY, EAST VIA SONORA PASS, TO NEAR HARDY STATION.

Bakers station, about 0.25 mile southeast of, on rock bench at the foot of and west side of grade, 180 feet east of road and 93 feet south of blazed yellow pine; bronze tablet stamped "6265"-----	6,265.105
Sonora Pass, 3 miles west of, on a rock ledge on west of road and 1,000 feet west of second crossing of the creek, trees blazed in vicinity; copper bolt stamped "8398"-----	8,398.147
Sonora Pass, at summit of, on south side of road; iron post stamped "9623"-----	9,623.427
Sonora Pass, 3.5 miles east of summit of, at mule corral, just west of a large canyon on south, and south of road; iron post stamped "8583"-----	8,583.206
Crinoline grade, foot of, on top of boulder 9 feet high and 10 feet in diameter, on south side of road, 10 miles west of Hardy station and 1,360 feet west of Leavitt's chimney, between the road and fence; copper bolt stamped "7152"-----	7,151.467

BYRON, CONCORD, MOUNT DIABLO, NEW ALMADEN, PALO ALTO, PLEASANTON, SAN FRANCISCO, SAN JOSE, SANTA CRUZ, STOCKTON, AND TESLA QUADRANGLES.

ALAMEDA, CONTRA COSTA, SAN JOAQUIN, SAN MATEO, SANTA CLARA, AND SANTA CRUZ COUNTIES.

The elevations in the following list are based upon mean sea level computed from tidal records at Martinez, Pacheco, Black Diamond, and Redwood, and further controlled at Lathrop by precise leveling from Benicia.

The leveling on San Francisco, Concord, Mount Diablo, Byron, and part of Pleasanton quadrangles was done in 1896 under Mr. L. C. Fletcher by Mr. J. A. Vogleson, levelman. Most of the work on Pleasanton and some on Stockton, Tesla, and San Jose quadrangles was done in 1903 by Mr. S. E. Blout, levelman. Most of the work on Tesla and part on Stockton quadrangles was done in 1905 under Mr. R. B. Marshall by Mr. C. H. Semper, levelman, and the work on Santa Cruz, Palo Alto, and part of San Jose quadrangles was done in 1899 under Messrs. E. C. Barnard and A. B. Searle, topographers, by Mr. C. C. Ward, levelman.

SAN FRANCISCO QUADRANGLE.

OAKLAND POINT TO OAKLAND, THENCE NORTH ALONG SOUTHERN PACIFIC RAILROAD TO SOBRANTE.

	Feet.
Oakland Point, 30.5 feet from corner of machine shop, 19 feet from corner of office of Southern Pacific Company, 1 foot from west edge of walk from railroad track to machine shops and 9 feet south from west side of doorway, 0.4 foot underground; Southern Pacific Company's bench mark on top of a 30-foot bar of railroad iron driven in solid ground by means of a pile driver (afterwards covered by a wooden platform with a hole bored through the planking so as to make it easy of access)-----	8. 151
Oakland, Broadway front of Hall of Records, in foundation on north side of entrance, 4 feet above ground; bronze tablet stamped "24"-----	24. 343

CONCORD QUADRANGLE.

MARTINEZ, SOUTHEAST ALONG HIGHWAY, NEAR PACHECO, TO CONCORD.

Pacheco, brick building, formerly a warehouse with iron shutters, owned by G. Anderson, third building north of road to Concord and post-office; iron piece projecting from wall, U. S. C. & G. S. B. M.-----	21. 210
Pacheco, 0.75 foot south of preceding bench mark, in wall of same building; bronze tablet stamped "21"-----	21. 197
Concord railroad station; top of rail at road crossing-----	42. 0
Concord, west corner of public square, southeast intersection of Main street with street running by Kline's Hotel; iron post stamped "65"-----	64. 610

DANVILLE, NORTH ALONG ROAD, TO PACHECO.

Alamo, east side of Main street, north side of lane to railroad ranch, opposite hotel and post-office; iron post stamped "270"-----	270. 327
Walnut Creek, in schoolhouse yard, between eucalyptus trees, near east fence; iron post stamped "151"-----	150. 750

MOUNT DIABLO QUADRANGLE.

ANTIOCH, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO NEROLY SIDING.

	Feet.
Neroly siding, county road just north of, gate to private road crossing, first panel east of gate; iron post stamped "79"-----	78.923

NEAR BRENTWOOD, WEST UP MARSH CREEK, TO MORGAN TERRITORY; THENCE NORTHWEST VIA CLAYTON TO CONCORD.^a

Morgan Territory, in schoolhouse yard, 55 feet east of northeast corner of schoolhouse; iron post stamped "766"-----	765.805
Marsh Creek and Mount Diablo Creek, divide between, just east of gate; iron post stamped "955"-----	955.069
Clayton, intersection of Nortonville and Marsh Creek roads with Main street, near guidepost; iron post stamped "395"-----	395.105

FROM BOUNDARY OF CONTRA COSTA AND ALAMEDA COUNTIES NORTHWEST TO DANVILLE.

Danville; railroad track south of station-----	370.5
Danville, in brick foundation of schoolhouse; bronze tablet stamped "365"-----	364.495

BYRON QUADRANGLE.

NEROLY, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO BRENTWOOD; THENCE SOUTH ALONG ROAD, TO LIVERMORE.

Brentwood, west of track at north end of platform, across tracks from store; iron post stamped "77"-----	76.890
Vascoe schoolhouse, opposite, on west side of road; iron post stamped "401"-----	401.377
Vascoe divide, east side of road; iron post stamped "970"-----	969.767

STOCKTON QUADRANGLE.^a

LATHROP, SOUTHWESTERLY ALONG SOUTHERN PACIFIC RAILROAD, TO MIDWAY.

Lathrop, 3.5 miles southwest of, 30 feet southwest of milepost 79, south side of track; iron post stamped "17.638 B"-----	17.576
Milepost 75, 10 feet north of, south side of track; iron post stamped "22.181 B"-----	22.119
Banta station, in front of freight house; top of rail-----	26.8
Milepost 72, 18 feet north of, iron post stamped "53.927 B"-----	53.865
Ellis, 1 mile west of, 4 feet north of milepost 69; iron post stamped "102.656 B"-----	102.594

ELLIS, SOUTH TO DAY'S FARM.

Ellis, 4.8 miles south of, 1,500 feet west of, at northwest angle of road to Ellis; iron post stamped "265 B"-----	264.068
--	---------

TESLA QUADRANGLE.

MIDWAY, WESTERLY ALONG SOUTHERN PACIFIC RAILROAD, TO LIVERMORE.

Midway station, 5 feet east of milepost 64; iron post stamped "351.341 B"-----	351.280
Milepost 60, 300 feet west of, south side of track, at road crossing; iron post stamped "539.602 B"-----	539.540
Altamont, 5 feet west of milepost 56; iron post stamped "739.899 B"-----	739.837
Milepost 52, 5 feet north of; iron post stamped "575.749 B"-----	575.687

^a Additional elevations on Stockton quadrangle are given on precise line (p. 15) and on primary line east of Stockton (p. 120).

PRIMARY LEVELING.

125

LIVERMORE, EASTERLY VIA SOUTHERN PACIFIC RAILROAD, TO 5 MILES EAST OF CARNEGIE;
THENCE ALONG HIGHWAYS, TO DAY'S FARM.

	Feet.
T. 3 S., R. 2 E., northwest corner of sec. 23, at junction of Tesla and Mocho roads, east angle; iron post stamped "601. B"-----	601.117
T. 3 S., R. 2 E., north side of sec. 24, south of road, nearly opposite large farm gate; iron post stamped "688 B"-----	688.046
T. 3 S., R. 3 E., near center sec. 20, 6.5 miles west of Tesla; 0.25 mile west of Al Allen's house, south of road, near fence; iron post stamped "B 832"-----	831.765
T. 3 S., R. 3 E., sec 27, 3.5 miles west of Tesla, half way between Old Richards mine and house, north of road; iron post stamped "B 1319"-----	1,319.400
Tesla, 25 feet east of entrance to Tesla Hotel; iron post stamped "No. 11, 886 B"-----	885.053
Tesla, in brick steps of Tesla Hotel; aluminum tablet stamped "882 B"-----	881.242
T. 3 S., R. 4 E., south side of sec. 29, 2.9 miles east of Tesla, near San Joaquin and Alameda County line, 20 feet south of track, 200 feet east of railroad culvert; iron post stamped "700 B"-----	699.236
T. 3 S., R. 4 E., sec 35, 1.1 miles east of Carnegie, 20 feet south of track, 5 feet north of road, opposite two old shanties; iron post stamped "540 B"-----	539.137

LIVERMORE, SOUTHEAST VIA ARROYO MOCHO, TO CORNER TS. 4 AND 5 S., R. 4 E.; THENCE
ALONG TRACY TRAIL, TO 1.1 MILES EAST OF CARNEGIE.

T. 3 S., R. 2 E., south side of sec. 36, 6.2 miles east of Livermore, near fence corner, at 48-inch oak tree, north of road; iron post stamped "784 B"-----	783.890
T. 4 S., R. 3 E., northeast quarter of sec. 8, Mud Springs, 50 feet south of water trough, west side of road, at fence; iron post stamped "1412 B"-----	1,412.136
T. 4 S., R. 3 E., east side of sec. 13, 5.4 miles southeast of Mud Springs, at Fox ranch, at gate across county road, 5 feet west of road at township line; iron post stamped "2428 B 2 S"-----	2,427.978
T. 5 S., R. 4 E., north side, sec. 5, 600 feet south of Jones house, 20 feet west of road; iron post stamped "2415 B"-----	2,415.181
T. 4 S., R. 4 E., south side of sec. 10, 3.8 miles north of Corral Hollow Creek, on Hog Back at very rocky point, 6 feet east of trail; iron post stamped "2233 B"-----	2,233.149

PLEASANTON QUADRANGLE.

LIVERMORE, WEST ALONG ROAD, TO DUBLIN; THENCE NORTHWEST TO CONTRA COSTA-ALAMEDA COUNTY LINE.

Livermore, in front of station; top of rail, main track-----	482.
Tassajero, junction with road to, at northwest corner; iron post stamped "346"-----	345.877
Tassajero Valley, about 2.5 miles north of main road, on west side of Tassajero road and 2.2 feet east of monument on county line between Contra Costa and Alameda counties; iron post stamped "485" (on a spur from preceding bench mark)-----	485.060
Dublin, intersection of center line of San Ramon road and south line of main road; iron post stamped "367"-----	366.617
Contra Costa and Alameda counties, boundary line, 2.3 feet west of county-line monument, on east side of road; iron post stamped "425"-----	424.770

LIVERMORE, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO PLEASANTON; THENCE SOUTH TO SUNOL; THENCE WEST TO NILES; THENCE SOUTH TO IRVINGTON.

	Feet.
Livermore, 300 feet east of station, near eucalyptus tree 18 inches in diameter; iron post stamped "486 B"-----	486.153
Livermore, Farmers' Union Building, southeast corner of block north of Southern Pacific track; bronze tablet stamped "488"-----	487.496
Milepost 45, 225 feet west of, north side of track; iron post stamped "381.911 B"-----	381.873
Pleasanton, 4 feet east of milepost 42; iron post stamped "360.736 B"-----	360.723
Milepost 39, 5 feet north of; iron post stamped "297.496 B"-----	297.507
Milepost 36, 150 feet west of, on south side of track near fence; iron post stamped "227 B"-----	227.157
Farwell station, 200 feet east of; iron post stamped "167.099 B"---	167.158
Niles, in school yard, 6 feet north of west gate; iron post stamped "76.408 B"-----	76.491
Irvington, 100 feet east of Irvington Hotel, at northeast corner of fence; iron post stamped "71.631 B"-----	71.743

IRVINGTON, NORTHEAST ALONG ROAD TO LIVERMORE.

Mission Pass, 5 feet east of electric-light pole No. 3803; iron post stamped "649.890 B"-----	649.923
Sunol, 2 miles east of, 40 feet from bridge, north side of road; iron post stamped "336.986 B"-----	336.940
Livermore, 5 miles southwest of, opposite old barn on east side of road, 10 feet west of oak on north side of road; iron post stamped "609.917 B"-----	609.791

SAN JOSE QUADRANGLE.

IRVINGTON, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO SAN JOSE.

Milepost 37; iron post stamped "46.563 B"-----	46.703
Milepost 40, 350 feet south of, opposite small bridge, east side of track; iron post stamped "11.301 B"-----	11.465
Milepost 43, 475 feet south of, at highway crossing, on west side of track; iron post stamped "37.505 B"-----	37.694
Milepost 46, 50 feet east of, east side of track; iron post stamped "69.117 B"-----	69.330

AT SAN JOSE.

San Jose, 150 feet east of Southern Pacific Company's standard-gage station; log bolt in circular base of iron water stand about 2 feet in diameter ^a -----	91.76
San Jose, at southwest corner of St. James and First streets, opposite St. James square, set horizontally in west end of lower edge of stone banister on north side of entrance to Santa Clara County Hall of Records; aluminum tablet stamped "98 S F"-----	98.317

^a This is a bench mark of the United States Coast and Geodetic Survey, but the elevation (given as 90.555 feet) was not accepted, as Mr. Ward's levels brought from Redwood are in a closed circuit.

PRIMARY LEVELING.

127

NEW ALMADEN QUADRANGLE.

SAN JOSE, SOUTHWEST ALONG NARROW-GAGE RAILROAD, TO LOS GATOS.

	Feet.
Los Gatos, opposite station, in west corner of yard around Hotel Lindon on Santa Cruz avenue; iron post stamped "412 S F"-----	412. 012

SANTA CRUZ 30' QUADRANGLE.

LOS GATOS, SOUTHWEST ALONG ROAD, TO BOULDER CREEK.

Montezuma schoolhouse, 45 feet north of, in corner of yard; iron post stamped "1459 S F"-----	1, 459. 074
T. 9 S., R. 2 W., at center of northeast quarter of sec. 12, 30 feet south of Brown schoolhouse; iron post stamped "2135 S F"-----	2, 135. 031
Bear Creek schoolhouse, 10 feet north of northwest corner of; iron post stamped "735 S F"-----	735. 042
Boulder Creek, at east side of fountain in "Boulder Creek House" yard; iron post stamped "484 S F"-----	484. 009

BOULDER CREEK, NORTHWEST ALONG WAGON ROAD AND TRAIL, TO IVERSON'S RANCH.

Sequoia schoolhouse, in yard at south side of stile; iron post stamped "916 S F"-----	916. 025
Butano Ridge, at end of wagon road; iron post stamped "2319 S F"-----	2, 318. 980
Iverson's ranch, at junction of Boulder Creek and Pescadero Creek trail with road to La Honda, west side of road; iron post stamped "422 S F"-----	421. 999

LA HONDA, NORTH TO DIVIDE BETWEEN ARROYA HONDA AND SANTA CLARA VALLEYS.

La Honda, north side of front entrance to hotel at steps; iron post stamped "403 S F"-----	403. 021
Summit of divide, between Arroya Honda and Santa Clara valleys, in forks of road at northwest corner of saloon; iron post stamped "1680 S F"-----	1, 679. 450

BROWN SCHOOLHOUSE, NORTH ALONG ROAD, TO SEC. 36, T. 8 S., R. 2 W.

T. 8 S., R. 2 W., sec. 36, at junction of road leading north with reservoir road, near county line, in Mrs. Gist's yard, at north side of gate; iron post stamped "2256 S F"-----	2, 255. 959
---	-------------

BOULDER CREEK, SOUTH ALONG ROAD, TO SANTA CRUZ.

Ben Lomond, 10 feet from northwest corner of office of Rowardennen Hotel, in yard; iron post stamped "344 S F"-----	344. 012
Felton schoolhouse, midway between two front entrances; iron post stamped "286 S F"-----	285. 954
Santa Cruz, in left base of arch at entrance to court-house; aluminum tablet stamped "18 S F"-----	18. 017

PALO ALTO 15' (SANTA CRUZ 30') QUADRANGLE.

IVERSON'S RANCH, WEST ALONG PIPE LINE, TO TAR CREEK.

T. 8 S., R. 4 W., east side of sec. 1, 0.2 mile west of Tar Creek, at right of pipe-line trail, in heavy timber; iron post stamped "420 S F"-----	420. 035
---	----------

IVERSON'S RANCH, NORTH TO ALPINE HOUSE; THENCE WEST TO LA HONDA.

	Feet.
Alpine schoolhouse, 0.25 mile west of, in triangle between roads at junction of Mayfield and La Honda road with Page Mill road; iron post stamped "1590 S F"-----	1,590.009

SANTA CLARA-ARROYA HONDA DIVIDE, NORTHEAST TO PALO ALTO.

Portola, junction with road to, at corner of fence surrounding E. K. Preston's house, on south side of road; iron post stamped "388 S F"-----	388.010
Leland Stanford Junior University, on south side of inner quadrangle, set next to wall on south side of west building, on top of stone ledge on west side of cellar steps; aluminum tablet stamped "89 S F"-----	88.577

REDWOOD, SOUTHEAST ALONG COUNTY ROAD, TO SAN JOSE.

Redwood, at northeast corner of Sixth and Arguello streets, opposite Southern Pacific Company's station, top of fire hydrant (C. & G. S. bench mark given as 15.412 feet above mean lower low water)----	12.312
Palo Alto, at northeast corner of station, on iron rail surrounding walk, which rail is set in brick and cement (established by the Coast and Geodetic Survey and the elevation given as 63.327)-----	63.360

CARQUINEZ, GEYSERVILLE, GUERNEVILLE, NAPA, SANTA ROSA, AND TAMALPAIS QUADRANGLES.

MARIN, NAPA, SOLANO, AND SONOMA COUNTIES.

The elevations in the following list are based mostly on a bench mark of the Coast and Geodetic Survey at Benicia Arsenal, the upper surface of a $\frac{5}{8}$ -inch iron bolt driven in a hole drilled horizontally in the southwest face of a sandstone rock at top of ledge near high-water mark at Army Point just south of railroad and east of wharf. The elevation of this is accepted as 5.980 feet above mean sea level. For additional elevations on Carquinez and Napa quadrangles refer to list by precise leveling from Benecia (p. 13).

The leveling on Carquinez and Napa was done partly in 1896 under Mr. L. C. Fletcher, topographer, by Mr. J. A. Vogelsson, levelman; partly in 1899 and 1900, under Mr. Fletcher by Mr. L. D. Ryus, levelman; and partly in 1906 under Mr. E. P. Davis, assistant topographer, by Mr. C. L. Nelson. The remainder of work herein listed was done in 1899 and 1900 under Mr. Fletcher by Mr. Ryus.

CARQUINEZ 15' (NAPA 30') QUADRANGLE.

SELBY, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO MARTINEZ.

	Feet.
Port Costa, in middle of concrete column of Karquinez Market Building on Main street, near station, opposite Burlington Hotel; bronze tablet stamped "17"-----	16.787

	Feet.
Martinez (U. S. Coast and Geodetic Survey bench mark), in brick front wall of the county building between the windows of the county clerk's and the auditor's offices; copper bolt marked on the face with the letters "U.S.C. & G.S." cut into angles of a cross (elevation accepted as given by the U. S. Coast and Geodetic Survey above half-tide level at Army Point, near Benicia)-----	27, 090
Martinez court-house, U. S. Geological Survey bench mark at same place as above; bronze tablet stamped "27"-----	27. 082

BENICIA, NORTHWEST TO VALLEJO.

Benicia arsenal, on brass cannon with muzzle down, used as a guard post at arsenal gate, marked "58"-----	58. 098
Benicia schoolhouse, in southeast corner of foundation, east face, 2.5 feet above ground; bronze tablet stamped "35"-----	34. 698
Vallejo and Sulphur Springs road, intersection with Vallejo-Benicia road, 3 miles west of Benicia, near corner of fence around Miller's ranch; iron post stamped "27 feet"-----	27. 581
Vallejo, Sacramento street side of Bernard House, east of entrance, and 4 feet above sidewalk; bronze tablet stamped "44"-----	43. 920

THREEMILE HOUSE, EAST TO LAKE CHABOT.

Lake Chabot, 0.5 mile east of, on Sulphur Springs road, 2.5 miles east of Threemile House, at bend of road between American Canyon road and cut-off road to Vallejo, at southwest corner of right-angle turn in road; iron post stamped "114"-----	113. 678
--	----------

NAPA JUNCTION, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO FAIRFIELD.

Creston station, on main east and west road north of railroad, on south side just east of northeast fence corner; iron post stamped "306"-----	306. 272
Cordelia, intersection of Main street with road to Benicia, north of railroad, on south line of Main street near western side of Benicia road; iron post stamped "29 feet"-----	28. 741
Fairfield court-house, 7.5 feet below bottom of stone ledge to first window of auditor's office, left of main entrance; bronze tablet stamped "15"-----	15. 170

CORDELIA, NORTH UP GREEN VALLEY ROAD, TO NIGHTINGALE'S STONE HOUSE.

Nightingale's stone house, 3 miles from, in Green Valley, at north-west angle of road; iron post stamped "39"-----	39. 171
--	---------

CORDELIA, SOUTH ALONG ROAD AND SOUTHERN PACIFIC RAILROAD, TO BENICIA.

Cook's ranch, east side of road just north of bridge; iron post stamped "21"-----	20. 702
Goodyear station, 1.5 miles north of schoolhouse, on west side of road south of stile; iron post stamped "17"-----	17. 427

FAIRFIELD, WEST ALONG ROAD TO ROCKVILLE; THENCE SOUTH TO CORDELIA.

Rockville, northeast corner of crossroads, within fence corner, opposite saloon; iron post stamped "60 B"-----	60. 144
--	---------

POINT 2.8 MILES WEST OF FAIRFIELD, SOUTH TO ROAD FORK 0.5 MILE WEST OF PERRY'S HOUSE.

	Feet.
Perry's house, 0.5 mile west of; at road fork east of lane, south side of main road, in field; iron post stamped "25 B"-----	25.094

NAPA 30' QUADRANGLE.

SOBRANTE, NORTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO SELBY.

Rodeo, 180 feet west of station, south side of track, in sandstone face of railroad cut; copper bolt stamped "U.S.G.S. B.M."-----	12.665
---	--------

VALLEJO, NORTH ALONG SOUTHERN PACIFIC RAILROAD, TO NAPA JUNCTION.

Napa Junction, across tracks from hotel, near fence, on line between corral and section house, near gate leading to county road; iron post stamped "70"-----	69.942
--	--------

ROCKVILLE, NORTHEAST ALONG ROAD, TO SCARLETT'S HOUSE NEAR MANKA.

Rockville, 2.8 miles northeast of, east side of road forks, 350 feet northeast of Sam Scarlett's house, in orchard; iron post stamped "88 B"-----	88.137
---	--------

FAIRFIELD, NORTH ALONG COUNTY ROAD, TO LAGUNA CREEK; THENCE EAST TO VACAVILLE.

Tolenas Springs, fork of road, south side of gate; iron post stamped "205"-----	205.323
---	---------

C. H. Steinmetz orchard, 400 feet east of southwest corner, in solid sandstone ledge north of bend in road; copper bolt stamped "U.S. G.S. 280 Ft. B.M."-----	279.658
---	---------

VACAVILLE, WEST AND NORTH ALONG VACA AND PLEASANT VALLEY, TO WINTERS.

Alamo school, 30 feet northwest of woodshed, in grounds; iron post stamped "266"-----	265.555
---	---------

Oakdale school, northwest corner of grounds; iron post stamped "426"-----	426.308
---	---------

Pleasant Valley school, southeast corner of grounds; iron post stamped "257"-----	256.689
---	---------

Winters, 4.5 miles southwest of, north side of road, 300 feet west of house of old Finch place; iron post stamped "169"-----	169.328
--	---------

POINT 2.5 MILES WEST TO POINT 4.5 MILES WEST OF WINTERS, ON PUTAH CREEK.

Winters, 4.5 miles west of, in northwest corner of stone culvert over ravine at old Seely place; copper bolt stamped "U. S. G. S. 179 Feet B. M."-----	178.505
--	---------

SAGE CREEK, AT MOUTH OF CHILES CREEK, SEC. 6, T. 7 N., R. 4 W.

Sage Creek, at mouth of Chiles Creek, west side of bridge, in ledge of rock forming north abutment; copper bolt stamped "U. S. G. S. 280 Feet B. M."-----	279.516
---	---------

ST. HELENA, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO NAPA JUNCTION.

St. Helena, 0.5 mile south of; top of rail at switch to winery-----	236.0
---	-------

Ink's house, 200 feet southeast of, 15 feet east of track, on right of way, 200 feet south of main road crossing; iron post stamped "176"-----	175.656
--	---------

	Feet.
Oakville, 100 feet west and 50 feet south of station, at west side of grounds against fence; iron post stamped "153"-----	153.129
Yountville, 1 mile southwest of, in brick flue of electric-light plant at Veterans' Home, 5 feet above ground; bronze tablet stamped "165"-----	165.012
Magnolia; top of rail at switch-----	90.0
Trubody, in front of station; top of rail-----	84.0
Oak Knoll school, 30 feet northwest of, in grounds next to fence; iron post stamped "100"-----	99.558
Oak Knoll, in front of station; top of rail-----	106.0
Union, opposite station, west side of road at fence; iron post stamped "75"-----	75.449
Napa, in front of station; top of rail-----	15.1
Napa, in wall at northeast corner of court-house, facing Broom street, 1 foot south of corner stone, 3.7 feet above walk; bronze tablet stamped "20"-----	20.469
Lone Tree farm, in front of station; top of rail-----	7.1
Thompson; top of rail at switch-----	7.1
Thompson station, east of railroad, south end of switch, near switch block; iron post stamped "9"-----	8.972
CORDELIA, NORTH ALONG COUNTY ROAD, TO J. W. REAM'S RANCH ABOUT 1 MILE NORTH OF COUNTY LINE.	
T. 6 N., R. 3 W., about northeast corner of sec. 36 (in Chimiles unsectionized grant), about 1 mile north of county line, north side of road, 125 feet east of gate to J. W. Ream's house; iron post stamped "228"-----	227.962
MOUTH OF SODA CREEK, SOUTH UP CAPELL VALLEY, TO CAPELL.	
Burrow's house, 300 feet south of, in ledge in sidehill, south side of ravine and west of road; copper bolt marked "U. S. G. S. 641 B. M."-----	641.059
Capell, 1,200 feet west of post-office, 300 feet west of forks of road, in rocky bluff; copper bolt stamped "U. S. G. S. 872 Ft. B. M."-----	872.188
ST. HELENA, SOUTH 1 MILE ALONG COUNTY ROAD, TO MOUTH OF SULPHUR SPRINGS CANYON.	
St. Helena, 1 mile south of, north side of road, against fence at center of curve, 600 feet west of northwest corner of cemetery; iron post stamped "299"-----	299.033
YOUNTVILLE, NORTHEAST 2 MILES ALONG CAYMUS YAJOME GRANT BOUNDARY ROAD, TO CORNER.	
Yountville, 2 miles northeast of, against fence on north side of road, 300 feet from forks; iron post stamped "142"-----	141.847
NAPA, NORTHEAST ALONG COUNTY ROAD, TO CEDAR KNOLL FARM, TULUCAY GRANT.	
Cedar Knoll farm, in stone gatepost at entrance; bronze tablet stamped "155"-----	155.081
NAPA, EAST ALONG ROAD VIA INSANE ASYLUM, TO HARMONY SCHOOL.	
Napa Insane Asylum, 1 mile east of; chisel mark on top of Coast and Geodetic Survey monument-----	123.56
Harmony school, 100 feet south of, 4 feet from fence; iron post stamped "121"-----	121.091

NAPA, WESTERLY ALONG ROAD VIA BROWN VALLEY, TO VINEYARD.

	Feet.
Huichica school, west side of grounds, 4 feet from fence, at west side of ravine; iron post stamped "217"-----	217.340
Vineyard, north end of station; top of rail-----	49.0

VINEYARD, NORTHWEST ALONG CALIFORNIA AND NORTHWESTERN RAILWAY, TO AGUA CALIENTE.

Sonoma, at First and Napa streets, in side wall of F. Deloring & Co.'s store, 2.7 feet above sidewalk and 5 feet north of rear door; bronze tablet stamped "83"-----	82.565
Sonoma, in front of station; top of rail-----	97.0
Caliente, in front of station; top of rail-----	130.0

SONOMA, NORTHEAST TO SEC. 31, T. 6 N., R. 5 W.

Sonoma, 2 miles east of, in ledge 4 feet high projecting from bank, 4 feet east of bank of ravine, 100 feet north and 150 feet west of road; aluminum tablet stamped "U.S.G.S. 232 Ft. B.M."-----	231.759
---	---------

VINEYARD, SOUTH ALONG CALIFORNIA NORTHWESTERN RAILWAY, TO PETALUMA CREEK.

Junction of Southern Pacific and California Northwestern railroads; top of rail-----	12.
McGill, 600 feet northeast of, 400 feet northeast of bunk house; iron post stamped "7"-----	6.654
Fairville, 1 mile west of, on north bank of Tolay Creek, at foot of hill, opposite dairy buildings; iron post stamped "40"-----	39.676
Sears Point, 150 feet west of, at north side of road, opposite drawbridge; iron post stamped "13"-----	13.292
Reclamation, 2 miles east of, in levee 100 feet east of old railroad grade, at locks; iron post stamped "6"-----	5.121
Black Point, at drawbridge over Petaluma Creek, at southwest corner of bridge tender's house; iron T rail set in ground (U.S.C. & G.S. B.M. 14,581 above lower low tide)-----	10.623

SONOMA, SOUTHWEST, TO WETMORE SCHOOLHOUSE.

Sonoma, 2.5 miles southwest of, Watmaugh schoolhouse, at southwest corner of grounds, 20 feet from south fence; iron post stamped "68"-----	67.685
---	--------

SANTA ROSA QUADRANGLE.

CALIENTE, NORTHWEST ALONG CALIFORNIA AND NORTHWESTERN RAILWAY, TO GLEN ELLEN; THENCE NORTHWEST ALONG COUNTY ROAD, TO SANTA ROSA; THENCE NORTH TO GWYN CORNER.

Sonoma, in front of station; top of rail-----	97.0
Caliente, in front of station; top of rail-----	130.0
Yulupa station, at junction with Southern Pacific Railroad; top of rail-----	165.0
Eldridge, in front of station; top of rail-----	191.0
California Home for Feeble Minded, in granite capstone at south end of entrance to Bentley Hall; bronze tablet stamped "234"-----	234.390
Glen Ellen, in front of station; top of rail-----	227.0
Dunbar school, 25 feet north and 100 feet west of, in ground near fence; iron post stamped "350"-----	350.415
Wildwood, in front of station; top of rail-----	408.0

	Feet.
Kenwood public school, northeast corner of grounds; iron post stamped "412"-----	412. 335
Melitta, 125 feet east of post-office, northeast side of road, 125 feet north of bridge; iron post stamped "319"-----	319. 211
Santa Rosa, 2 miles east of, 150 feet west of pumping station, south of road; iron post stamped "203"-----	202. 947
Santa Rosa, in north wall of court-house, 2.5 feet above pavement, at west side of steps leading to second floor, 23 feet from entrance on Fourth street side; bronze tablet stamped "165"-----	164. 977

SANTA ROSA, SOUTHEAST ALONG CALIFORNIA NORTHWESTERN RAILWAY, TO PETALUMA.

Wilfred, 2 miles west of, 300 feet east of Santa Rosa and Petaluma public road, opposite road to Cotata Land Company's pasture, at northeast corner of vineyard, in ledge on side of hill; aluminum tablet stamped "215"-----	214. 914
Cotata, in front of station; top of rail-----	115.
Cotata, 1,000 feet south of station, 300 feet south of warehouse, west side of track, against fence at edge of right of way; iron post stamped "117"-----	117. 466
Ely, halfway between north and south end of siding, east side of "railroad right of way; iron post stamped "39"-----	39. 282
Corona, at road crossing; top of rail-----	31.

PETALUMA, SOUTHEASTERLY ALONG CALIFORNIA AND NORTHWESTERN RAILWAY, TO LAKEVILLE; THENCE NORTHEAST ALONG COUNTY ROADS TO WATMAUGH SCHOOLHOUSE.

Lakeville schoolhouse, on schoolhouse grounds 150 feet north of building, 125 feet east of northwest corner; iron post stamped "53"-----	53. 903
Eureka schoolhouse, at northwest corner of school yard; iron post stamped "277"-----	276. 436

GWYNS CORNERS, WEST ALONG CALIFORNIA NORTHWESTERN RAILWAY, TO FORESTVILLE.

Olivet, in front of station; top of rail-----	76.
Fulton, 4 miles west of, in curve, 0.5 mile north of bridge over Laguna Creek, north of track, against fence; iron post stamped "70"-----	69. 937
Trenton, in front of station; top of rail-----	50.
Forestville, 150 feet west of station, 90 feet south of main track, 30 feet north of siding; iron post stamped "58"-----	57. 886

RUSSIAN RIVER, VIA NORTHWESTERN PACIFIC RAILROAD, TO SAN GERONIMO.

Russian River station, 3.5 miles south of, 3.5 miles north of Occidental, 200 feet north of bridge over Howard Creek, 100 feet north of point of hill, west of track, in projecting ledge of rock; aluminum tablet stamped "184"-----	184. 116
Occidental, in front of station; top of rail-----	570. 3
Occidental, 0.25 mile south of, 400 feet west of Meeker schoolhouse, east of track, at point of hill; iron post stamped "562"-----	562. 188
Freestone, in front of station; top of rail-----	220.
Freestone, 0.5 mile east of, 0.25 mile east of Freestone district school north side of Sebastopol road, south of house, in orchard against fence; iron post stamped "290"-----	290. 202
Bodega Roads, in front of station; top of rail-----	175.
Valley Ford, in front of station; top of rail-----	43.

	Feet.
Valley Ford, 1.5 miles southeast of, 500 feet south of creek at curve, on west side of Petaluma and Valley Ford road, near fence; iron post stamped "39"-----	38.945
Valley Ford, 2 miles southwest of, dairy at point of hill on Valley Ford and Tomales road, 500 feet west of, west side of Northwestern Pacific track, at south side of road crossing; iron post stamped "138"-----	138.595
Griffin, in front of station; top of rail-----	69.
Tomales, 2 miles northeast of, 0.5 mile north of Tomales tunnel, at point of hill east of track, at north end of cut; iron post stamped "118"-----	117.857
Tomales, 500 feet south of station, on bank opposite north edge of right of way; iron post stamped "113"-----	113.697
Tomales, 2.25 miles south of, east side of road at point of hill opposite mouth of canyon across bay or channel of tide flats, set in rock bluff; aluminum tablet stamped "5"-----	5.110
Hamlet, in front of station; top of rail-----	7.
Marshall, 3 miles north of, 250 feet south of milepost 44, 50 feet south of small bridge, at east side of railroad right of way, in top of projecting ledge of rock; aluminum tablet stamped "9"-----	9.113
Marshall, 300 feet east of store and post-office, 200 feet north of Marshall Hotel, east side of siding on creek bank; iron post stamped "8"-----	8.637
Fisherman, in front of station; top of rail-----	5.0
Point Reyes, 500 feet north of station, 50 feet east of railroad at crossing, north side of public road; iron post stamped "29"-----	29.503
Point Reyes, in front of station; top of rail-----	30.
Point Reyes, 2.25 miles northeast of north bend, in front of Mr. Galger's house, 300 feet west of front gate, on north side of track, against hedge fence; iron post stamped "46"-----	46.832
Tocaloma, 400 feet north of station, 150 feet west of Paper Mill Creek, at south end of cut in bank, west of railroad track; iron post stamped "86"-----	86.068
Tocaloma, in front of station; top of rail-----	86.
Taylorville, in front of paper mill; top of rail-----	121.
Camp Taylor, in front of station; top of rail-----	137.
Camp Taylor, 300 feet north of bridge at Camp Taylor Hotel, 150 feet from Paper Mill Creek, 100 feet west of clubhouse, on east side of track; iron post stamped "137"-----	137.984
San Geronimo, 0.25 mile north of, at north end of small cut in point of hill, east of railroad against fence, on west side of road; iron post stamped "285"-----	285.970
San Geronimo, in front of station; top of rail-----	305.
SAN RAFAEL, NORTH ALONG SAN FRANCISCO AND NORTH PACIFIC RAILROAD, TO PETALUMA.	
Novata, 600 feet south of, 600 feet north of Creamery, 100 feet south of switch at south end of siding, against fence at line of railroad right of way, west of track; iron post stamped "16"-----	17.088
Novata, in front of station; top of rail-----	11.0
Burdell, 125 feet north of station, 150 feet east of rock bluff; iron post stamped "7"-----	7.995
Petaluma, 3 miles south of, at point of hill 200 feet west of track, at foot of small knoll 30 feet west of marsh, 100 feet east of 4-foot rock projecting above ground; iron post stamped "5"-----	6.298

BODEGA STATION, VIA COUNTY ROAD, TO BODEGA.

	Feet.
Bodega station, 0.25 mile north of, north of intersection of Valley Fork road with Freestone and Bodega road, against fence, at Bodega road corner; iron post stamped "169"-----	169.318
Bodega schoolhouse, against division fence between schoolhouse and church, 30 feet southwest of building; iron post stamped "145"---	145.405

POINT REYES STATION, VIA COUNTY ROAD, TO REGALLOS RANCH.

Point Reyes, 1.25 miles south of, on Olema road 400 feet east of slough, south side of road; iron post stamped "14"-----	14.726
Inverness, 1 mile west of, at foot of hill known as "Light-house Grade," against fence north of road, at gate; iron post stamped "12"-----	12.843
Inverness, 3 miles northwest of, 0.5 mile west of summit of hill, opposite gate to Mr. Regallos's ranch, south side of road; iron post stamped "202"-----	202.063

NOVATA, WEST ALONG COUNTY ROAD (3-MILE SPUR LINE).

Novata, 3 miles west of, in open space opposite and 1,000 feet south of point of hill, at south side of road, against fence; iron post stamped "108"-----	108.707
---	---------

PETALUMA, VIA COUNTY ROAD, TO WILSON AND MARIN SCHOOLS.

Petaluma, City Hall, in wall of main building, 2 feet from north-east corner, facing Kentucky street, 1.9 feet above pavement; bronze tablet stamped "17"-----	16.700
Wilson schoolhouse, at southeast corner of school yard; iron post stamped "81"-----	80.664
Petaluma, 3 miles west of, 0.5 mile west of Marin schoolhouse, 0.5 mile north of public road running over ridge west from Petaluma, at foot of hill south side of canyon, 150 feet west of fence on township line, in sec. 1, T. 4, R. 8 W.; iron post stamped "248"-----	247.628

ELY, WEST ALONG COUNTY ROADS, TO LIBERTY SCHOOL.

Ely, 2.5 miles west of, Liberty schoolhouse, at south side of school grounds, opposite forks of road, opposite cemetery; iron post stamped "103"-----	102.765
---	---------

BELLVIEW STATION, WEST ALONG COUNTY ROAD, TO TODD SCHOOL; THENCE SOUTH TO STONY POINT SCHOOL.

Todd district schoolhouse, at front fence, 20 feet south of gate; iron post stamped "92"-----	91.775
Stony Point district school, 50 feet south of building, set in ground against fence; iron post stamped "96"-----	96.217

SANTA ROSA, VIA CALIFORNIA NORTHWESTERN RAILROAD, TO SEBASTOPOL.

Santa Rosa, 3 miles west of, Wrights schoolhouse, at northwest corner of grounds; iron post stamped "93"-----	93.075
Sebastopol, 600 feet north of, opposite large warehouse, against fence, east of track; iron post stamped "63"-----	63.481

TAMALPAIS QUADRANGLE.

SAN GERONIMO, SOUTHEAST ALONG NORTH PACIFIC COAST RAILROAD, TO SAN RAFAEL.

	Feet.
Fairfax, in front of station; top of rail-----	109. 0
San Rafael, North Shore Railway station, foot of northeast corner of shed over track, northeast corner of cap (Coast and Goedetic Survey bench mark, 12.175 feet above mean lower low tide)-----	7. 799

GEYSERVILLE QUADRANGLE.

GWYNS CORNERS, NORTHEASTERLY, TO CALISTOGA; THENCE SOUTHEAST TO ST. HELENA.

Burk's sanitarium, 30 feet west of entrance, north side of road; iron post stamped "210"-----	210. 350
Tarwater school, 0.1 mile southwest of, at west side of road forks; iron post stamped "490"-----	490. 118
Tarwater Hill summit, east of road at fence in front of old cabin; iron post stamped "1050"-----	1, 050. 292
Franz Valley school, 1 mile northeast of, south of road at summit on county line; iron post stamped "970"-----	970. 456
Calistoga, 25 feet west of southwest corner of Lincoln avenue and Main street, in sidewalk; iron post stamped "354"-----	353. 679
Calistoga, 4 miles southeast of, in center of cap at east side of stone bridge over Ritchie Creek; bronze tablet stamped "338"-----	338. 389

FORESTVILLE, NORTHWEST ALONG CALIFORNIA NORTHERN RAILWAY, TO HILTON; THENCE WEST TO GUERNEVILLE.

Mera Bell Park; rail at-----	59.
Camp Six, in front of station; top of rail-----	66.
Hilton post-office, in front of; top of rail-----	66.
Hilton post-office and station, 300 feet southwest of trestle, foot of T. P. Brown's orchard, at fence; iron post stamped "65"-----	65. 095
Korbell, in front of station; top of rail-----	62.

GUERNEVILLE QUADRANGLE.

GUERNEVILLE, SOUTHWEST ALONG CALIFORNIA NORTHWESTERN RAILWAY, TO RUSSIAN RIVER.

Guerneville, 0.5 mile west of, 30 feet west of road, 50 feet from railroad, south of crossing 300 feet, at point of hill at bend of road; iron post stamped "46"-----	46. 540
Guerneville Park, in front of station; top of rail-----	44.
Russian River, in front of station; top of rail-----	38.

RUSSIAN RIVER, WEST ALONG NORTH SHORE RAILROAD, TO KIDD CREEK STATION.

Mesa Grand, in front of station; top of rail-----	40.
Moscow Cottage; top of rail-----	64.
Duncan's mill, west of railroad company's hotel, 1,500 feet southwest of roundhouse, at point of hill, 100 feet west of county road, on side of hill, in projecting ledge of rock; aluminum tablet stamped "44"-----	44. 051
Kidd Creek, 800 feet south of, 600 feet south of mouth of Kidd Creek, in side of hill west of track, in projecting ledge of rock; aluminum tablet stamped "53"-----	53. 113

DUNCAN'S MILL, VIA CALIFORNIA NORTHWESTERN RAILWAY AND COUNTY ROAD, TO JENNER GULCH.

	Feet.
Duncan's mill, 3 miles west of, mouth of Willow Creek, 200 feet west of forks of wagon road, 125 feet northeast of track; iron post stamped "23"-----	23. 228
Markhams post-office, 3 miles west of, 400 feet from Russian River, 100 feet north and 20 feet above wagon road, west side of Jenner Gulch, in ledge of rock projecting from hillside; aluminum tablet stamped "56"-----	56. 009

BODEGA, WEST 3 MILES.

Bodega, 3 miles west of, 1,500 feet east of Mrs. Quinlan's house, 75 feet north of road opposite gulch; iron post stamped "88"-----	87. 946
---	---------

RIO VISTA AND VACAVILLE QUADRANGLES.

CONTRA COSTA, SACRAMENTO, SAN JOAQUIN, AND SOLANO COUNTIES.

The elevations in the following list are based upon the precise-level line Benicia to Sacramento, which crosses Vacaville quadrangle and are checked upon a gage bench mark at Black Diamond landing.

The leveling on Antioch, Courtland, and Rio Vista quadrangles was done partly in 1905 under Mr. R. B. Marshall, geographer, by Mr. R. A. Farmer, topographer, and partly in 1906 by C. L. Nelson, and some leveling on Antioch quadrangle was done in 1896 under Mr. L. C. Fletcher by Mr. J. A. Vogelson. The leveling on Vacaville quadrangle was done under Mr. Marshall, partly in 1904 by Messrs. R. A. Farmer and C. H. Semper and partly in 1905 by Mr. Farmer.

NOTE.—The elevations of certain bench marks on the Courtland and Rio Vista quadrangles have been corrected by the precise-level line run by L. F. Biggs in fall of 1907 from Sacramento down the river to west edge of Rio Vista quadrangle.

COURTLAND QUADRANGLE.

GLIDE GUN CLUB, SOUTH ALONG RIGHT SIDE OF SACRAMENTO RIVER, TO CLARKSBURG.

	Feet.
Glide Gun Club, 0.5 mile south of, on line between Glide and Content, 300 feet south of Manual Content's house, 150 feet west of levee, 20 feet south of southwest corner of woodhouse; iron post stamped "16 B"-----	16. 012
Anton Fernando's house, 40 feet from southeast corner of, west side of road, northeast corner of house lot; iron post stamped "21 B"-----	20. 852
Clarksburg, 0.5 mile north of, 100 feet east of Merritt schoolhouse, inside of fence; iron post stamped "14 B"-----	14. 263
TREMONT, EAST 4 MILES; THENCE SOUTH 6.5 MILES; THENCE EAST 2 MILES; THENCE SOUTH 3 MILES; THENCE WESTERLY TO BINGHAMTON.	
Bulkey's ranch house, at southeast corner of yard, west side of road; iron post stamped "34 B"-----	34. 123
Hance Timm's house, 400 feet southeast of, west side of road; iron post stamped "31 B"-----	31. 334

	Feet.
Jud King's ranch house, 0.5 mile west of, southeast corner T. 7 N., R. 2 E., southeast corner of field; iron post stamped "21 B"-----	20. 708
T. 6 N., R. 2 E., near northeast corner of sec. 24, southeast corner to pasture fence; iron post stamped "8 B"-----	7. 409
T. 6 N., R. 2 E., 1 mile east by 0.25 mile north of Peters's house, southeast corner of field; iron post stamped "17 B"-----	17. 121

JUD KING'S RANCH HOUSE, 2 MILES EAST (DOUBLE SPUR LINE).

Jud King's ranch house, 2 miles east of, on north and south fence line, 50 feet east of levee, 150 feet southeast of dead tree on levee; iron post stamped "9 B"-----	8. 777
---	--------

FORKS OF SUTLER AND STEAMBOAT SLOUGHS, NORTH VIA COURTLAND, TO CLARKSBURG.

Forks of Sutler and Steamboat sloughs, 0.7 mile north of, 0.25 mile northwest of H. M. Donaldson's ranch house, 300 feet west of Sutler Slough, in northwest corner of Orchard lot; iron post stamped "6 1906 BN"-----	5. 916
Courtland, 2 miles north of, 20 feet east of road, 150 feet west of drainage canal, 260 feet north of levee; iron post stamped "1906 B N"-----	9. 900
Clarksburg, 2.2 miles south of, 40 feet southeast of Ross House, west of road, 200 feet west of Sacramento River; iron post stamped "19 1906 B N"-----	19. 006

COURTLAND, SOUTHEAST, TO WALNUT GROVE.

Courtland, 60 feet east of road, in south foundation of Baner, Miller & Newbert's store; aluminum tablet stamped "14 BN 1906"-----	13. 755
Grand Island, at head of Steamboat Slough, 0.5 mile north of bridge; zero of gage at Kerchwak House-----	-4. 398
Grand Island Bridge, north corner of bridge abutment; aluminum tablet stamped "20 B N 1906"-----	19. 696
Schoolhouse, 100 feet southeast of, 0.25 mile northwest of pump house, at southeast corner of yard, west side of road; iron post stamped "-2 B N 1906"-----	-2. 498
Grand Island Bridge, 3.5 miles south of, 250 feet southeast of E. B. King's house, 150 feet northeast of Sacramento River levee, 100 feet northwest of cross levee; iron post stamped "8 1906 BN"-----	7. 851

VACAVILLE QUADRANGLE.

BINGHAMTON, WEST ALONG HIGHWAY, TO ELMIRA.

Binghamton post-office, 5 feet east of northeast corner of; iron post stamped "35 B"-----	34. 569
T. 6 N., R. 1 E., near quarter corner between secs. 28 and 27, west side of road at southeast corner of field; iron post stamped "44 B"-----	43. 783
Elmira, 200 feet north of, 40 feet west of track, 8 feet north of telegraph pole; iron post stamped "72 B"-----	72. 247
Elmira, 1.7 miles north of, 33 feet east of track, 2 feet west of mile-post 62; iron post stamped "62 B"-----	62. 282

PRIMARY LEVELING.

SEC. 36, T. 5 N., R. 1 E., NORTHEAST TO CENTER OF T. 6 N., R. 2 E.

	Feet.
T. 5 N., R. 1 E., northeast corner sec. 13, west side of road; iron post stamped "15 B"-----	14. 669
Main Prairie, 200 feet north of old hotel, 100 feet west of barn, west side of road; iron post stamped "7 B"-----	7. 037

CANNON, ALONG WAGON ROAD, TO TRIANGULATION STATION.

Triangulation station, 400 feet east of railroad, 0.5 mile northwest of Cannon; iron post stamped "163 B"-----	163. 382
--	----------

WINTERS, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO ELMIRA.

Wolfskill station, at signboard; top of east rail-----	123. 8
Allendale, in front of station; top of west rail-----	119. 9
Allendale, 350 feet south of signboard, west of track and south of road crossing, 10 feet north of telegraph pole; iron post stamped "117 B"-----	117. 056
Hartley, 400 feet south of signboard at station, east side of track and north of road crossing; iron post stamped "115 B"-----	115. 067
Violet, in front of station; top of west rail-----	139. 1
Vacaville station, 350 feet west of track, north of street, 8 feet east of telephone pole, at corner of railroad lot; iron post stamped "164 B"-----	164. 138
Vacaville, at northwest corner of public schoolhouse, 4 feet above ground; bronze tablet stamped "188 B"-----	187. 717
Vacaville, in front of station; top of west rail-----	161. 9
Elmira, 200 feet north of station, 40 feet west of track, 8 feet north of telephone pole; iron post stamped "72 B"-----	72. 247
Elmira, 1.7 miles north of, 33 feet east of track, 2 feet west of mile-post 62; iron post stamped "62 B"-----	62. 282

TREMONT, WEST VIA CURRY SCHOOLHOUSE, TO NEAR WOLFKILL.

Curry school, at northwest angle of crossroads; iron post stamped "85 B 1904 2"-----	85. 018
Curry school, 3.7 miles west of, southeast angle of crossroads; iron post stamped "103 B"-----	103. 139

DIXON, WEST VIA COUNTY ROAD, TO ALLENDALE.

Dixon, 700 feet south of station, west of track, at road crossing, south of road, at corner of fence; iron post stamped "61 B"-----	61. 295
---	---------

ANTIOCH QUADRANGLE.

FAIRFIELD COURT-HOUSE, EAST ALONG WAGON ROAD, TO POINT 1 MILE NORTH OF DENVERTON; THENCE TO DENVERTON; THENCE EAST TO SEC. 36, T. 5 N., R. 1 E.

Fairfield court-house, 2.75 miles east of, 100 feet east of water tank, on south side of road; iron post stamped "15 B"-----	14. 704
T. 5 N., R. 1 W., sec. 29, southeast corner of (set probably in 1896) --	14. 788
Denverton, 5 feet west of northwest corner of blacksmith shop, in front of schoolhouse; iron post stamped "7 B"-----	6. 564
T. 5 N., R. 1 E., northeast corner sec. 36, east side of road; iron post stamped "17 B"-----	17. 261

SEC. 29, T. 5 N., R. 1 W., SOUTH TO POTRERO HILLS.

	Feet.
Potrero Hills, on section line between secs. 3 and 4, 0.5 mile south of north line of section, opposite gate to Sylvester Pimental's ranch, 5.5 miles east to Suisun; iron post stamped "49"-----	49. 064

DENVERTON, SOUTH ALONG WAGON ROAD, TO NEAR BIRDS LANDING; THENCE EASTERLY TO PETER ANDERSON'S PLACE.

Montezuma schoolhouse, southeast corner of yard, west of road; iron post stamped "41 B"-----	41. 245
Willow Springs schoolhouse, southeast corner of yard, west side of road; iron post stamped "58 B"-----	57. 666
Birds Landing, 5 miles southeast of, at Peter Anderson's place, 10 feet west of gate to barn, on south side of road; iron post stamped "110 B"-----	110. 131

SEC. 35, T. 5 N., R. 1 E., SOUTHEAST TO SEC. 9, T. 4 N., R. 2 E.

T. 4 N., R. 2 E., corner secs. 3, 4, 9, and 10, 300 feet southwest of M. Egbert's white house, west side of road; iron post stamped "32 B"-----	31. 957
---	---------

CONCORD, NORTH ALONG ROAD TO BAY POINT; THENCE EAST ALONG SOUTHERN PACIFIC RAILROAD, TO BLACK DIAMOND.

McAvoy's siding, in corner of fence southwest from southwest corner of warehouse; iron post stamped "22"-----	22. 439
Black Diamond, at corner of stable; iron post stamped "21"-----	20. 500
Black Diamond Hotel, tack on porch of, midway between two doors, 4 inches from side of house ^a -----	7. 500

CORNWALL, EAST ALONG SOUTHERN PACIFIC RAILROAD, TO ANTIOCH.

Antioch schoolhouse, in rear wall of foundation; bronze tablet stamped "35"-----	35. 296
Antioch, in front of station; top of rail-----	43. 5

SIX MILES SOUTHWEST OF RIO VISTA, EAST AND SOUTH ALONG ROAD, TO TOLANDS LANDING; THENCE WEST TO FORKS OF ROAD 1.5 MILES SOUTH OF BIRDS LANDING.

Tolands Landing, 3 miles west of, north side of road, 1 foot south of fence line, 8 feet east of gate, 0.25 mile west of feeding shed, 100 feet north of slough; iron post stamped "10 B"-----	9. 874
Collinsville, 0.5 mile north of, southwest corner of schoolhouse, at crossroads; iron post stamped "5 B"-----	4. 927

TOLANDS LANDING, SOUTH ACROSS SHERMAN ISLAND, TO NORTH BANK SAN JOAQUIN RIVER; THENCE WEST TO ANTIOCH.

Tolands Landing, 3.9 miles south of, at south end of road which crosses Sherman Island southward from Tolands Landing, at turn, 0.5 mile south from pump house, 100 feet north of San Joaquin River, south side of road, 0.25 mile east of house; iron post stamped "—1 1906 BN"-----	—1. 477
---	---------

^a The above bench mark is, as nearly as could be determined, the datum of the level system of the State engineering department, the elevation of which above the mean "lowest low tide," as resulting from tidal observations made at New York Landing during the months of October, November, and December, 1878, is 11.22 feet. From tide tables, mean sea level is 3.7 above lowest low water at Antioch.

RIO VISTA QUADRANGLE.

ANDERSON'S PLACE, NORTHEAST TO RIO VISTA; THENCE NORTHWEST TO NORTHEAST CORNER
SEC. 9, T. 4 N., R. 2 E.

	Feet.
Madison's blacksmith shop, 100 feet from southwest corner of, north- west corner of field, and east side of road; iron post stamped "54 B" -----	53.822
Rio Vista Bank Building, southeast corner, 2 feet above sidewalk; tablet stamped "23 B" -----	22.425
T. 4 N., R. 2 E., corner secs. 11, 12, 13, and 14, east side of road; iron post stamped "19 B" -----	18.900

RIO VISTA, NORTH BY STEAMBOAT SLOUGH AND SUTTER SLOUGH, TO FORK OF SUTTER AND
STEAMBOAT SLOUGH.

Ferry landing; zero of gage -----	- 4.403
Rio Vista, 3.7 miles north of, 0.8 mile south of Westgates, 250 feet west of river, 200 feet west of house on north side of road; iron post stamped "-1 B N 1906" -----	-1.130
Walkers Landing, 0.7 mile north of, west side of road, 150 feet west of Steamboat Slough, 250 feet northwest of J. Hollenbeck's house; iron post stamped "4 1906 B N" -----	3.600

WALNUT GROVE, SOUTH ALONG EAST SIDE TYLER ISLAND AND WEST, TO RIO VISTA.

Tyler Island, east side of road across island, 200 feet west of Mokol- umne River, on ranch "J" of Bamman property, 0.25 mile south of pump house; iron post stamped "-1 N 1906" -----	-1.088
Camp C, 140 feet east of house, 100 feet north of Mokolumne River, 100 feet northwest of barn; iron post stamped "0 1906 B N" -----	-0.282
Ferry landing to Tyler Island, 150 feet west of, north side of road, 50 feet west of saloon; iron post stamped "3 1906 B N" -----	3.040
G. F. Terschman's house, 85 feet west of, 200 feet south of Sacra- mento River; iron post stamped "5 B N 1906" -----	4.943

CAPAY, DAVISVILLE, DUNNIGAN, FAIROAKS, KNIGHTS LANDING, POPE VALLEY, RUMSEY, AND
WOODLAND QUADRANGLES.

COLUSA, NAPA, PLACER, SACRAMENTO, SUTTER, AND YOLO COUNTIES.

The elevations in the following list are based upon the precise-level lines along the Southern Pacific Railroad from Benicia via Sacramento to Mohave and from Davisville north to State line.

The leveling on Fair Oaks quadrangle was done in 1901 under Mr. A. E. Murlin, topographer, by Mr. L. D. Ryus, levelman, and that on Davisville quadrangle was done in 1905 under Mr. R. B. Marshall, geographer, mostly by Mr. G. C. Douglas, levelman, but partly by R. A. Farmer, topographer. The leveling on the Woodland quadrangle was done in 1904 by Messrs. Farmer and C. H. Semper.

The work on Dunnigan quadrangle was done in 1904 by Mr. Semper, that on Knights Landing quadrangle was done in 1904 by

Mr. Semper and in 1905 by Mr. Douglas, and that on Rumsey quadrangle in 1904 by Messrs. Farmer and E. M. Fry. That on Capay and remainder of Pope Valley 30' quadrangle was done under Mr. L. C. Fletcher, partly in 1899 by L. D. Ryus, levelman, and partly in 1904 by Mr. Farmer.

FAIROAKS QUADRANGLE.

SACRAMENTO, NORTHEAST TO SAN JUAN SCHOOL; THENCE TO FAIROAKS; THENCE SOUTH TO SOUDAN; THENCE SOUTHWEST ALONG SOUTHERN PACIFIC RAILROAD TO ROUTIER; THENCE SOUTH TO WALSH STATION; THENCE NORTHWEST ALONG SOUTHERN PACIFIC RAILROAD, TO BRIGHTON.

	Feet.
Sacramento, in north wall of post-office, 15 feet east of northwest corner, 5 feet above ground; aluminum tablet stamped "31 B"-----	30.527
Sacramento, State capitol, 3 miles northeast of, at intersection of roads; iron post stamped "39 B"-----	39.320
Ben Ali, 2.5 miles east of, 150 feet west of windmill, at intersection of roads; iron post stamped "69 B"-----	68.650
San Juan schoolhouse, 1 mile east of, at southeast corner of field, at intersection of roads; iron post stamped "191 B"-----	190.625
Fairoaks Junction, 300 feet east of switch, at southeast corner of field, north of track; iron post stamped "113 B"-----	112.937
Routier, opposite station, north of county road; iron post stamped "69 B"-----	68.754
Walsh, at southwest corner of field, opposite saloon; iron post stamped "64 B"-----	63.937

SACRAMENTO, NORTH ALONG MARYSVILLE ROAD, TO FORKS OF ROADS AT NORTHWEST CORNER OF SEC. 19, T. 10 N., R. 5 E.; THENCE EAST TO QUARTER CORNER SOUTH SIDE OF SECTION 10, T. 10 N., R. 6 E.; THENCE SOUTHERLY TO FAIROAKS.

Sacramento Capitol, 5 miles north of, 250 feet north of house, 100 feet west of corner at L of road; iron post stamped "28 B"-----	27.933
T. 10 N., R. 5 E., northwest corner of sec. 19, at intersection of road running east from main road; iron post stamped "31 B"-----	30.862
T. 10 N., R. 5 E., southwest corner of sec. 13, 1 mile south of Centre Union schoolhouse, east side of road, at angle to north; iron post stamped "89 B"-----	88.898
Antelope, 2 miles northeast of, at edge of Southern Pacific Railroad right of way, north of road at crossing, west of track; iron post stamped "146 B"-----	146.101
T. 10 N., R. 6 E., near center sec. 25, at southeast corner of cross-roads; iron post stamped "151 B"-----	151.212

DAVISVILLE QUADRANGLE.

SACRAMENTO, NORTHWEST ALONG HIGHWAY, TO WOODLAND.

Sacramento, west of, south side of track at milepost 86; iron post stamped "17 B"-----	17.339
Elkhorn, 7.7 miles south of, water tank on east side of levee road, in front of Lehman's hop yard, 3 feet north of foundation to tank; iron post stamped "32 B"-----	32.138
Elkhorn, 3.9 miles south of, northwest corner of foundation to Taylor monument; small cross cut in granite block set in brick, marked "U. S. G. S. 29"-----	28.87

	Feet.
Elkhorn, 2.8 miles south of, west corner cement-foundation water tank on levee opposite John Merkley's place; aluminum tablet stamped "32 B"-----	32. 015
Elkhorn, southwest corner of stone house by watering trough, on road to Woodland; iron post stamped "27 B"-----	26. 785
Elkhorn, 3.6 miles west of, south side of road, 340 feet east of section corner; iron post stamped "23 B"-----	23. 035

AT GRAYS BEND.

Knights Landing, 6.1 miles southeast of, 200 feet northwest of Mr. Weisman's house at Grays Bend, west side of road, at foot of levee; iron post stamped "29 B"-----	29. 163
--	---------

ELKHORN WEIR TO ELKHORN.

Elkhorn, 3 miles north of, 400 feet north of Dillon's house, 50 feet west of levee, on fence line; stone monument (U. S. B. M. 69)-----	25. 539
Elkhorn, 2.9 miles north of, 200 feet south of Dillon's house, at north end of Elkhorn Weir, top of west end of wall; aluminum tablet stamped "30 B"-----	30. 000
Elkhorn, 2.9 miles north of, 60 feet south of Dillon's house, stone monument (U. S. B. M. 70)-----	29. 99

SACRAMENTO, SOUTH ON RIGHT BANK OF SACRAMENTO RIVER, TO GLIDE GUN CLUB.

Broderick, 3 miles south of, west side of road in front of hop storage house of Perry's place, iron post stamped "29 B" ^a -----	28. 671
Machardo's house, 300 feet south of, 20 feet south of road; iron post stamped "22 B" ^a -----	22. 315

WOODLAND QUADRANGLE.

YOLO, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO WOODLAND.

Yolo, 150 feet north of station, north of road; iron post stamped "74 B"-----	72. 922
Yolo, 0.8 mile south of, north abutment of bridge over Cache Creek, west end, top of parapet wall; aluminum tablet stamped "89 B"-----	89. 425
Woodland, 2.2 miles north of, north of road, 250 feet east of track, at southwest corner of Taylor Bros.' farm; iron post stamped "64 B"-----	63. 986
Woodland, at Southern Pacific Railroad station, southeast corner of railroad park, 5 feet north of water tank; iron post stamped "60 B"-----	60. 260
Woodland, southeast corner of Yolo County Savings Bank; aluminum tablet stamped "71 B"-----	70. 734

YOLO, WEST VIA COUNTY ROAD, TO FORKS OF ROAD 1 MILE WEST OF BLICKLEY RANCH.

Yolo, 3.9 miles west of, on north of road at gate leading to Fred Market's ranch house; iron post stamped "169 B"-----	169. 283
Yolo, 7.4 miles west of, at southeast angle of crossroads, 650 feet south of J. C. Holverstott's ranch house; iron post stamped "169 B"-----	169. 168

^a Elevation corrected by precise-level line of L. F. Biggs in fall of 1907.

WOODLAND, WEST, TO MADISON.

	Feet.
Woodland station, 8 feet north of water tank; iron post stamped "60 B"-----	60.260
Woodland, 4.4 miles west of, in south face of northwest monument Yolo Base, U. S. Coast and Geodetic Survey, stamped "155 B"-----	155.033
Woodland, 5 miles west of, on east line of Guersisosi grant; iron post stamped "108 B"-----	108.011
Madison, in front of station; top of east rail-----	143.5
Madison, 200 feet southwest of station, south of Main street, 8 feet west of telephone pole; iron post stamped "150 B"-----	150.026

MADISON, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO WINTERS.

Citrona, in front of station; top of west rail-----	162.6
Citrona, 60 feet west of warehouse, west side of road; iron post stamped "162 B"-----	162.056
Ely in front of station; top of west rail-----	174.0
Ely, 100 feet west of warehouse, 60 feet west of signboard, west side of road; iron post stamped "175 B"-----	175.004
Winters, 200 feet south of station, 40 feet west of track, 50 feet east of street; iron post stamped "131 B"-----	131.011
Winters, in front of station; top of west rail-----	130.9

FRENCH PLACE, NORTHEAST, TO WINTERS AND RETURN.

Winters, 10 feet from fence, at west side of public school grounds; iron post stamped "133 B"-----	132.843
--	---------

3.2 MILES NORTH OF DAVISVILLE, WEST ALONG COUNTY ROAD, TO ELY.

Davisville, 3.2 miles north of, 30 feet north of milepost 80; iron post stamped "48 B"-----	48.400
Plainfield, southeast angle of crossroads; iron post stamped "70 B"-----	69.932
Plainfield, 3 miles west of, at signboard, northwest angle of crossroads; iron post stamped "90 B"-----	90.131

CROSSROADS 3 MILES WEST OF PLAINFIELD, NORTH ALONG COUNTY ROAD, TO NORTHWEST MONUMENT COAST AND GEODETIC SURVEY, YOLO BASE.

Stoddard schoolhouse, 3.4 miles north of, at northeast angle of crossroads; iron post stamped "96 B"-----	95.942
---	--------

CROSSROADS 3 MILES WEST OF PLAINFIELD, SOUTH VIA COUNTY ROAD TO CURRY SCHOOLHOUSE.

Fairfield schoolhouse, 1 mile south of, northeast angle of crossroads, at fence; iron post stamped "92 B"-----	91.853
--	--------

ONE MILE SOUTH OF FAIRFIELD SCHOOLHOUSE, EAST AND SOUTH, TO COAST AND GEODETIC SURVEY MONUMENT.

Miller ranch, north bank of Putah creek, Coast and Geodetic Survey monument, north face; aluminum tablet stamped "74 B"-----	73.901
--	--------

CAPAY (POPE VALLEY 30') QUADRANGLE.

POINT 4.5 MILES WEST OF WINTERS, WESTERLY, TO SODA CREEK.

Corner stone, Yolo, Solano, and Napa counties, north bank of Putah Creek, on bench east side of rock 3 inches below top; copper bolt stamped "U. S. G. S. 212 Ft. B. M."-----	212.272
Wragg Canyon, east of, at fork of road; iron post stamped "306"-----	306.128

	Feet.
Monticello, 1.25 miles south of, in top of stone tablet in center of south side of Monticello stone bridge over Putah Creek; bronze tablet stamped "309"-----	308.643
TANCRED, SOUTH, TO CAPAY.	
Cadnassa, 400 feet north of station, east of track, on right of way line, at northwest corner of field; iron post stamped "333 B"-----	333.354
Capay, in front of station; top of south rail-----	215.0
SEC. 36, T. 11 N., R. 2 W., SOUTH TO CAPAY.	
Intersection of Capay-Grant range line between Rs. 1 and 2 W., 10 feet north of; iron post stamped "191 B"-----	191.216
MADISON, WEST ALONG SOUTHERN PACIFIC RAILROAD, TO CAPAY.	
Esparto, southeast corner of post-office building, 18 inches above ground, in east wall, 18 feet south of corner; tablet stamped "190 B"-----	190.047
Capay, southeast corner of yard limits, north side of Main street, west of road from Dunnigan; iron post stamped "203 B"-----	203.432
RUMSEY (POPE VALLEY 30') QUADRANGLE.	
ARBUCKLE, SOUTHEAST, TO HERSHEY.	
Arbuckle, 4.6 miles south of, east of track at road crossing, 1,100 feet north of milepost 110, at Widow Spencer's ranch; iron post stamped "139 B"-----	138.694
CORNER TS. 13 AND 14 N., RS. 2 AND 3 W., SOUTH AND EAST TO DUNNIGAN.	
Liggett ranch house, 0.5 mile west of, 50 feet northwest of northwest corner sec. 16, T. 13 N., R. 3 W., 100 feet south of creek, north side of road; iron post stamped "308 B"-----	308.027
Wildwood schoolhouse, 50 feet northwest of, 20 feet south of county line, between Yolo and Colusa counties; iron post stamped "304 B"-----	304.147
Dunnigan, 2 miles north by 3 miles west of, 300 feet north of creek, 150 feet northeast of house, 5 feet east of gate; iron post stamped "195 B"-----	195.168
SAND CREEK SCHOOLHOUSE, SOUTHWEST ALONG ROAD VIA OLD OIL WELLS, TO RUMSEY.	
Old oil wells, 400 feet north of, 400 feet northwest of old stock shed, 10 feet north of road, 50 feet north of Sand Creek; iron post stamped "583 B"-----	583.109
Rumsey, 4 miles north of, on summit of divide between Cache and Sand creeks, 10 feet east of road; iron post stamped "1350 B"-----	1,350.121
RUMSEY, VIA SOUTHERN PACIFIC RAILROAD, TO TANCRED.	
Rumsey, in front of station; top of east rail-----	419.1
Rumsey, 250 feet southeast of station, 100 feet west of barn, on line between railroad and farm; iron post stamped "418 B"-----	418.292
Guinda, in front of station; top of rail-----	353.7
Guinda, 125 feet northwest of station, 60 feet southeast of hotel; iron post stamped "353 B"-----	353.240
Tancred, 120 feet north of station, 50 feet east of track; iron post stamped "296 B"-----	296.234

NEAR BRIMLEY'S RANCH, SOUTH ALONG ROAD TO NORTHWEST CORNER SEC. 36, T. 11 N., R. 2 W.

	Feet.
Fairview schoolhouse, 40 feet south of northwest corner of, 60 feet east of road; iron post stamped "342 B"-----	342.285
T. 11 N., R. 2 W., northwest corner sec. 36, 1 mile east of schoolhouse, northeast corner of field, southwest corner of crossroads, 4 feet south of corner post; iron post stamped "236 B"-----	236.686

POPE VALLEY 30' QUADRANGLE.^a

SODA CREEK, WEST-NORTHWEST TO NEAR MOONEY'S RANCH; THENCE SOUTHWESTERLY TO MOUTH OF CHILES CREEK.

Mooney's ranch, 1 mile west of, north side of road at summit, 100 feet west of road to Priet's house; iron post stamped "991"-----	991.170
--	---------

SAGE CANYON, NORTH, TO CONN VALLEY SCHOOLHOUSE.

Conn Valley school, 40 feet north of southeast corner, in grounds near fence; iron post stamped "319"-----	319.235
--	---------

MOUTH OF CHILES CREEK, NORTHWEST, TO BRIDGE 1 MILE NORTHEAST OF ST. HELENA; THENCE SOUTHWEST TO ST. HELENA.

St. Helena, 1.25 miles northeast of, in north wall, 25 feet east of west end of stone bridge over Napa Creek; bronze tablet stamped "221"-----	221.099
St. Helena, southwest corner of Main and Adam streets, in wall at north side of J. R. Kettlewell's hardware store, 1.7 feet above sidewalk, 1.5 feet from corner; bronze tablet stamped "255"-----	254.742

KNIGHTS LANDING QUADRANGLE.

ROUGH AND READY LANDING, SOUTHEAST ALONG RIVER ROAD, TO KNIGHTS LANDING STATION.

Derby Camp, 1.3 miles east of, north edge of river levee, opposite Chinese camp; iron post stamped "39 B"-----	39.432
Knights Landing, bridge over Sacramento River, top of south abutment, west wing wall, south end of; aluminum tablet stamped "41 B"-----	41.553
Knights Landing station, 30 feet east of track, at corner of road, opposite north side of station; iron post stamped "32 B"-----	31.825

KNIGHTS LANDING, SOUTH ALONG RIVER ROAD, TO GRAYS BEND.

Knights Landing, 4 miles southeast of, west side of road at foot of levee, south line of Mr. Roseberry's place; iron post stamped "30 B"-----	30.132
---	--------

GRAYS BEND, EAST DOWN RIVER ROAD, TO ELKHORN WEIR.

Knights Landing, 10.6 miles southeast of, 0.25 mile north of Doyle's house, 40 feet west of junction of river road and lane, north side of road; iron post stamped "29 B"-----	28.958
--	--------

DUNNIGAN QUADRANGLE.

HERSHEY, SOUTHEAST ALONG SOUTHERN PACIFIC RAILROAD, TO YOLO.

Hershey, 50 feet west of track, at road crossing 50 feet north of Colusa-Yolo County line; iron post stamped, "137 B"-----	137.126
Dunnigan, 60 feet north of station, at edge of park fence; iron post stamped "67 B"-----	67.018

^a For additional elevations on Pope Valley quadrangle, see Capay and Rumsey 15' quadrangles (pp. 144 and 145).

	Feet.
Dunnigan, 3.2 miles south of, 50 feet east of milepost 101, 60 feet east of track, at road crossing; iron post stamped "45 B"-----	44.955
Zamora (Blacks station post-office), 0.65 mile north of, 0.2 mile south of milepost 98, east of track at corner of fence on right of way at public road crossing, sec. 17, T. 11 N., R. 1 E.; iron post stamped "46 B"-----	45.841
Ronda station, east of track at corner of right-of-way fence at road crossing, near milepost 94.7; iron post stamped "54 B"-----	54.193

COLLEGE CITY, SOUTHEAST AND SOUTH, TO NEAR DUNNIGAN.

John's school, 1.1 miles north of, at fence at southeast angle of cross-roads; iron post stamped "43 B"-----	43.017
Spanish ranch house, 1.6 miles north of, south side of county line, at entrance to ranch; iron post stamped "47 B"-----	47.024
Vombreyman's ranch, at fence line, northeast angle of road to north; iron post stamped "36 B"-----	35.702

SAM HINES RANCH, VIA HOWELL POINT, TO ROUGH AND READY LANDING.

Wilkins Slough school, at west end of fence, road in front of school; iron post stamped "32 B"-----	32.140
Wilkins Slough school, 2.3 miles south of, at road to J. M. Miller's ranch house; iron post stamped "34 B"-----	34.163
Howells Point, at entrance to landing, Yolo-Colusa County line; iron post stamped "37 B"-----	37.383
Howells Point, 1.8 miles south of, at gate leading to Ern Miller's ranch house; iron post stamped "31 B"-----	31.071
Rough and Ready Landing, at junction of canal and river, south side of canal, 40 feet west of large oil tank; iron post stamped "40 B"-----	40.633

KNIGHTS LANDING, WEST 4.9 MILES; THENCE NORTH TO ROUGH AND READY LANDING.

Blacks station post-office, 4.3 miles east of, at crossroads to Yolo and Grimes Landing, northeast corner angle of roads; iron post stamped "41 B"-----	41.177
---	--------

ZAMORA (BLACKS STATION POST-OFFICE), EAST 4.3 MILES.

Blacks station post-office, 2.5 miles east of, at corner of gate to barn-yard of F. Schliemann's ranch house; iron post stamped "49 B"-----	49.093
---	--------

DUNNIGAN, SOUTHWEST AND SOUTH ALONG COUNTY ROAD, TO NEAR BRIMLEY RANCH.

Brimley ranch, 1 mile north of, summit between Dunnigan and Fair-view schoolhouse, east side of road; iron post stamped "333 B"-----	333.203
--	---------

COLUSA, FRUTO 30', GRIMES, MAXWELL, SITES 30', TEHAMA, VINA, AND WILLOWS
QUADRANGLES.

COLUSA, GLENN, AND TEHAMA COUNTIES.

The elevations in the following list are based upon the precise-level line from Benicia north along the Southern Pacific Railroad to Oregon.

The leveling on Tehama and Vina quadrangles and part of that on Willows quadrangle was done in 1903 under Mr. R. B. Marshall, topographer, by Messrs. S. E. Blout and E. W. Glafcke, levelmen.

The remainder on Willows quadrangle was done in 1904 by Messrs. E. M. Fry and C. L. Nelson, levelmen, and that on remainder of Fruto 30' quadrangle was done in 1904 by Mr. H. Hartley, levelman.

The leveling on Colusa, Grimes, and part of Maxwell quadrangles was done in 1904 by Messrs. C. H. Semper and E. M. Fry, levelmen; that on remainder of Maxwell quadrangle in 1904 by Mr. Hartley. The leveling on remainder of Sites 30' quadrangle was done in 1904 by Messrs. Hartley and Fry.

MAXWELL QUADRANGLE.

WILLOWS, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO WOODLAND.

	Feet.
Willows, 3 miles south of, east side of road at milepost 148, at right of way fence; iron post stamped "111 B"-----	110. 891
Logadale, at telegraph pole opposite milepost 145; iron post stamped "103 B"-----	102. 000
Norman, 600 feet north of brick warehouse, on west side of road; iron post stamped "91 B"-----	91. 325
Norman, 1.2 miles south of, 1,800 feet north of county line, east of road, at third telephone pole south of milepost 142; iron post stamped "90 B"-----	90. 330
Delevan, northwest corner of right of way fence, at forks of road, at milepost 139; iron post stamped "95 B"-----	95. 399
Maxwell, 2 miles north of, west of road, first telegraph pole south of milepost 136; iron post stamped "90 B"-----	89. 608
Maxwell, 150 feet west of station, northeast corner of lot, south margin of Main street, at base of flag pole; iron post stamped "93 B"-----	93. 332

POINT 3 MILES EAST OF WILLOWS, SOUTH AND WEST, TO NORMAN.

Willows, 4 miles south by 3 miles east of, at southwest corner of fence at forks of road; iron post stamped "97 B"-----	95. 553
Willows, 6.4 miles south by 3 miles east of, east side of road at southeast corner of fence; iron post stamped "86 B"-----	83. 884

NORMAN, EAST TO PRINCETON; THENCE NORTH TO GLENN.

Princeton, 3 miles west of, west of gate, 1 foot from fence at south side of road; iron post stamped "70 B"-----	70. 239
Princeton, 1 foot north of north wall of brick building, used as general store and post-office, 3 feet west of well, 10 feet west of Commercial street; iron post stamped "80 B"-----	80. 217
Princeton, 4 miles north of, 50 feet east of wagon bridge over canal, at fence corner, 30 feet southwest of crossroads; iron post stamped "86 B"-----	85. 982

THREE MILES EAST OF NORMAN, SOUTH AND WEST TO MAXWELL.

Glenn, Colusa County line, 60 feet east of fence, T. 18 N., between Rs. 2 and 3 W.; iron post stamped "71 B"-----	69. 217
Excelsior schoolhouse, 200 feet west of, on east side of road, at corner of schoolhouse; iron post stamped "62 B"-----	60. 431
Maxwell, 4 miles east of, south side of road at forks; iron post stamped "56 B"-----	54. 453

EXCELSIOR SCHOOLHOUSE, EAST ACROSS COUNTRY, TO COMPTON LANDING; THENCE NORTH TO PRINCETON.

	Feet.
Compton Landing, 0.2 mile south of, corner of fence at west side of road; iron post stamped "67 B"-----	67.147
Princeton, in front wall of brick store building (property of P. P. Tapscott) 5 feet south of door, east side of Commercial street; aluminum tablet stamped "83 B"-----	82.947

COMPTON LANDING, SOUTH TO COLUSA.

Colusa, 5 miles north of, 150 feet southwest of Sever's ranch house, 25 feet east of forks of road; iron post stamped "60 B"-----	60.229
---	--------

FORKS OF ROADS 4 MILES WEST OF NORMAN, SOUTH 3 MILES; THENCE EAST 1 MILE.

Norman, 3 miles west by 3 miles south of, Lower Campbell ranch, northeast corner of bunk house, 400 feet northeast of water tank; iron post stamped "117 B"-----	117.070
--	---------

GRIMES QUADRANGLE.

COLUSA, SOUTHEAST, TO SYCAMORE.

Sycamore, at east margin of highway, opposite saloon, between locust trees; iron post stamped "48 B"-----	48.129
---	--------

FORKS OF ROAD 2.7 MILES SOUTH OF SYCAMORE, SOUTH AND WEST TO ARBUCKLE.

Grimes Landing, at northwest corner of Main and Second streets; iron post stamped "47 B"-----	47.089
Sam Hines' ranch, in northwest angle of roads; iron post stamped "32 B"-----	32.108
Hines (Sam), 2.6 miles west of, 145 feet west of levee, south of road; iron post stamped "26 B"-----	25.932
College City, 1.5 miles north and east of, 1,100 feet west of bridge over slough, at southeast angle of road to south; iron post stamped "36 B"-----	35.824

COLUSA (FRUTO 30') QUADRANGLE.

COLUSA JUNCTION, SOUTH ALONG SOUTHERN PACIFIC RAILROAD, TO ARBUCKLE.

Colusa Junction, 100 feet south of station, 300 feet north of railroad crossing, east of track; iron post stamped "79 B"-----	78.749
Williams, 2 miles north of, 60 feet west of track, north of road on line of right of way fence, at crossroads; iron post stamped "73 B"-----	73.338
Williams, 110 feet west of track, 125 feet northwest of station, south side of street; iron post stamped "79 B"-----	78.845
Williams, 4 miles south of, 250 feet south of milepost 121, fence corner at road crossing; iron post stamped "90 B"-----	89.605
Arbuckle, 2.4 miles north of, east of road, 100 feet west of track, at fence opposite milepost 117; iron post stamped "106 B"-----	106.394
Arbuckle, 130 feet west of, at base of 50-foot flagpole; iron post stamped "137 B"-----	136.683

COLUSA, WEST, TO COLUSA JUNCTION.

	Feet.
Colusa, 150 feet west of corner of Ninth and Market streets, 10 feet south of sidewalk, on south side of street, in city park; iron post stamped "58 B"-----	58.265
Colusa, north wall of Colusa County court-house, 15 feet west of main entrance; aluminum tablet stamped "60 B 1904"-----	60.375
Colusa, 3.5 miles west of, at south side of wagon road, 75 feet south-east of bridge over slough, 60 feet south of track; iron post stamped "51 B"-----	51.205

COLUSA JUNCTION, WEST, TO LURLINE.

Lurline station, 75 feet east of schoolhouse, 25 feet south of track, northwest corner of warehouse; iron post stamped "111 B"-----	111.023
---	---------

ONE MILE NORTH OF WILLIAMS, WEST, TO FRESHWATER SCHOOLHOUSE.

Freshwater schoolhouse, 50 feet northwest of, south side of county road, 100 feet west of well; iron post stamped "121 B"-----	120.953
--	---------

SYCAMORE, WEST, TO WILLIAMS.

Williams, 6.6 miles east of, at corner of fence west of high levee north of road; iron post stamped "39 B"-----	39.584
Williams, 3.4 miles east of, at southeast angle of crossroads, at line of fence; iron post stamped "56 B"-----	56.491

SYCAMORE, SOUTH AND WEST VIA COUNTY ROAD, TO BERLIN.

Dry Slough schoolhouse, 3 miles west of, at southeast angle of crossroads; iron post stamped "42 B"-----	42.125
Prize, 0.5 mile west of, south of road at road to north, 20 feet west of bridge; iron post stamped "51 B"-----	51.173

STORAL RANCH, SOUTHEAST TO CORTINA SCHOOLHOUSE; THENCE EAST TO BERLIN.

T. 15 N., R. 3 W., southeast corner sec. 32, 0.5 mile north by 0.5 mile east of Montgomery ranch house, corner of fence at east side of road, on township line; iron post stamped "167 B"-----	167.127
Cortina schoolhouse, 0.2 mile west of, southwest corner section 14, T. 14 N., R. 3 W., corner of fence; iron post stamped "211 B"-----	211.098

FORKS OF ROAD 1.2 MILES EAST OF CORTINA SCHOOLHOUSE, SOUTH TO COMMON CORNER TS. 13 AND 14, RS. 2 AND 3.

Arbuckle, 4.5 miles west of, 30 feet south of corner of Ts. 13 and 14 N., Rs. 2 and 3 W., corner of fence; iron post stamped "284 B"-----	284.174
---	---------

SITES 30' QUADRANGLE.

CROSSROADS 5 MILES WEST OF WILLOWS, ALONG ROAD SOUTH, TO CROSSROADS 5 MILES WEST OF NORMAN; THENCE TO NORMAN.

T. 19 N., R. 4 W., section 26, northwest corner of, on north and west side of road; iron post stamped "170 B"-----	170.026
T. 18 N., R. 4 W., northwest corner section 11, south and east of road; iron post stamped "168 B"-----	168.181
T. 18 N., R. 4 W., northwest corner section 24, 4 miles west of Norman, north and east side of road; iron post stamped "135 B"-----	135.149

POINT 3 MILES SOUTH BY 3 MILES WEST OF NORMAN, SOUTHWEST TO GOLDEN GATE SCHOOLHOUSE; THENCE SOUTH TO LURLINE.

	Feet.
Miles station, 3 miles north of, Campbell's house, 50 feet northeast of, 40 feet east of blacksmith shop, northeast corner of yard fence, at south side of road; iron post stamped "157 B"-----	157.041
Golden Gate schoolhouse, 1 mile south of, 400 feet south of Malloway ranch house, west side of road, 6 feet west of gate; iron post stamped "243 B"-----	243.080
Mills station, 120 feet east of water tank, northeast corner of platform, 5 feet south of track; iron post stamped "146 B"-----	146.157

FAIRVIEW STATION, SOUTH ALONG COUNTY ROAD, TO FRESHWATER.

Manor ranch, 0.2 mile southwest of ranch house, corner of fence at south side of county road; iron post stamped "157 B"-----	156.997
--	---------

MANOR RANCH, SOUTH, TO STORAL RANCH.

Storal ranch house (West ranch), 600 feet northeast of, large gate, at west end of, north side of road; iron post stamped "183 B"-----	183.028
--	---------

WILLOWS QUADRANGLE.

WILLOWS, NORTH ALONG RAILROAD, TO ORLAND.

Willows, 100 feet north of station, 75 feet west of track, north side of street, corner lot; iron post stamped "132 B"-----	130.896
Willows, Glenn County court-house steps; aluminum tablet stamped "138 B"-----	137.937
Willows, 700 feet north of station, 10 feet east of Southern Pacific track, 3 feet east of milepost 151 and section post 48-49, southwest corner brick warehouse; aluminum tablet stamped "134 B"-----	133.969
Lyman, 0.2 mile south of, opposite milepost 154, east side of county road, alongside right-of-way fence; iron post stamped "138 B"-----	137.098
Germantown, 0.7 mile south of, west side of county road, 900 feet south of crossroads, opposite milepost 157; iron post stamped "159 B"-----	158.226
Germantown, 2.5 miles north of, east side of county road, opposite milepost 160, at forks of road; iron post stamped "185 B"-----	184.001
Greenwood, at crossroads, west of station, west side of county road, opposite milepost 163; iron post stamped "230 B"-----	228.641
Orland station, 300 feet north of, 30 feet east of track, at road crossing; iron post stamped "256 B"-----	255.084
Orland, northwest corner of Bank of Orland; aluminum tablet stamped "256 B"-----	255.948

ORLAND, EASTERLY, TO ST. JOHNS.

Orland, 3 miles east of, 200 feet south of crossroads, east side of road at orchard; iron post stamped "217 B 37"-----	215.007
--	---------

THREE MILES WEST OF ORLAND, SOUTH ALONG TOWNSHIP LINE, TO POINT 3 MILES EAST OF WILLOWS; THENCE TO WILLOWS.

Greenwood, 3 miles east of, northwest corner of fence at crossroads, 0.5 mile south of cemetery; iron post stamped "200 B 38"-----	199.472
T. 21 N., R. 3 W., southeast corner section 24, west side of road, 0.25 mile west of large lone tree, in field; iron post stamped "171 B 39"-----	169.318

	Feet.
T. 20 N., R. 2 W., southwest corner section 6, crossroads at Schlouse ranch house, at northeast fence corner; iron post stamped "152 B 40"-----	150. 183
T. 20 N., R. 2 W., east of county road, 370 feet south of Central canal; iron post stamped "135 B"-----	132. 616
Willows, 3.2 miles east of, crossroads, 100 feet north of ranch house, east side of road; iron post stamped "111 B"-----	109. 941

CHICO, WEST TO ST. JOHNS; THENCE SOUTH TO JACINTO; THENCE WEST TO TOWNSHIP LINE.

St. John, 300 feet south of Stony Creek, 40 feet northeast of intersection of roads, in southwest corner of school yard; iron post stamped "143 B"-----	142. 996
St. John, 2.4 miles south of, 1,200 feet southwest of white house, first turn in road to west, 12 feet northwest of fence corner; iron post stamped "134 B"-----	133. 963
St. John, 5.1 miles south of, 150 feet north of bridge, 30 feet northeast of intersection of county roads and private road, 600 feet west of frame house, 2 feet northwest of fence corner; iron post stamped "122 B"-----	122. 020
Jacinto, 0.1 mile north of, 500 feet north of red brick store, 20 feet south and 20 feet west of road, 6 feet west of signpost; iron post stamped "108 B"-----	107. 986

JACINTO, SOUTH, TO GLENN.

Sidds Landing, at southeast corner of warehouse, 50 feet west of river, and 50 feet east of road; iron post stamped "106 B"-----	105. 935
Glenn, 0.5 mile south of, 50 feet east of road, at front entrance to old schoolhouse, at south end of steps; iron post stamped "93 B"-----	92. 987

VINA (FRUTO 30') QUADRANGLE.

ST. JOHNS, NORTHWEST TO MCINTOSH RANCH; THENCE NORTH VIA SQUAW HILL, TO VINA.

Stony Creek station, 6 miles east of, 0.4 mile south of McIntosh's ranch house, intersection of private road with county road, 30 feet northwest of forks, 2 feet south of fence corner; iron post stamped "185 B"-----	184. 996
Squaw Hill Ferry, 250 feet west of west landing, in fence corner; iron post stamped "196 B"-----	195. 839

ORLAND, NORTH ALONG COUNTY ROAD, TO CORNING.

Orland, 2.6 miles north of, east side of road, 5 feet west of fence; iron post stamped "273 B"-----	271. 486
Orland, 4 miles north of, west side of road, 300 feet north of dry creek, at foot of electric pole, 1,233; iron post stamped "274 B"-----	273. 004
Orland, 6.6 miles north of, west side of road, 60 feet west of electric pole, 1,116; iron post stamped "286 B"-----	285. 049
Orland, 10 miles north of, east side of road, in Maywood Colony, at electric pole, 964; iron post stamped "271 B"-----	269. 972
Corning, 100 feet west of station, south side of street at northwest corner of warehouse; iron post stamped "273 B"-----	271. 410

CORNING, EAST ALONG COUNTY ROAD, TO SQUALL HILL FERRY.

	Feet.
Corning, 3 miles east of, south side of road, at crossroads, 8 feet east of telephone pole; iron post stamped "222 B"-----	220.365

FROM CROSSROADS 3 MILES EAST OF CORNING, SOUTH ALONG COUNTY ROAD, TO CROSSROADS 3 MILES EAST OF ORLAND.^a

Corning, 4 miles south by 3 miles east of, common corner secs. 5, 6, 7, and 8, T. 23 N., R. 2 W., at fence; iron post stamped "217 B"-----	216.028
Kirkwood, 2.5 miles southeast of, east side of road at fence corner; iron post stamped "215 B 35"-----	213.506
Malton, 2 miles east by 0.4 mile south of, 1 mile south of Jones ranch, west side of road at clump of fig trees; iron post stamped "220 B"-----	218.650

TEHAMA, SOUTH ALONG COUNTY ROAD, TO CROSSROADS 3 MILES EAST OF CORNING.

Tehama, 3.5 miles south of, 0.75 mile north of Thom Creek, east side of road, at foot of telegraph pole; iron post stamped "222 B"-----	220.661
---	---------

CORNING, NORTH ALONG COUNTY ROAD, TO CROSSROADS 7 MILES NORTH OF CORNING.

Corning, 3 miles northwest of, at crossroads, west side of road, 5 feet north of telephone pole; iron post stamped "303 B"-----	303.496
---	---------

FRUTO 30' QUADRANGLE.

WILLOWS, WEST ALONG COUNTY ROAD 5.5 MILES; THENCE NORTH TO POINT 4.5 MILES WEST OF ORLAND; THENCE TO ORLAND.

Willows, 5 miles west of, south side of road near crossroads, opposite schoolhouse; iron post stamped "190 B"-----	189.868
T. 20 N., R. 4 W., sec. 23, Feeny place, west side of road near barn; iron post stamped "190 B"-----	189.751
T. 20 N., R. 3 W., northwest corner sec. 1, south of road; iron post stamped "204 B"-----	203.917
T. 21 N., R. 4 W., northwest corner sec. 24, west of road; iron post stamped "251 B"-----	250.866
T. 21 N., R. 4 W., northwest corner sec. 1, 600 feet east of Butte ranch house, north side of road, near fence corner; iron post stamped "281 B"-----	280.869

TEHAMA QUADRANGLE.

RED BLUFF, SOUTH ALONG COUNTY ROAD, TO CROSSROADS 7 MILES NORTH OF CORNING.^a

Tehama, 5.5 miles west of, west side of road, Red Bluff at crossroads, 5 feet north of telephone pole; iron post stamped "308 B"-----	307.463
---	---------

RED BLUFF, SOUTH ALONG COUNTY ROAD, TO CROSSROADS 7 MILES NORTH OF CORNING.^a

Red Bluff, 6.5 miles south of, west side of road, 3 feet south of telephone pole; iron post stamped "311 B"-----	310.497
Red Bluff, 10.5 miles south of, west side of road, 4 feet north of telephone pole; iron post stamped "304 B"-----	303.664

^aThe error distributed in this line is excessive.

TEHAMA, NORTH THROUGH CONE RANCH, TO RED BLUFF.

	Feet.
Tehama, 4 miles northeast of, 50 feet south of draw in small bunch of oaks, east side of county road, through Cone ranch; iron post stamped "233 B"-----	233. 489
Antelope Creek, 40 feet north of bridge, east side of road; iron post stamped "234 B"-----	234. 067
Cone estate, 0.25 mile north of adobe ranch house, west side of road, south side of Antelope Creek at bridge; iron post stamped "246 B"-----	246. 129
Cone estate, Antelope ranch headquarters, beside walk in front of residence, east side of road; iron post stamped "271 B"-----	270. 764
MILL CREEK HIGHWAY BRIDGE, EAST 4 MILES UP MILL CREEK; THENCE NORTH TO DAY CREEK; THENCE WEST TO ROAD FORK 1 MILE NORTH OF ANTELOPE RANCH.	
T. 26 N., R. 1 W., sec. 31, southeast corner, north of Mill Creek, 10 feet north of road; iron post stamped "471 B"-----	471. 259

WILD CAT GULCH, EASTWARD, TO T. 26 N., R. 1 W.

Wild Cat Creek, 2 miles east of, north side of road, in highest point of lava bowlder; aluminum tablet stamped "1040 B"----- 1,040.359

DRY CREEK, NORTHWEST AND WESTWARD ALONG PRIVATE ROADS AT BASE OF FOOTHILLS, TO RED BLUFF.

Dry Creek sheep camp, 4 miles north of, 350 feet west of west end of stone fence, 4 feet east of gatepost; iron post stamped "301 B"--- 300. 865

POINT 6 MILES EAST OF RED BLUFF, EAST ALONG THE RED BLUFF AND LYONVILLE ROAD, TO MUD SPRINGS.

Red Bluff, 6 miles east of, at forks of road to Tuscan Springs, near signpost; iron post stamped "307 B 1903"----- 306. 629

Mud Springs, 0.25 mile west of, 15 feet south of road, in sec. 6, T. 27 N., R. 1 W., in lava bowlder, 6 by 4 by 2 feet; aluminum tablet stamped "1061 B"----- 1,061. 406

MILL CREEK, SOUTH TO TOOMES CREEK; THENCE SOUTHWEST TO MILEPOST 207.

Lone Pine camp, Toomes Creek sheep camp, 200 feet west of ranch house, 4 feet east of telephone pole; iron post stamped "358 B"--- 358. 180

IRON MOUNTAIN SPECIAL AND REDDING QUADRANGLES.

SHASTA COUNTY.

The elevations in the following list are based on an aluminum tablet set in first angle of wall on north side of east entrance to the court-house in Redding, about 3 feet above ground. The height of this bench mark was accepted as 589.658 feet, being determined by the precise-level line run by Mr. C. H. Semper in 1902, between Benicia, Cal., and Portland, Oreg. For additional elevations refer to precise leveling (p. 26).

The leveling on Redding quadrangle was done mostly in 1900 by Mr. L. A. Whereat, levelman, under the direction of Messrs. R. H.

McKee and A. B. Searle, topographers. The leveling on the Iron Mountain Special quadrangle is part of that on the Redding quadrangle, and was done by Mr. A. B. Searle in 1903. The latest work is a line from Redding via Shasta to Girvan, run in 1905 by Mr. G. C. Jacobs.

The standard bench marks set in 1900 are stamped with the letter "R" in addition to figures of elevation, mostly 2 feet too great; those set in 1903 and 1905 are stamped "B" with correct figures.

REDDING QUADRANGLE.

REDDING, VIA FURNACEVILLE, TO WARD'S RANCH ON REED'S TOLL ROAD.

	Feet.
Loomis Corners, west side of Leighton's house, 2 feet south of north-east corner of fence; iron post stamped "550 R"-----	547.964
Rocky Plains, near center of, 2 miles southwest of Ben Jenkins's house, 15 feet south of road; iron post stamped "1109 R"-----	1,106.749
Ward's field, 2 feet east and 8 feet south of fence around, south side of Reed's (Redding-Furnaceville) toll road and 12 feet west of fork of private road leading via Eiler's to Oak Run road; iron post stamped "1279 R"-----	1,276.685

ENTERPRISE, VIA PALOCEDRO AND BELLAVISTA, TO FRAZIER CORNERS.

Pacheco schoolhouse, 20 feet east of road, 2 feet south of southwest corner; iron post stamped "449 R"-----	446.953
Bellavista, 15 feet north of county road as traveled, 2 feet southwest of southeast corner of fence around superintendent's house; iron post stamped "537 R"-----	535.036

PALOCEDRO, VIA MILLVILLE AND PAWNEE, TO WARD'S RANCH AND CLOVER CREEK FALLS ON FURNACEVILLE ROAD.

Millville schoolhouse, 2 feet south of southwest corner of; iron post stamped "513 R"-----	510.942
Frank Joseph's house, 540 feet northeast of, 6 feet southeast of tamarack road, 1.5 feet from northwest fence corner of the Tom Webb place on the continuation of division line between the Webb and Joseph farms; iron post stamped "977 R"-----	974.996

MILLVILLE, VIA SHINGLETOWN CUTOFF ROAD, TO BEAR CREEK CROSSING.

George Darr's house, 190 feet east of gate, 2 feet north of fence, south side of road, on top of grade going down to Bear Creek; iron post stamped "806 R"-----	803.633
---	---------

REDDING, VIA SHASTA, TO KESWICK.

Shasta, 50 feet northwest of west corner of Empire Hotel, 4 feet south of corner of corral, on northeast side of the main street, and on northwest side of street to Keswick; iron post stamped "1049 R"-----	1,046.886
Keswick schoolhouse, 6 feet south of first angle of west face; iron post stamped "778 R"-----	775.897

	Feet.
SHASTA, SOUTH ALONG ROAD TO CENTERVILLE (LARKIN); THENCE EAST TO GIRVAN.	
Shasta, 2.7 miles south of, on ledge of rock facing south, west side of road, 150 feet south of old shed; aluminum tablet stamped "930 B 05"-----	929. 959
Centerville (Larkin), west side of road, opposite Centerville store; iron post stamped "876 B"-----	876. 459
Centerville, 2.9 miles east of, 80 feet south of road, 300 feet west of house at junction of roads from Redding and Girvan to Centerville, on ledge of sandstone; aluminum tablet stamped "562 B 05"-----	562. 338
FRAZIERS CORNERS, VIA BEAR VALLEY, COPPER CITY, MADISON'S AND KELLEY'S RANCH, TO BAGLEY FLAT (SINGLE SPUR LINE).	
Houston ranch, 1.6 miles northwest of, on Stillwater road 15 feet south of fork with and 5 feet east of Copper City road, 500 feet south of forks with road to Bass's; iron post stamped "710 R"---	707. 791
Bear Valley, 0.15 mile southwest of stage station, 180 feet northeast of junction with Bellavista road, 18 feet southeast of road, 2 feet northwest of fence, on top of hill; iron post stamped "945 R"-----	942. 672
Copper City, 25 feet south of schoolhouse, at southeast corner of lot as at present defined by fence; iron post stamped "806 R"-----	803. 377
Squaw Creek, near east side line of T. 34 N., R. 2 W., 300 feet above first crossing, 1.87 miles north of Madison's house, 6 feet east of trail; iron post stamped "1047 R"-----	1, 044. 357
T. 35 N., R. 2 W., 1.39 miles north of Kelly's house, near east range line, 10 feet west of trail on saddle; iron post stamped "1536 R"---	1, 533. 719
Bagley Flat, 135 feet southwest of cabin, 85 feet southwest of head of spring; iron post stamped "2730 R"-----	2, 727. 880
POINT ON SOUTHERN PACIFIC RAILROAD, UP MIDDLE SALT CREEK.	
T. 36 N., R. 4 W., 3.5 feet west of southeast corner of sec. 30, on line between Ts. 35 and 36 N., R. 4 W., Mount Diablo meridian; iron post stamped "1182 R"-----	1, 180. 038
BENCH MARKS BASED UPON M'CLOUD RIVER DITCH LEVELS, CORRECTED FROM DATA FURNISHED BY J. R. ROGERS, ENGINEER IN CHARGE.	
T. 34 N., R. 4 W., northwest corner of sec. 23, 5 feet southeast of northwest corner of "McCloud River," U. S. Fish Reservation, 30 feet west of county road; iron post stamped "856 R"-----	853. 786
T. 36 N., R. 3 W., south edge of sec. 31, on west bank of McCloud River, near head of Rogers ditch line, and 100 feet west of ditch station 71+50, 146 feet west of 10-inch forked live oak tree; iron post stamped "1060 R"-----	1, 057. 616
IRON MOUNTAIN SPECIAL (REDDING 30') QUADRANGLE.	
KENNETH, WEST ALONG ROAD TO BALAKLALA; THENCE ALONG TRAIL, VIA SPREAD EAGLE MINE AND SADDLE OF COPLEY RIDGE (0.5 MILE EAST OF SUGARLOAF MINE), TO COPLEY.	
Balaklala Mining Company's office, 20 feet north of north end of, 20 feet south of road, at base of stone wall; iron post stamped "2286 B"-----	2, 285. 922

	Feet.
Spread Eagle mine, 0.5 mile northeast of, 5 feet west of trail at point of ridge; iron post stamped "2757 B"-----	2, 756. 924
Forks of Copley-Sugar Loaf and Minnesota-Sheep Springs trail, 10 feet east of, in saddle; iron post stamped "2560 B"-----	2, 560. 138

BORALMA, ALONG ROAD, TO TUNNEL NO. 11 OF TRINITY COPPER COMPANY.

Tunnel No. 11, Trinity Copper Company, 2 feet southwest of mouth; iron post stamped "1636 B"-----	1, 636. 086
---	-------------

BIG BAR, EUREKA, HOOPA, KORBEL, AND WEAVERVILLE QUADRANGLES.

HUMBOLDT, SHASTA, AND TRINITY COUNTIES.

The elevations in the following list are based on an aluminum tablet set about 3 feet above ground in first angle of wall on north side of east entrance to the court-house in Readding, accepted as being 589.658 feet above mean tide. In October, 1905, levels were run west and north over road and trail to vicinity of China Flat, work being abandoned in January, 1906. The leveling was done by Mr. George C. Jacobs, levelman, with a prism level and two rodmen with self-reading yard rods. In August, 1906, work was continued in the same manner with prism level by Mr. L. F. Biggs, levelman, northward to Hoopa Valley and westward to Eureka. At this point the Coast and Geodetic Survey bench mark on the warehouse wharf was sought but was not recovered. City bench marks Nos. 2 and 3 were checked on, their city value being 14.925 and 35.113 feet, respectively. Their datum plane as established by the United States Army engineers was accepted as 2.480 feet lower than mean tide, making their accepted elevations 12.445 and 32.633 feet, respectively.

The error of closure was found to be excessive, and although the elevations in this list are adjusted they must be regarded as preliminary only.

The lines of levels run by Mr. Jacobs and Mr. Biggs on the Shasta-Eureka line were checked roughly by second running by flying levels in opposite direction by Mr. Biggs.

WEAVERVILLE QUADRANGLE.

SHASTA, NORTHWEST ALONG ROAD VIA STELLA AND LOWDEN, TO WEAVERVILLE.

	Feet.
Shasta, 2 miles northwest of, 30 feet northeast of Camden turnpike at Shasta divide; and 75 feet east of telephone pole; iron post stamped "1428 B 1905"-----	1, 428. 345
Stella post-office; center of bridge over Whiskey Creek-----	1, 065. 6
Stella, south side of road, opposite hotel; iron post stamped "1091 B 1905"-----	1, 091. 031
Oak Bottom, 0.2 mile northwest of, northeast side of Camden turnpike, 6 telephone poles east of Shasta 8 milepost, on ledge of rock facing east; aluminum tablet stamped "1191 B 1905"-----	1, 190. 916

	Feet.
Tower House, 0.7 mile southeast of, north side of Camden turnpike, 630 feet northwest of Tower House 1 milepost; aluminum tablet stamped "1318 B 1905"-----	1, 317. 641
Tower House, 3.5 miles west of, south side of Shasta and Weaverville turnpike, on large bowlder opposite Endicott ranch house; aluminum tablet stamped "1750 B 1905"-----	1, 750. 025
Buckhorn station, 4.4 miles east of, south side of road and east end of cut at summit; iron post stamped "3252 B 1905"-----	3, 260. 917
Buckhorn, 2.4 miles east of station, east side of road, at culvert, on large bowlder; aluminum tablet stamped "2754 B 1905"-----	2, 763. 541
Buckhorn, 1.2 miles northwest of station, north side of road, on large bowlder; aluminum tablet stamped "2374 B 1905"-----	2, 382. 974
Lowden, 1.5 miles southeast of, north side of road, in rock; aluminum tablet stamped "2093 B 1905"-----	2, 102. 466
Lowden, west side of road in front of hotel; iron post stamped "1754 B 1905"-----	1, 763. 500
Lowden, 3.2 miles northwest of, north side of road, 320 feet southeast of Weaverville milepost 6, on rock; aluminum tablet stamped "2710 B 1905"-----	2, 722. 304
Weaverville, 2.9 miles south of, 375 feet north of junction of roads from Lowden and Douglas, east side of road on ledge of rock; aluminum tablet stamped "1816 B 1905"-----	1, 828. 647
Weaverville, southeast corner of court-house, in pavement; aluminum tablet stamped "2034 B 1905"-----	2, 046. 869

WEAVERVILLE, ALONG ROAD VIA JUNCTION, TO HELENA.

Weaverville, 2.8 miles west of, 0.5 mile east of summit, north side of road, on rock; aluminum tablet stamped "2738 B 1905"-----	2, 750. 674
--	-------------

BIG BAR QUADRANGLE.

ALONG HIGHWAY, VIA JUNCTION CITY, TO HELENA.

Junction City, 3.9 miles east of, 0.9 mile west of La Grange mine, southwest side of road, in top of stone monument, Mount Diablo meridian; copper plate stamped "2218 B"-----	2, 230. 907
Junction City, northwest side of road, 200 feet west of gravel bluff, 200 feet south of church, on large white bowlder; aluminum tablet stamped "1478 B 1905"-----	1, 491. 026
Junction City, 2.7 miles northwest of, north side of road, 300 feet west of where North Mountain Power Company's pipe line crosses road, on ledge of rock; aluminum tablet stamped "1747 B 1905"---	1, 760. 070
Helena, 2.3 miles east of, southeast side of road, northwest bank of Trinity River, on large bowlder; aluminum tablet stamped "1410 B 1905"-----	1, 422. 594
Helena post-office, northeast side of road, 4 feet from south corner of brick store; iron post stamped "1391 B 1905"-----	1, 403. 506

HELENA, ALONG TRAIL DOWN NORTH SIDE OF TRINITY RIVER, TO LUCCOCKS BAR; THENCE ON SOUTH SIDE TO DON JUAN POINT; THENCE ON NORTH SIDE TO CEDAR FLAT.

Helena, 3 miles west of, south side of trail, east side of brook, top of rock in Cut Throat Gulch; aluminum tablet stamped "1637 B 1905"-----	1, 649. 862
---	-------------

	Feet.
Big Bar, 3.5 miles east of, north side of Big Flat, 80 feet north of trail, 20 feet northwest of power pole, on rock; aluminum tablet stamped "1304 B 1905"-----	1, 313. 460
Big Bar, 0.7 mile east of, opposite Big Bar Hotel, 450 feet north of suspension bridge, 30 feet north of trail, east side of gulch, 250 feet east of house, top of rock; aluminum tablet stamped "1238 B 1905"-----	1, 247. 585
Big Bar, 2.1 miles west of, north side of trail, at base of rock cliff facing southeast; aluminum tablet stamped "1398 B 1905"-----	1, 408. 076
Taylor Flat, 1.3 miles east of, north side of trail, 850 feet east of rock cliff, top of boulder; aluminum tablet stamped "1229 B 1905"-----	1, 239. 125
Taylor Flat, 1.6 miles west of, 1,500 feet west of Canadian Bar, 80 feet south of trail, on rock; aluminum tablet stamped "1263 B 1905"-----	1, 272. 801
Cedar Flat, 5.4 miles east of, north side of trail, 625 feet east of Vance Creek, on rock; aluminum tablet stamped "1183 B 1905"-----	1, 193. 425
Cedar Flat, 1.9 miles east of, 675 feet west of suspension bridge over Trinity River, top of rock; aluminum tablet stamped "1003 B 1905"-----	1, 002. 262
Cedar Flat, 1.3 miles west of, 400 feet west of landslide, 40 feet north of trail, on rock; aluminum tablet stamped "1240 B 1905"-----	1, 249. 460

KORBEL QUADRANGLE.

SOUTH BANK, TO HAWKINS BAR; THENCE VIA CAMPBELLS BRIDGE, TO CHINA FLAT.

Burnt ranch, 500 feet west of house, 250 feet south of cemetery, 300 feet southeast of trail, on large boulder; aluminum tablet stamped "1591 B 1905"-----	1, 601. 622
Gray, 175 feet north of trail, 500 feet northwest of house, on large boulder; aluminum tablet stamped "777 B 1905"-----	787. 516
Hawkins Bar, 175 feet northwest of barn, 15 feet north of trail, on rock; aluminum tablet stamped "859 B 1905"-----	869. 491
Donahue ranch house, 2.7 miles southeast of, 60 feet west of trail, edge of river, 100 feet west of creek, top of rock; aluminum tablet stamped "519 B 1905"-----	528. 898
Donahue ranch house, 0.6 mile northwest of, 25 feet northwest of trail, 50 feet northwest of log cabin, at junction of South Fork and Trinity River, on rock; aluminum tablet stamped "543 B 1905"-----	553. 385
China Flat, 2.4 miles south of, west side of road, top of rock; aluminum tablet stamped "646 B 1906"-----	645. 195
China Flat, 160 feet north of hotel, 70 feet northeast of road to Hoopa, top of rock; aluminum tablet stamped "451 B 1906"-----	461. 149
China Flat, 2.8 miles north of, south side of road, first summit, Jarge rock; aluminum tablet stamped "BB 1906 20"-----	644. 210

CHINA FLAT, ALONG ROAD VIA ACORN, TO KORBEL.

China Flat, 2.8 miles west of, 50 feet east of road, 25 feet south of Little Brannen Creek, 200 feet northeast of Koby ranch house, top of rock; aluminum tablet stamped "1459 B 1906"-----	1, 469. 422
Haas ranch house, 1.5 miles east of, 15 feet south of road at summit, top of rock; aluminum tablet stamped "3109 B 1906"-----	3, 118. 616
Haas ranch house, 225 feet northeast of, 35 feet northwest of road, on rock; aluminum tablet stamped "2352 B 1906"-----	2, 362. 617

	Feet.
Haas ranch house, 3 miles southwest of, 150 feet west of Redwood summit, south side road, in slate; aluminum tablet stamped "BB 3701 1906-13"-----	3,714.927
Redwood summit, 3 miles southwest of, 2.2 miles east of Berry's ranch house, west edge of road; aluminum tablet stamped "2517 B 1906"-----	2,530.941
Berry's ranch house, 100 feet southeast of, west face of rock; aluminum tablet stamped "B 1906"-----	1,037.563
Berry's ranch house, 3.4 miles northwest of, at junction of road from Baer ranch and China Flat, 4 feet south of telephone pole, on rock; aluminum tablet-----	2,423.727
Solano, 0.6 mile east of, 225 feet north of summit, 5 feet east of road, on rock; aluminum tablet stamped "B 1906"-----	3,079.729
Solano, 1.5 miles west of, 20 feet northeast of road, on ledge of sandstone; aluminum tablet stamped "B 1906"-----	2,483.452
Solano, 4.1 miles southwest of, 30 feet northwest of road, 1,500 feet southwest of mile tree 27, on rock; aluminum tablet stamped "1949 B 1906"-----	1,962.590
Korbel, 100 feet south of station, west side of large stone ledge; aluminum tablet stamped "BB 15 1906 1902"-----	115.673

EUREKA QUADRANGLE.

KORBEL, ALONG ARCATA AND MAD RIVER RAILROAD; TO ARCATA.

Blue Lake station, in front of; top of rail-----	87.8
Korbel, 1.7 miles southwest of, 0.6 mile west of Blue Lake, north side of railroad, large boulder; aluminum tablet stamped "BB 1906 72"-----	85.726
Korbel, 6.2 miles west of, 3.6 miles east of Arcata, 300 feet south of Webster ranch house, south side of track, large boulder; aluminum tablet stamped "33.17 1906 58"-----	72.202
Arcata, southeast corner of Eighth and H streets, northwest corner of brick building 25 by 100 feet; aluminum tablet stamped "BB 18 1906 27"-----	27.109

ARCATA, ALONG EUREKA AND OREGON RAILROAD, TO EUREKA.

Bayside station, in front of; top of east rail-----	7.793
Northeast corner of Pacific Steamship Company's warehouse; nail in floor-----	8.273
Eureka, at intersection of Third and E streets, city bench mark No. 2-----	12.445
Eureka City Hall, east approach to, north side of steps, in top of granite post; aluminum tablet stamped "BB 1906-19 31"-----	30.934
Eureka, at intersection of Third and H streets, city bench mark No. 3-----	32.633
Eureka, north approach to court-house, west side of steps, granite post; aluminum tablet stamped "BB 1906-20-44"-----	44.059

HOOPA QUADRANGLE.

NEAR CHINA FLAT, ALONG ROAD, TO HOOPA.

China Flat, 6.3 miles north of, west edge of road, country rock; aluminum tablet stamped "BB 21, 1906"-----	1,354.915
Hoopa, 2.4 miles south of, 1,300 feet south of mile tree 63, 1,700 feet north of bridge, west edge of road, boulder; aluminum tablet stamped "BB 22 1906"-----	386.042

	Feet.
Hoopa, 1,000 feet north of Bigard's store, right edge of steps to United States Indian agent's office; aluminum tablet stamped "BB 352 23 1906"-----	351.270

HOOPA, NORTH ALONG ROAD AND TRAIL 7.5 MILES (SINGLE SPUR LINE).

Hoopa, 3.2 miles north of, 150 feet south of Soctish Creek, west edge of road, country rock; aluminum tablet stamped "BB 24 1906"---	308.482
Hoopa, 7.5 miles north of, west edge of trail, slate rock; aluminum tablet stamped "BB 25 1906"-----	1,006.208

HOOPA, SOUTHWEST ALONG TRAIL AND ROAD, TO FORKS OF ROAD 3.4 MILES NORTHWEST OF BERRY RANCH HOUSE.

Hoopa, 3.8 miles west of, 20 feet west of Fournmile Creek, large boulder; aluminum tablet stamped "B 1716 1906"-----	1,715.199
Hoopa, 6 miles west of, 10 feet south of trail, country boulder; aluminum tablet stamped "B 27 2899 1906"-----	2,900.323
Baer's ranch, 4.5 miles east of, north edge of trail, highest point, country rock; aluminum tablet stamped "B 28 1906 3495"-----	3,494.856

KORBEL QUADRANGLE.

AT BAERS RANCH.

Baer's ranch, 0.8 mile east of, 20 feet south of trail, very large boulder known as "14-mile rock;" aluminum tablet stamped "B 29 1359 1906"-----	1,358.113
Baer's ranch house, 1,000 feet southwest of, southwest corner of bridge, top of pier; aluminum tablet stamped "B 30 1906 732"-----	731.773

PUBLICATIONS OF THE UNITED STATES GEOLOGICAL SURVEY.

The publications of the United States Geological Survey consist of (1) Annual Reports, (2) Monographs, (3) Professional Papers, (4) Bulletins, (5) Mineral Resources, (6) Water-Supply and Irrigation Papers, (7) Topographic Atlas of United States—folios and separate sheets thereof, (8) Geologic Atlas of United States—folios thereof. The classes numbered 2, 7, and 8 are sold at cost of publication; the others are distributed free. A circular giving complete lists can be had on application.

Most of the above publications can be obtained or consulted in the following ways:

1. A limited number are delivered to the Director of the Survey, from whom they can be obtained, free of charge (except classes 2, 7, and 8), on application.
2. A certain number are delivered to Senators and Representatives in Congress for distribution.
3. Other copies are deposited with the Superintendent of Documents, Washington, D. C., from whom they can be had at prices slightly above cost.
4. Copies of all Government publications are furnished to the principal public libraries in the large cities throughout the United States, where they can be consulted by those interested.

BULLETINS CONTAINING ELEVATIONS.

72. Altitudes between Lake Superior and Rocky Mountains, by Warren Upham. 1891. 229 pp.
169. Altitudes in Alaska, by Henry Gannett. 1900. 13 pp.
175. Triangulation and spirit leveling in Indian Territory, by C. H. Fitch. 1900. 141 pp., 1 pl.
185. Results of spirit leveling, fiscal year 1900-1901, by H. M. Wilson, J. H. Renshaw, E. M. Douglas, and R. U. Goode. 1901. 219 pp.
274. A dictionary of altitudes in the United States (fourth edition), compiled by Henry Gannett. 1906. 1,072 pp.
281. Results of spirit leveling in the State of New York for the years 1896 to 1905, inclusive, by S. S. Gannett and D. H. Baldwin. 1906. 112 pp.
288. Results of spirit leveling in Pennsylvania for the years 1899 to 1905, inclusive, by S. S. Gannett and D. H. Baldwin. 1906. 62 pp.

Results of spirit leveling by the United States Geological Survey also appear in the appendices to the 18th, 19th, 20th, and 21st annual reports of the Director.

Address communications to the Director.

INDEX.

	Page.		Page.
A.			
Aberdeen	11, 99	Balcon Canyon	62
Acampo	15	Baldwin Lake	67
Acolita	31	Ballarat	88, 93, 94
Acton	21, 73, 74	Ballarat quadrangle	10-11, 92-95
Ager	28	Baldwin, D. H., work of	5
Agua Alta Spring	57	Ballena	62
Agua Caliente	61, 82	Ball Mountain	121
Agua Dulce	57	Banta	124
Alamitos canal	39	Barnard, E. C., work of	32, 105, 122
Alamo	123, 130	Baroda	86
Alamo Bonito	57	Barstow	8, 86-87
Alamo ranch	79	Barstow quadrangle	8, 86-87
Alamo River	37	Barton	112
Alcalde	109	Bassett	63
Alder Creek	73	Batavia	13
Alhambra	71	Baxter	115
Aliso	49, 51	Bayside	160
Aliso Canyon	73	Bealville	20
Aloha	44	Bean Creek Bridge	115
Alpine	78, 128	Bear Creek	127
Altamont	124	Bear Meadows	114
Alvord	11, 12, 100	Bear Valley	156
Amago	61	Beaumont	30
American mine	32	Bellavista	155
Amsterdam	114, 115	Ben 'All	142
Anderson	26	Bench marks, description of	6-7
Antelope	142	Benedict	54
Antelope Creek	154	Benicia	129
Antioch	140	Ben Lomond	127
Antioch quadrangle	139-140	Bennett	85
Araz	31	Bennett's Well	90-91
Arbuckle	149, 150	Berenda	17
Arcata	160	Bernardo	60
Arena	16	Berry ranch	160
Arguello	85	Bertram	31
Arlington	52	Big Arroyo	96
Armona	108	Big Bar	159
Arno	15	Big Bar quadrangle	158-159
Arroyo Poso Jhena	108	Biggs	24
Athlone	17	Biggs, L. F., work of	7, 86, 95, 98, 137, 157
Atwater	16	Big Meadows	110
Atwells Mills	106	Big Pine	100
Atwood	42	Big Trees quadrangle	121-122
Aurant station	70	Bill Williams Fork	35
B.			
Baer ranch	161	Binghamton	138
Bagley Flat	156	Birabent's house	84
Baird	26	Bishop	100
Bakers	122	Bishop quadrangle	11, 12, 100
Bakersfield	19	Rissell	8
Bakersfield quadrangle	19, 102-103	Black Diamond	140
Balaklala mine	156	Black Hawk mine	90
		Black Point	132
		Blacks	147
		Blaisdell quadrangle	33

	Page.		Page.
Blake	83	Capay quadrangle	144-145
Bloomington	64	Capell	131
Blout, E. S., work of	32, 123, 147	Capistrano	52
Blue Lake	160	Capistrano quadrangle	48, 52
Blue Ridge	107	Capitan	83
Blythe ranch	35	Carlsbad	47-48
Blythe triangulation station	35	Carmichael's ranch	79
Bodega	135, 138	Carpinteria	81
Bodega Roads	133	Carquinez quadrangle	13, 128-130
Bonsall	58	Casa Blanca	52
Borden	17	Casa Loma ranch	54
Boulder Creek	127	Cascade House	116
Bower Cave	116	Casitas Pass	78
Box Springs	53	Casmalia	85
Box S ranch	67	Cassidy Meadow	114
Brawley	38	Castle Dome	33
Brentwood	124	Castella	27
Brice siding	39	Castle Crag	27
Bridgeport	118	Cathedral Creek	119
Bridgeport quadrangle	117-118	Cedar Flat	159
Brighton	14	Cedar Grove	110
Brimley ranch	147	Cedar Knoll farm	131
Broderick	14, 143	Cellis's house	79
Brookside	30	Centerville	112, 156
Brown's cabin	82	Ceres	16
Brownstone	76	Cerritos	70
Buckhorn	76, 158	Chandler	23
Buhach	16	Chatsworth Park	74-75
Bulkey ranch	137	Chemehuevis Valley	35, 36
Burbank	71	Chico	24
Burcham's ranch	66	Chico quadrangle	24
Burdell	134	China Flat	159, 160
Burns Spring	68	Chino ranch	52
Burnt ranch	159	Chula Vista	52
Butano Ridge	127	Cienega	60-61, 71
Byron quadrangle	124	Cinnamon	107
		Citrona	144
		Citrus	11, 99
C.		Clark Lake quadrangle	58
Cabezon	30	Clarksburg	137, 138
Cactus	31	Clay Point	57
Cactus Flat	67	Clayton	124
Cadnassa	145	Clearwater Creek	118
Cajon	65	Cliff Camp	110
Calabasas	74	Clovis	112
Calabasas quadrangle	74	Coahuila	55
Calexico	38-39	Coalinga	108-109
Caliente	20, 104, 132	Coalinga quadrangle	108-109
Caliente quadrangle	19-20, 104	Cold Springs	82, 122
California, cooperation of	5	Cole	28
California Home for Feeble-Minded	132	College City	149
Calistoga	137	Collins ranch	112
Calkin	83	Collinsville	140
Cameron	20	Colorado River	34
Camp Mohave quadrangle	37	Colton	29, 64
Campo	46	Colusa	149, 150
Campo quadrangle	46	Colusa Junction	149
Camp Six	137	Colusa quadrangle	149-150
Camp Taylor	134	Compton	70
Camulos	76	Compton Landing	149
Camulos quadrangle	74, 75-76	Concepcion	83
Cana	25	Concord	123
Cannon triangulation station	139	Concord quadrangle	123
Canon	13	Contra Costa-Alameda County line	125
Canyon	53	Cook's ranch	129
Capay	145	Copley	26

	Page.
Copper City	87, 156
Copperopolis	121
Cordella	129
Corning	153
Corona	50, 51, 133
Corona quadrangle	49-50, 51-52
Corte Madera ranch	46
Cortina	150
Coso	93
Coso Hot Springs	93-94
Cosy Dell	65
Cotata	133
Cottonwood	25-26, 96, 112
Coulterville	115
Courtland	138
Courtland quadrangle	137-138
Cow Creek	122
Coyote Creek	96
Coxey's ranch	66
Crabtree Meadow	99
Crane Creek	116
Crary	50, 51
Creston	129
Crinoline	122
Crowe, H. S., work of	62, 69
Crown Valley	110
Cuamonga quadrangle	63
Cuyama ranch	82
Cuyamaca quadrangle	45-46
Curry	139

D.

Dalzura	45
Dana Fork	119
Danville	124
Dardanelles quadrangle	122
Darwin	93, 94
Davis	23
Davis, E. P., work of	128
Davisville	14, 144
Davisville quadrangle	14, 23, 142-143
Daylight Springs	91
Deep Canyon	57
Deep Creek	66
Deep Creek quadrangle	66
Delano	19
Del Mar	42
Delphi	60
Déltá	26-27
Deluz	59
Denverton	139
Delevan	148
Derby Camp	146
Descanso	46
Desert Well	89
Diamanta	55
Dinkey Meadows	113
Divide	83
Dixie	9, 10
Dixon	13-14, 139
Don	48, 52
Donahue ranch	159
Douglas, E. M., work in charge of	5
Douglas, G. C., work of	141, 142
Downey quadrangle	70

	Page.
Dry Camp	30
Dry Creek	154
Drylyn	31
Dry Meadows	96
Dry Morongo	67
Dry Slough	150
Dublin	125
Dunbar	132
Duncans Mills	137-138
Dundee	71
Dunlap	111
Dunlap quadrangle	111-112
Dunnigan	145-147
Dunnigan quadrangle	146-147
Dunsmuir	27
Durham	24
Durmid	31

E.

Eagle well	34
East Palmdale	78
East Ramona	62
Edgewood	28
Egan	54
Ehrenberg	34
Ehrenberg special quadrangle	34-35
Eighteenmile	9
Eisenecke	46
Eldridge	132
Elk Grove	14
Elkhorn	142-143
Ellendale	139
Ellis	124
Elmira	13, 138, 139
Elmore	26
Elsinore	53
Elsinore quadrangle	30, 50-51, 52-54
El Sobrante	53
Elster's ranch	107
El Toro	49, 51
Elwood	81
Ely	133, 135, 144
Emigrant Spring	92
Encinitas	47
Enterprise Mill	107
Epworth	75
Escondido	60
Escondido quadrangle	59-60
Esmar	16
Esparto	145
Eureka	122, 133, 160
Eureka quadrangle	160
Excelsior	148
Exeter	105

F.

Fairfax	136
Fairfield	13, 129, 130, 139, 144
Fairmont	78
Fairoaks quadrangle	14, 142
Fairview	146
Fairville	132
Fallbrook	59
Famosa quadrangle	19

	Page.		Page.
Farewell Gap	106	Glide Gun Club	137
Farmer, R. A., work of	9, 29, 47, 98, 105, 109, 114, 137, 141, 147	Golden Gate	151
Farmington	120	Goleta	81
Farwell	126	Goleta special quadrangle	81-82
Fawnskin Valley	67	Goode, R. U., work in charge of	5
Felton	127	Goodwin ranch	121
Fernando	74	Goodyear	13, 129
Fernando quadrangle	22, 72	Gordon	112
Fifteenmile Point	66	Gordon, G. L., work of	32
Figtree John	57	Gosford	102
Fillmore	76	Goshen	18, 105, 108
Fisherman	134	Graciosa	84
Fish Spring	57	Grand Island	138
Fletcher, L. C., work of	5, 47, 86, 123, 128, 137, 142	Grand Island Bridge	138
Florence	70	Granite Wells	87, 88
Florin	14	Grant Lake	119
Flowing Well quadrangle	31	Grantville	43
Forest Lake	15	Gray	159
Forestville	133	Great Western Divide	96, 107
Fort Mohave	37	Green Canyon	82
Fort Tejon	79	Green Valley	60
Fowler	18	Greenwood	151
Francis	11	Gridley	24
Franz Valley	137	Griffin	80, 134
Freeman	10, 88	Grimes Landing	149
Freestone	133	Grimes quadrangle	149
French Camp	15	Grimes ranch	75
Freshwater	150	Guadalasca	76
Fresno	17-18, 112	Guadalupe	85
Fresno quadrangle	17-18, 112	Guadalupe quadrangle	85-86
Frink	31	Guerneville	137
Fruto quadrangle	149-150, 152-153	Guerneville quadrangle	136-137
Fry, E. M., work of	142, 148	Guinda	145
Fulton	133	Gypsum	50
Furgeson mine	116		
Furnace Creek	91	H.	
Furnace Creek quadrangle	90-92	Haas ranch	159-160
Furnace Creek ranch	91	Hamilton, R. A., work of	63
		Hamilton ranch	105
G.		Hamlet	134
Galt	15	Hanford	108
Gannett, S. S., work in charge of	5	Hanford quadrangle	18, 108
Garden	88, 89	Happy Gap	110
Garden of Eden	56	Hardy	117-118
Garen	85	Hardy, W. V., work of	37, 40, 41, 105, 108
Garnsey	71	Hardy triangulation station	40
Gata	83	Harman Barranca	77
Gaviota	83	Harmony	131
Gazelle	28	Harold	21, 78
Genesee	121	Harris	83
German ranch	79	Hartley	139
Germantown	151	Hartley, H., work of	148
Geyserville quadrangle	136	Hatch's ranch	80
Gilbert ranch	12	Havilah	103-104
Girard	20	Hawai Meadows	10
Glatke, E. W., work of	32, 147	Hawkins Bar	159
Glamis	31	Heber	38
Gleason	39	Hectors	118
Glenella	60	Helena	158
Glen Ellen	132	Herrold, G. H., work of	40, 47
Glen Helen ranch	64	Hershey	146
Glenn	148, 152	Hesperia	65
Glen. ranch	64, 65	Hesperia quadrangle	65-66
		Hiawatha	8
		High Grove	63

	Page.
Hilton	137
Hines	149
Hines ranch	149
Hodge's mine	34
Hodge's ranch	33
Holcomb Valley	67
Holt and Hickory canal junction	40
Holtville	38-40
Holtville quadrangle	38-40
Honda	85
Hooker	25
Hoopa	160-161
Hoopa quadrangle	160
Hoover, C. J., work of	32
Hopeton	115
Hornbrook	28
Horse Corral Meadow	110
Horse Shoec Bend	50
Hot Springs	97
Houston ranch	156
Howells Point	147
Hoyt ranch	72-73
Hueneme	76
Hueneme quadrangle	76
Huichica	132
Humphreys	112
Hunters Camp	98
Hunttoon	118
Huron	108

I.

Igerna	28
Imperial	38
Imperial quadrangle	38
Independence	99
Indian Wells	10, 56, 89
Indio	30, 56
Indio special quadrangle	30, 56-57
Inverness	135
Inyo quarry	11
Iris	31
Iron Mountain special quadrangle	156-157
Irma	81
Irvine	49
Irvington	126
Isabella	97
Iverson's ranch	127
Ivy station	71

J.

Jacinto	152
Jackson quadrangle	120
Jacobs, Z. C., work of	155, 157
Jalama	86
Jamestown	121
Jamul	45
Jamul quadrangle	45
Japatul	46
Jenkins Mountain	116
Jewetta	19
Johannesburg	88, 89, 90
John	147
Jordan Creek	118

	Page.
Julian	62
Junction City	158

K.

Kaiser quadrangle	113-114
Kaweah quadrangle	106-107
Keeler	10-11, 93
Keene	20
Kennett	26
Kenwood	133
Kenworthy	56
Kern	102, 104
Kern Lake	96
Kern River	97
Kernville	97
Kernville quadrangle	97-98
Keswick	26, 155
Keyes	16
Kidd Creek	137
King ranch	138
Kingriver	111
Kingsburg	18
Kings Springs	91
Kinsley	116
Kirkwood	153
Klinefelt	37
Knights Landing	23, 143, 146
Knights Landing quadrangle	23, 146
Knob	31
Korbel	137, 160
Korbel quadrangle	159-160
Kramer	8
Kramer quadrangle	8

L.

Lacross	77
Ladrillo	42, 43
La Honda	127
La Jolla	61
La Jolla quadrangle	42-44
Lake Chabot	129
Lake Tanaya	119
Lakeview	54, 84
Lakeville	133
La Liebre ranch	80
La Mesa Springs	43
Lamoine	27
Lancaster	21
Lang	22
Langs	72
La Presa	44
Las Cruces	83, 84
Las Flores	48, 59
La Sierra ranch	52
Las Pulgas	59
Lathrop	15, 124
Laws	11, 100-101
Lee, C. H., work of	69
Leland Stanford Junior University	128
Lemon	63
Lemoncove	105
Lemoore	108
Letcher	112

	Page.		Page.
Mount Goddard quadrangle.....	100	Olive	49-50, 51
Mount Lyell	118-119	Olivet	133
Mount Pinos quadrangle.....	80-81	Olive wood	52
Mount Vernon	88, 89, 94	Oluta	13
Mount Whitney quadrangle.....	11, 98-99	Ontario	63
Mud Springs.....	154	Onyx	97-98
Munroe, Hersey, work of.....	32	Ora	108
Murlin, A. E., work of.....	141	Orange	49
Murrieta	54	Orland	151, 152
Myoma Siding.....	30	Ortega	81
		Ortega Hill.....	80
		Otay	44, 45
N.		Owens Lake.....	11
Napa.....	131	Oxnard	76
Napa Insane Asylum.....	131	Ozena	80
Napa Junction	130		
Napa quadrangle	13, 130-132	P.	
Napa-Solano-Yolo counties	144	Pacheco	123, 155
Naples	81	Pacoima	22, 72
Narlon	85, 86	Pala	59
National City.....	44	Palmdale.....	21
Naud Junction	70	Palmdale quadrangle.....	8, 21, 78-79
Ned Gulch.....	116	Palms	71
Needles.....	36-37	Palm Springs.....	30, 56
Needles special quadrangle.....	36-37	Palo Alto.....	128
Nelson	24	Palo Alto quadrangle.....	127-128
Nelson, C. L., work of.....	41, 69, 128, 137, 148	Palo Verde.....	34
Nelson's well.....	91	Pampa	20
Neroly	124	Parker	34-35
New Almaden quadrangle.....	127	Parker quadrangle.....	35-36
Newbury Park ranch.....	75	Parsons	122
Newhall.....	22, 74	Pasadena quadrangle.....	70-71
Ney ranch	118	Pauba ranch.....	58
Niagara Creek	122	Pauma ranch.....	59
Nigger Canyon	60	Payson's ranch.....	12
Niles.....	126	Perkins, E. T., work of.....	40-41, 63
Nojoqui Pass.....	83	Perris	53
Nord	24	Petaluma	134, 135
Nordhoff	77	Pete McGuire.....	35
Norman	148, 149	Philips, Ress, work of.....	86
North Mount Glen.....	53	Picacho	33
Novata.....	134, 135	Picacho mine.....	32
		Picacho quadrangle.....	33-34
O.		Pilot Peak quadrangle.....	10, 87-89
Oak Bottom.....	157	Pine Mountain.....	80
Oakdale	130	Pine Ridge.....	13
Oakdale quadrangle.....	16, 121	Pine Valley.....	45
Oak Grove.....	61, 106	Piper ranch.....	12
Oak Knoll	131	Pixley	20
Oakland	123	Plainfield.....	144
Oakland Point.....	123	Pleasanton	126
Oakview Spur.....	78	Pleasanton quadrangle.....	125-126
Oakville.....	131	Pleasant Valley.....	130
Oasis.....	12	Point Reyes.....	134, 135
Oberlin	62	Pollasky	112
O'Byrnes Ferry.....	121	Pomona	63
Occidental	133	Pomona quadrangle.....	63
Oceanside.....	48	Pope Valley quadrangle.....	144-146
Oceanside quadrangle	47-48	Port Costa.....	128
Ogilby	31, 33	Portersville.....	105, 106
Oil triangulation station.....	103, 104	Portola	128
Olancha	10, 96	Poso Creek.....	103
Olancha quadrangle.....	10	Poso triangulation station.....	103
Old Beach	31, 37	Potrero	46
Old Woman Springs.....	67	Potrero Hills.....	140
Old Santa Ynez Mission.....	83	Princeton.....	148, 149

	Page.		Page.
Prize	150	Russian River	133, 137
Proberta	25	Ruthven	31
Puente	63	Ryus, L. D., work of	32,
Puerta Cruz	61	102, 109, 117, 128, 141, 142	
Punta Gorda	77	S.	
Purissima Mission	84	Sacramento	14, 142
Q.		Sacramento quadrangle	14
Quinns Camp	106	Sage Creek	130
R.		St. Elmo	90
Radec	60	St. Francis ranch	79
Rainbow	58	St. Helena	130, 131, 146
Ramona quadrangle	60-62	St. John	152
Rancheria	107	Salida	16
Randsburg	88, 89	Salton	31
Rattlesnake Canyon	68	Salton quadrangle	31, 37, 57
Ravenna	21, 74	Salt Springs	120
Reclamation	132	San Antonio quadrangle	64-65
Red Bluff	25, 153, 154	San Bernardino	64
Red Bluff quadrangle	25-26	San Bernardino Forest Reserve	55-56
Redding	26	San Bernardino quadrangle	29, 63-64
Redding quadrangle	26-27, 155-157	Sandia Canyon	59
Redlands Junction	30	San Diego	41-44
Redlands quadrangle	30	San Diego quadrangle	41, 44-45
Red Mountain ranch	59	San Dieguito	43
Redondo quadrangle	69	Sand Spring	95
Redwood	128	San Fernando	72
Redwood Summit	160	San Fernando Pass	74
Reseda	74	San Fernando tunnel	74
Ricardo	9	San Francisco quadrangle	123
Rich	8	San Francisco ranch	75
Richfield	50	San Gabriel	71
Richland	69	San Geronimo	134
Rimlon	30	San Gorgonio quadrangle	67-68
Rincon	51, 61	San Jacinto	54
Rio Vista	141	San Jacinto quadrangle	30, 54-56
Rio Vista quadrangle	141	San Jose	126
Ripon	16	San Jose quadrangle	126
Ritter's house	78	San Juan	142
Riverside	50-51, 52, 53	San Juan Capistrano	48-49
Riverside quadrangle	50-51, 52-53	San Juan triangulation station	52
Rock Creek	96	San Julian ranch	84
Rock Creek quadrangle	64	San Luis Rey	60
Rockhold, J. E., work of	40	San Luis Rey Canyon	61
Rock Springs	66	San Luis Rey quadrangle	47-48, 58-60
Rockville	129, 130	San Marcos	60, 82
Rockwood	37	San Onofre	48, 52
Rocky Plains	155	San Pasqual	60, 62
Rodeo	130	San Pedro	69
Rodriguez	8	San Pedro quadrangle	69
Ronda	147	San Rafael	136
Rosamond	21	San Rafael Mountain	82
Rose	79	San Sevaire	64
Roseville	41	Santa Agueda	84
Rose mine	67	Santa Ana	49
Rough and Ready Landing	147	Santa Anita	83
Round Mountain	76	Santa Barbara	81
Routier	142	Santa Barbara special quadrangle	81
Rugby	51	Santa Cruz	127
Ruis's house	81	Santa Cruz quadrangle	127-128
Rumsey	145	Santa Margarita ranch	59
Rumsey quadrangle	145-146	Santa Maria	84, 85
Russell Valley	75	Santa Monica	71
		Santa Monica quadrangle	71
		Santa Paula	77

	Page.		Page.
Santa Paula quadrangle	77	South Etiwanda	63
Santa Rita	84, 85	Spanish ranch	147
Santa Rosa	133, 135	Sparkman's store	61
Santa Rosa quadrangle	132-135	Spencer's house	78
Santa Susana	75	Spread Eagle mine	157
Santa Susana Pass	75	Spring Creek	79
Santa Susana quadrangle	22, 74-75	Springville	76, 107
Santa Ynez	84	Squaw Hill Ferry	152
Santa Ynez quadrangle	82	Squaw Valley	111
Santa Ysabel	62	Stanislaus River	122
San Timoteo	30	Stella	157
Sardine Lake	119	Stewart	84, 85
Saticoy	77	Stockton	15, 120
Saugus	22, 74	Stockton quadrangle	15-16, 120
Savannah	71	Stoddard	144
Sea Cliff	77	Stone House	98
Searle, A. B., work of	123, 155	Stoner, S. N., work of	37, 69, 102
Sears Point	132	Stony Creek	152
Sebastopol	135	Stony Point	135
Selma	18	Stoval ranch	151
Selwyn	42, 43	Stovepipe	92
Seneges ranch	115	Strawberry	122
Semper, C. H., work of	13, 22, 95, 98, 102, 104, 105, 114, 122, 137, 141-142, 148, 154	Sudden	85
Sequoia	127	Suey ranch	84
Sequoia National Park	110	Sugarpine	121
Serena	81	Suisun	13
Serra	48	Sulphur Mountain Springs	77
Sespe	76	Summerland	81
Sespe River	80	Summit	65, 91, 92
Seventeen Palms	57	Sunnyside	44
Shannon, M. D., work of	98, 105	Sunol	126
Sharp triangulation station	39	Sunset Springs	39
Shasta	155-157	Sunset triangulation station	40
Shasta quadrangle	27-28	Surf	85
Shasta Springs	27	Surveyor's Well	92
Shaver	113	Sweetwater	44
Sheep Creek	64, 65	Sweetwater Junction	44
Shepards	78	Swingle	14
Shoemaker's ranch	64	Sycamore	149
Short station	70		
Sidds Landing	152	T.	
Simi	75	Tajiquas	83
Sims	27	Tamalpais quadrangle	136
Sisson	27	Tancred	145
Sites quadrangle	150-151	Tarpy	112
Sixmile House	114	Tarwater	136
Smith, C. R., work of	47, 62, 63, 98, 101, 117	Tarwater Hill	137
Smith Tank	91-92	Tassajero	125
Snelling	115	Taylor Flat	159
Snow Corral	113	Taylorville	134
Snow Flat	119	Teal	13
Soda Springs	119	Tehachapi	20
Solano	160	Tehama	25, 153, 154
Solano-Napa-Yolo counties	144	Tehama quadrangle	25, 153-154
Soldiers Home Camp	80	Tehipite quadrangle	110-111
Somis	76	Tejon Pass	79
Sonoma	132	Tejon quadrangle	79-80
Sonora	121	Temecula	58
Sonora Pass	122	Temescal	53
Sonora quadrangle	115-116, 121	Terra Cotta	53
Sorrento	42, 43	Tesla	125
Soulsbyville	121	Tesla quadrangle	124-125
South Cucamonga	63	Thatcher school	77
		Thenard	70
		The Pipes	68

	Page.		Page.
Thermal	30	Waldorf	85
Thomas ranch	55	Walker Lake	119
Thompson	131	Walkers Basin	104
Three Rivers	106	Walkers Landing	141
Three Springs	110, 111	Walkers Pass	98
Tioga mine	119	Walnut Creek	123
Tioga Pass	119	Walsh	142
Tipton	18-19, 106	Walters	30, 56
Tocaloma	134	Ward, C. C., work of	47, 63, 86, 123
Todd	135	Warner	61
Tolands Landing	140	Warner's ranch	61
Tolenas Springs	130	Warren's ranch	67
Tomales	134	Wasioja	82
Toro	56	Watson's ranch	42
Tortuga	31	Waverly	120
Tower House	158	Weaverville	158
Tranger's camp	106	Weaverville quadrangle	157-158
Traver	18	Webbs	115
Tremont	14	Webster	14
Trenton	133	Weed	23
Tropico	71	Weser	85
Trout meadow	96	West Well	36
Trubody	131	Wet Meadows	106
Tudor	23	Whereat, L. A., work of	154
Tujunga quadrangle	21, 72-74	Whitewater	30
Tulare	18	Whitewater Creek	68
Turlock	16	Wickiup Canyon	73
Turner, W. T., work of	47, 62	Wigmore	83
Twin Pine Springs	46	Wild Cat Creek	154
Tyler Island	141	Wildomar	54
		Wild Rose	92
U.		Wildwood	132, 145
Una Lake	78	Wilfred	133
Union	131	Wilkins Slough	147
University station	71	Williams	149, 150
Upton	27-28	Williams Canyon	82
		Willows	148, 151, 152, 153
V.		Willow Springs	88, 89, 140
Vacaville	139	Willows quadrangle	151-152
Vacaville quadrangle	13-14, 138-139	Wilmington	69
Vallejo	129	Wilson	135
Vallevista	55	Winchester	54
Valley	100	Windgate Pass	88, 90
Valley Ford	133-134	Winters	130
Valverde	53	Wolfkill	139
Vanden	13	Woodland	23, 143-144
Vandeventer	56, 57	Woodland quadrangle	14, 23, 143-144
Vascoe	124	Wragg Canyon	144
Ventura	77	Wynola	62
Ventura quadrangle	77-78		
Verdemont	64	Y.	
Vertical Falls	73	Yolo	143
Victor	66	Yolo-Solano-Napa counties	144
Victor quadrangle	66	Yosemite	116-117
Vina	25	Yosemite quadrangle	116-117
Vina quadrangle	25, 152-153	Yosemite Valley	117
Vincent	21, 74	Yountville	131
Vineyard	132	Ysidora	59
Violet	139	Yuba City	23
Virginia	42	Yulupa	132
Visalia	105	Yuma	31, 32
Visalia quadrangle	18-19, 105-106	Yuma quadrangle	31, 32
Vista	60		
Vogelson, J. A., work of	123, 128, 137	Z.	
Volcano	31	Zaca	83
Vombreyman ranch	147	Zamora	147