

DEGREE QUADRANGLE 36°-37°, 120°-121°

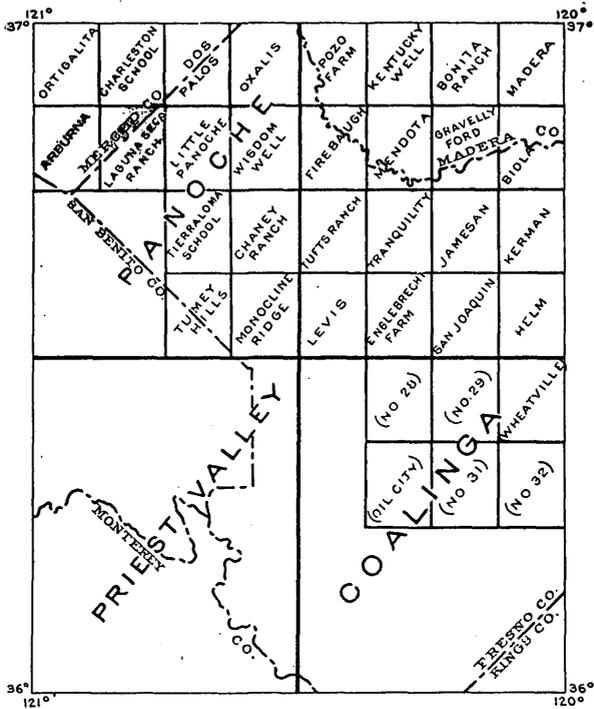


FIGURE 29.—Diagram of degree quadrangle 36°-37°, 120°-121°

ARBURNA QUADRANGLE

[Latitude 36° 45'-36° 52' 30"; longitude 120° 52' 30"-121°]

FRESNO AND MERCED COUNTIES

Primary leveling by L. F. Biggs in 1919

From Ortigalita quadrangle south and east along highways in northeast part of Arburna quadrangle into Laguna Seca Ranch quadrangle

	Feet
Old Ortigalita School, 1.0 mile south of, 20 feet west of road; summit of rock, chiseled "U. S. 808"-----	807.93
Langan ranch house, 0.2 mile northeast of, 800 feet south of road forks, on point of ridge; summit of boulder, chiseled "U. S. 901"-----	900.92
Langan ranch house, 1.0 mile east of, 50 feet south of crossroads, on summit of flat boulder; bronze tablet stamped "116 1919 B B 1,002"-----	1,001.813

BIOLA QUADRANGLE

[Latitude 36° 45'-36° 52' 30''; longitude 120°-120° 07' 30'']

FRESNO AND MADERA COUNTIES

Primary leveling by L. F. Biggs in 1919

From Madera quadrangle south, east, and north along highways near north border of Biola quadrangle

	Feet
T. 12 S., R. 17 E., quarter corner on west side of sec. 23, west end of brick culvert, at road east; chiseled square, marked "U. S. 235"-----	235. 14
T. 12 S., R. 17 E., quarter corner on east side of sec. 23, north end of concrete culvert, at T road south; chiseled square, marked "U. S. 242"-----	242. 37
Madera, 6.0 miles south of, 40 feet north and 20 feet west of crossroads, at quarter corner on east side of sec. 24, T. 12 S., R. 17 E., in concrete post; aluminum tablet stamped "245 B B 1919 2"-----	245. 766
T. 12 S., R. 18 E., quarter corner on east side of sec. 19, at crossroads, in corner fence post painted "U. S. 252"; spike-----	252. 06
From north border of quadrangle south along highways through center of quadrangle into Kerman quadrangle	
T. 12 S., R. 18 E., southwest corner of sec. 19, at T road west, in telephone pole painted "U. S. 246"; spike-----	246. 61
T. 12 S., R. 18 E., northwest corner of sec. 31, at crossroads, in base of power pole painted "U. S. 244"; spike-----	244. 77
T. 12 S., R. 17 E., southeast corner of sec. 36, at crossroads, in corner fence post painted "U. S. 249"; spike-----	249. 12
Skaggs Bridge, 160 feet northwest of, west edge of road, in fence line; iron post stamped "U. S. E. D. Elev. 231.8 B. M. 334"-----	228. 542
Skaggs Bridge, west end of north pier of concrete bridge over San Joaquin River; aluminum tablet stamped "227 1919 B B 3"-----	227. 414
Skaggs Bridge, 0.7 mile south of, 40 feet south of crossroads, east end of concrete culvert; chiseled square, marked "U. S. 245"-----	245. 78
Vinland, south bank of Perrin Canal, 40 feet west of crossroads, north end of culvert; chiseled square, marked "U. S. 245"-----	245. 04
Kerman, 5 miles north of, 700 feet south of Ashlin Ave., west end of concrete culvert; chiseled square, marked "U. S. 244"-----	244. 14
Kerman, 4 miles north of, 500 feet north of U. B. Church, north end of east side of concrete culvert over canal; aluminum tablet stamped "242 1919 B B 4"-----	242. 178
Kerman, 3.5 miles north of, opposite Kerman High School, at T road east, in telephone pole painted "U. S. 231"; spike-----	231. 45
Kerman, 3 miles north of, 50 feet southeast of crossroads, in corner fence post painted "U. S. 227"; spike-----	227. 35

BONITA RANCH QUADRANGLE

[Longitude 36° 52' 30''-37°; longitude 120° 07' 30''-120° 15']

MADERA COUNTY

Primary leveling by L. F. Biggs in 1919

From Kentucky Well quadrangle east along highway to point beyond center of Bonita Ranch quadrangle, thence north to sec. 7, T. 11 S., R. 17 E.

	Feet
T. 11 S., R. 16 E., south side of sec. 33, 50 feet west of canal bridge, north fence line of road, opposite power pole 181, in concrete post; bronze tablet stamped "191 13 1919 B B"-----	192. 134
T. 11 S., R. 16 E., south side of sec. 34, in front of power pole 165, in fence post painted "U. S. 199"; spike-----	199. 17

	Feet
T. 11 S., R. 16 E., south side of sec. 35, in base of power pole 149 painted "U. S. 206"; spike-----	206.35
T. 11 S., R. 16 E., southeast corner of sec. 35, in base of power pole 140 painted "U. S. 209"; spike-----	209.67
Tps. 11 and 12 S., Rs. 16 and 17 E., corner of secs. 1, 6, 31, and 36, at north road fence, 30 feet east of power pole 125, on concrete post; bronze tablet stamped "218 B B 1919 14"-----	218.029
T. 11 S., R. 17 E., quarter corner on south side of sec. 31, at T road south, in power pole 120 painted "U. S. 221"; spike-----	221.81
T. 11 S., R. 17 E., near north quarter corner of sec. 31, west end of concrete culvert; chiseled "U. S. 227"-----	227.68
T. 11 S., R. 17 E., quarter corner on south side of sec. 19, at angle west in road, in corner fence post painted "U. S. 225"; spike---	225.81
T. 11 S., R. 17 E., NW. ¼ sec. 19, 0.4 mile south of farm house, 50 feet west of road, on north bank of creek; top of canal gate painted "U. S. 233"-----	233.31
T. 11 S., R. 17 E., near southwest corner of sec. 18, 0.4 mile west of farm house, west bank of canal, at angle in road, in fence post painted "U. S. 229"; spike-----	229.80
T. 11 S., R. 17 E., at southwest corner of sec. 7, 1 mile north by 6 miles west of Madera, 1,000 feet east of windmill and water tank, 50 feet east of fence line north, north side of road, on fence line; iron post stamped "222 1913"-----	222.497

From point near center of quadrangle south along highways into Gravelly Ford quadrangle

T. 12 S., R. 16 E., southeast corner of sec. 1, in gate post painted "U. S. 217"; spike-----	217.16
T. 12 S., R. 16 E., northeast corner of sec. 18, at crossroads, in gate post painted "U. S. 215"; spike-----	215.95
T. 12 S., R. 16 E., northeast corner of sec. 19, in fence post painted "U. S. 211"; spike-----	211.88

Primary leveling by D. S. Birkett in 1913

From Madera quadrangle west along highways near north border of Bonita Ranch quadrangle into Kentucky Well quadrangle

T. 11 S., R. 17 E., northwest corner of sec. 16, 1.25 miles north by 4 miles west of Madera, south side of road, 50 feet east of T in electric-power line, in power-line pole marked "U. S. 240 B. M."; railroad spike-----	240.25
T. 11 S., R. 17 E., northwest corner of sec. 17, 1.25 miles north by 5 miles west of Madera, south side of road, at angle in telephone line; railroad spike in telephone pole, marked "U. S. 233 B. M."--	233.09
T. 11 S., R. 17 E., SW. ¼ sec. 7, 1.25 miles north by 6 miles west of Madera, 1,000 feet east of windmill and water tank, 50 feet east of fence leading north, north side of road, on fence line; iron post stamped "1913 222"-----	222.497
T. 11 S., R. 16 E., near quarter corner between secs. 11 and 14, 0.5 mile north of ranch house, 75 feet south of intersection of fence, 50 feet south of small slough, in gate post marked "U. S. 213 B. M."; railroad spike-----	213.65

	Feet
T. 11 S., R. 16 E., near northeast corner of sec. 15, 1.25 miles north by 8 miles west of Madera, 12 feet south of intersection of fences, in gate post marked "U. S. 212 B. M."; railroad spike-----	212. 59
T. 11 S., R. 16 E., 33 feet east and 33 feet north of quarter corner between secs. 15 and 16, 0.75 mile north by 9 miles west of Madera; iron post stamped "1913 200"-----	200. 993

CHANNEY RANCH QUADRANGLE

[Latitude 36° 37' 30''-36° 45'; longitude 120° 30'-120° 37' 30'']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Sheep Ranch quadrangle south along highways near east border of Chaney Ranch quadrangle to Telephone, thence southwest to Hayes	Feet
Tps. 13 and 14 S., R. 13 E., corner of secs. 1, 2, 35, and 36; top of 4-inch iron pipe filled with concrete buried flush with ground, marked "U. S. 274" on 2 by 4 inch redwood stake-----	274. 18
T. 14 S., R. 13 E., NW. ¼ sec. 2, 400 feet south of second-class crossroads, 30 feet west of road, in concrete post; bronze tablet stamped "275 1919 68 B B"-----	275. 102
M. & L. Telephone ranch, 3.2 miles north of, north bank of Panoche Creek, 20 feet west of road; top of 2 by 6 inch redwood stake, scribed "U. S. 299"-----	299. 42
M. & L. Telephone ranch, 2.2 miles north of, 20 feet west of road; top of 2 by 2 inch stake, scribed "U. S. 298"-----	298. 30
M. & L. Telephone ranch, 7.4 miles north of, 50 feet northwest of crossroads; top of 2 by 6 inch redwood stake, scribed "U. S. 306"-----	306. 15
M. & L. Telephone ranch, 180 feet northwest of windmill, near fence corner, in concrete post; bronze tablet stamped "316 1919 B B 71"-----	315. 414
M. & L. Telephone ranch, 0.6 mile south of, in telephone pole, scribed "U. S. 318"; spike-----	318. 04
M. & L. Chaney ranch, 2.9 miles northeast of, in telephone pole; painted "U. S. 341"; spike-----	340. 96
Chaney ranch, 1.8 miles northeast of, north of road, 5 feet east of white telephone pole, in concrete post; bronze tablet stamped "366 72 1919 B B"-----	365. 541
Chaney ranch, 0.7 mile northeast of, in telephone pole, painted "U. S. 393"; spike-----	392. 80
Chaney ranch, 60 feet north of Mendota road, at pipe line crossing, in telephone pole 36-7, scribed "U. S. 411"; spike-----	411. 63
Chaney ranch, 1.2 miles west of, 30 feet north of road, 80 feet northeast of canal, 10 feet east of telephone pole, in concrete post; bronze tablet stamped "73 1919 B B 440"-----	440. 043
Chaney ranch, 2 miles west of, in telephone pole, scribed "U. S. 461"; spike-----	460. 52
Chaney ranch, 3.2 miles west of, 100 feet west of creek, in telephone pole, scribed "U. S. 499"; spike-----	498. 36
Hayes, on road leading from Mendota and Fresno to mouth of Big Panoche Canyon, 95 feet north of Hayes store; iron post stamped "502 Cal. 1918 G"-----	502. 143

	Feet
From Tierra Loma School quadrangle southeast along highways to Chaney Tierra Loma School, 3.4 miles southeast of, 6 feet east of Valley pipe line, 15 feet southeast of crossroads, 5 feet north of telephone pole 39-23, in concrete post; bronze tablet stamped "390 1919 B B 39"-----	390.301
Tierra Loma School, 4.3 miles southeast of, at crossroads, in base of telephone pole 39-0 scribed "U. S. 400"; spike-----	400.89
Tierra Loma School, 5.3 miles southeast of, Valley Pipe Line Co.'s pipe line bridge over Panoche Creek, in south concrete abutment; bronze tablet stamped "405 1919 B B 40"-----	405.447
Chaney ranch house, 1.0 mile northwest of, in base of telephone pole 37-2 scribed "U. S. 407"; spike-----	407.70
Chaney ranch, 60 feet north of Mendota road, at pipe-line crossing, in telephone pole 36-7 scribed "U. S. 411"; spike-----	411.63
From Telephone ranch along highways near east border of quadrangle	
M. & L. Telephone ranch, 0.6 mile south of, in telephone pole painted "U. S. 318"; spike-----	318.04
M. & L. Telephone ranch, 1.8 miles south of, 1,000 feet north of crossroads, 20 feet west of road; top of 2 by 4 inch redwood stake scribed "U. S. 317"-----	316.85
M. & L. Telephone ranch, 2.0 miles south of, 40 feet northwest of crossroads, in concrete post; bronze tablet stamped "74 1919 B B 319"-----	319.393
M. & L. Telephone ranch, 4.4 miles south of, 0.5 mile east of water tank, 30 feet west of road; top of 2 by 4 inch redwood stake scribed "U. S. 337"-----	336.62

CHARLESTON SCHOOL QUADRANGLE

[Latitude 36° 52' 30"-37°; longitude 120° 45'-120° 52' 30"]

MERCED COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Dos Palos quadrangle and Camp No. 13 northwest along highways to Charleston School	
Camp 13, 300 feet southwest of house, bridge over northern of two canals, in east end of south concrete abutment; bronze tablet stamped "133 1919 B B 35"-----	133.526
Camp 13, 0.9 mile northwest of, northeast corner of canal bridge; spike, painted "U. S. 132"-----	132.51
Camp 13, 2 miles northwest of, sixth telephone pole south of tele- phone line west, at angle north in canal; spike, painted "U. S. 128"-----	128.77
Charleston School, 1.0 mile south by 2 miles east of, 500 feet east of large barn, 30 feet east of bridge over canal, at fence corner, in concrete post; bronze tablet stamped "128 1919 B B 36"-----	128.063
Charleston School, 1.2 miles east of, at head gate 292, in floor of culvert, painted "U. S. 128"; spike-----	128.94
Charleston School, northeast corner of school yard, at junction of wagon road and canal; iron post stamped "149 G 1909"-----	149.120

	Feet
From Charleston School along highway west 3.2 miles to northwest corner of quadrangle, thence south 2 miles and into Ortigalita quadrangle (leveled twice)	
Charleston School, northeast corner of school yard, at junction of wagon road and canal; iron post stamped "149 G 1909" (Bull. 81, p. 84)-----	149.120
Charleston School, 1 mile northwest of, southwest corner of canal bridge, painted "U. S. 149"-----	150.02
Charleston School, 1.5 miles northwest of, southwest corner of canal bridge, at crossroads; spike (disturbed, bridge broken down)----	149.03
Charleston School, 1.5 miles north by 1 mile west of, at five corners, in corner fence post painted "U. S. 156"; spike-----	155.96
Charleston School, 1 mile north by 2.5 miles west of, center of second-class crossroads; top of rock buried flush with ground, chiseled "U. S. 169"-----	169.47
Valley pump station No. 5, 0.5 mile northeast of, in floor of canal bridge painted "U. S. 206"; spike-----	206.27
Valley pump station No. 5, 0.4 mile east of, at second-class crossroads, in corner fence post painted "U. S. 228"; spike-----	228.60
From point near Valley pump station in Ortigalita quadrangle southeast along highways to Laguna Seca Ranch quadrangle (leveled twice to b. m. 354)	
Valley pump station No. 5, 1.5 miles southeast of, in base of corner fence post painted "U. S. 250"; spike-----	250.78
Valley pump station No. 5, 2.6 miles southeast of, in base of telephone pole 61-4 painted "U. S. 261"; spike-----	261.96
Valley pump station No. 5, 3.5 miles southeast of, 10 feet west of gate, 15 feet west of Valley pipe line, on concrete post marking east and west section line; bronze tablet stamped "110 1919 B B 317"-----	317.432
Valley pump station No. 5, 4.5 miles southeast of, in base of telephone pole 58-7 painted "U. S. 318"; spike-----	318.45
Valley pump station No. 5, 6.5 miles southeast of, in base of telephone pole 57-4 painted "U. S. 332"; spike-----	332.48
Little Panoche Creek, 7.5 miles northeast of; iron post stamped "341 1909 G" (Bull. 481, p. 84, Elev. 340.52). This bench mark disturbed and reset on pipe line as follows:	
Valley pump station No. 5, 7.6 miles southeast of, 7.5 miles north of Panoche Creek, 6 feet east of Valley pipe line, 10 feet west of telephone pole 56-5; iron post stamped "354 G 1909"-----	354.235
Valley pump station No. 5, 8.5 miles southeast of, in base of telephone pole 53-4 painted "U. S. 301"; spike-----	301.43

Primary leveling by W. H. Monahan in 1909

From Laguna Seca Ranch quadrangle north along highways to Los Banos quadrangle	
Little Panoche Creek, 5.40 miles northwest of, at base of foothills, 0.25 mile north of wagon road, a large stone sunk in the ground 2 feet, wooden post sunk beside it; aluminum tag stamped "363"-----	363.35
Little Panoche Creek, 6.45 miles northwest of, 15 feet west of wagon road, 1,650 feet south of old deserted building, 0.50 mile east of foothills; iron post stamped "Cal. 1909 341 G"-----	340.744

	Feet
Little Panoche Creek, 7.44 miles northwest of, 10 feet north of wagon road, 1 mile east of foothills; a bottle in ground with post sunk beside it, aluminum tag stamped "287"-----	286.31
Little Panoche Creek, 8.48 miles northwest of, 10 feet west of wagon road between canal and foothills; a bottle in ground with board sunk beside it, aluminum tag stamped "214"-----	213.84
Little Panoche Creek, 9.98 miles northwest of, at forks of road, 75 feet west of San Joaquin & Kings River Canal & Irrigation Co.'s (Inc.) canal; iron post stamped "Cal. 1909 150 G"-----	149.960
Jamison ranch, Miller & Lux, proprietors, at southeast corner of fence surrounding dwelling, in fence post; spike, aluminum tag stamped "149"-----	148.87
Jamison ranch, 1.31 miles northwest of, in fence post, 25 feet west of canal; spike, aluminum tag stamped "149"-----	148.68
Charleston School, northeast corner of school yard, at junction of wagon road and canal; iron post stamped "1909 149 G"-----	149.120
Charleston School, 1.17 miles northwest of, on west side of road, 25 feet west of canal, in fence post; spike, aluminum tag stamped "147"-----	146.790

Primary leveling by L. F. Biggs in 1919

From point 1.2 miles east of Charleston along highways north 1 mile and east 3 miles (leveled twice)	
Charleston, 1 mile north by 1 mile east of, 100 feet southeast of canal bridge, in fence post painted "U. S. 124"; spike-----	124.56
Charleston, 1 mile north by 2 miles east of, at T fence and second-class road north, in fence post painted "H. S. 109"; spike-----	109.94
Charleston, 1 mile north by 3 miles east of, at angle in fence north, in corner fence post painted "U. S. 105"; spike-----	105.42
Charleston, 1 mile north by 4 miles east of, 20 feet west of canal, at turn in road south, in corner fence post painted "104"; spike----	104.85

COALINGA QUADRANGLE

[Latitude 36°-36° 30'; longitude 120°-120° 30']

FRESNO AND KINGS COUNTIES

Primary leveling by W. V. Hardy in 1903, by J. W. Muller in 1907, and by L. F. Biggs and W. H. Monahan in 1908

From bench mark 4 miles west of Lethent west along Southern Pacific R. R. to Alcalde	
	Feet
Huron, 4.3 miles northeast of, 50 feet south of track, 3 feet east of telegraph milepost 276; iron post stamped "306 G"-----	306.666
Huron schoolhouse, 2.5 feet south of entrance; iron post stamped "380 G"-----	380.731
Arroyo Pasajero, 1 mile southwest of, 50 feet south of track, 3 feet east of telegraph milepost 285; iron post stamped "455 G"-----	455.647
Ora, 4 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"-----	569.702
Ora, 2.1 miles east of, 50 feet south of track, 5 feet east of telegraph milepole 292; iron post stamped "606 G"-----	606.601

	Feet
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. 687
Coalinga, southwest end of station; iron post stamped "671 G." (This bench mark has been moved, but its elevation is not materially changed)-----	671. 652
Coalinga, 1.7 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. 610
Alcalde, 70 feet north of station, between signboard posts; iron post stamped "852 G"-----	852. 714
From point 1.7 miles southwest of Coalinga north and east to California Limited Oil Co.'s property, thence south to Ora	
Coalinga, 3 miles west of, 20 feet east of road, 120 feet northeast of southwest corner of sec. 30, T. 20 S., R. 15 E.; iron post stamped "No. 1, 1907 G 766"-----	766. 623
Coalinga, 5 miles northwest of, 1 mile north of Associated Oil Co.'s pump plant, 30 feet east of section corner, 10 feet east of road; iron post stamped "824 No. 2, 1907 G"-----	824. 065
Coalinga, 7.5 miles northwest of, 1,000 feet north of big tank house where road crosses summit, 40 feet east of road; iron post stamped "1,244 No. 3, 1907 G"-----	1, 244. 756
Coalinga, 8 miles north of, on Oil City road, 50 feet west of large drain, 10 feet southwest of junction of roads; iron post stamped "1,157 No. 4 1907 G"-----	1, 158. 062
Coalinga, 12 miles north of, 400 feet south of California Limited Oil Co.'s office, 300 feet north of big machine shops, 10 feet south of road, 2 feet east of fence on line between secs. 21 and 22, T. 19 S., R. 15 E.; iron post stamped "1,467 No. 5, 1907 G"-----	1, 467. 488
Coalinga, 10.5 miles northeast of, on fence line between property of Standard Oil Co. and California Limited Oil Co., on north and south line, south end of fence, top of iron fence post 8 inches in diameter, 4 feet high; painted point, post painted "U. S. B. M. 973," aluminum tag stamped "973" tacked on post brace-----	973. 62
Coalinga, 9 miles northeast of, 400 feet west of Standard Oil Co.'s pump plant No. 1, 100 feet southwest of large black oil tank, 30 feet southwest of junction of roads; iron post stamped "806 No. 6, 1907 G"-----	806. 843
Coalinga, 6.5 miles northeast of, on road to Standard Oil Co.'s pump plant No. 1, 40 feet south of junction of four roads, 50 feet west of Coalinga and Fresno signboard; iron post stamped "816 No. 7, 1907 G" (disturbed)-----	816. 781
Coalinga, 4 miles northeast of, 50 feet west of road to Standard Oil Co.'s pump plant No. 1; iron post stamped "718 No. 8, 1907 G"-----	718. 970
Ora, 100 feet south of station, 50 feet south of Southern Pacific railroad track, 400 feet south of Southern Pacific Co.'s big oil tanks, on W. V. Hardy's level line; iron post stamped "647 G"-----	647. 687
From Jones ranch northwest to Coalinga	
Kranhagen's ranch, 1.9 miles northwest of, 15 feet east of road; iron post stamped "1117 B 1908 51 B"-----	1, 116. 966

	Feet
Kranhagen's ranch, 4 miles northwest of, 0.8 mile west of L. Kranhagen's house, 30 feet south of section corner at road junction; iron post stamped "923 B 52 B 1908"-----	922. 827
L. Kranhagen's house, 0.9 mile northwest of, 500 feet east of school-house, 50 feet south of creek, south of road; iron post stamped "806 B 1908 B 53"-----	806. 165
Alvis ranch, 0.4 mile northwest of house, 25 feet south of junction of roads; iron post stamped "672 B 1908"-----	672. 058
Coalinga, 5.5 miles southeast of, 20 feet east of road, 25 feet northeast of wash, 350 feet north of cabin, at junction of road; iron post stamped "737 B 1908 B 55"-----	737. 016
Coalinga, 2.5 miles southeast of, at junction of roads, 0.5 mile south of ranch house; iron post stamped "647 B 1908 B 56"-----	646. 822

From point about 5 miles west of Alcalde to Coalinga, thence east and north to point about 13 miles southeast of Hayes

Crump's ranch, 5.2 miles east of, south of road, 50 feet south of Lewis Creek, in Waltham Canyon; iron post stamped "1076 B 1908 Cal"-----	1, 076. 503
Coalinga, in front of station; top of rail-----	670. 3
Ora, 8 miles northeast of, 20 feet west of wagon road, opposite small canyon on right; iron post stamped "648 B 1908 Cal"-----	648. 948
Standard Oil Co.'s pumping station, 2.8 miles north of, 25 feet east of wagon road, on sidehill; iron post stamped "653 Cal 1908 B"-----	653. 776
T. 19 N., R. 16 E., sec. 2, 10 feet west of wagon road, 250 feet south of Imperial Oil Co.'s pumping plant; iron post stamped "635 Cal 1908 G"-----	635. 497
Imperial Oil Co.'s pumping station, 4.1 miles north of, at foothill of range, 10 feet south of wagon road; iron post stamped "503 Cal 1908 G"-----	503. 192
Imperial Oil Co.'s pumping station, 6.4 miles north of, on line fence, 785 feet from southwest corner of Ladd's ranch; iron post stamped "504 Cal 1908 G"-----	504. 441
Ladd's ranch, 3.5 miles northwest of, 1.5 miles northwest of clump of cottonwood trees, opposite large canyon on left; iron post stamped "480 Cal 1908 G"-----	480. 400
Ladd's ranch, 8 miles northwest of, 2,798 feet south of gulch leading from canyon; iron post stamped "553 Cal 1908 G"-----	553. 760
Ladd's ranch, 11.9 miles northwest of, southeast corner of new barn at base of foothills, on a small plateau, 100 feet north of ravine; iron post stamped "578 Cal 1908 G"-----	577. 409

From Crump's ranch south to Stone Canyon

Stone Canyon, 7.5 miles northeast of, 1,000 feet northeast of G. E. Frame's ranch house, in large oak tree on west side of road; spike with aluminum tag stamped "1341"-----	1, 341. 55
Stone Canyon, 5.8 miles east of, on top of mountain 700 feet east of large canyon, on north side of road; iron post stamped "1908 Cal 1699 B"-----	1, 699. 699
Stone Canyon, 4 miles east of, south of road, on top of knoll where road turns to left, in base of small oak tree; spike with aluminum tag stamped "2593"-----	2, 593. 83

	Feet
Stone Canyon, 3 miles east of, 5 feet north of road where road leaves underbrush and enters open, in base of small oak tree; spike with aluminum tag stamped "3173"-----	3,173.57
Stone Canyon, 1.3 miles east of, 10 feet north of road, east of gulch, in base of large oak tree; spike with aluminum tag stamped "2883"-----	2,883.22

Primary leveling by Corps of Engineers, U. S. Army, in San Joaquin Valley in 1913-14

T. 16 S., R. 17 E., 20 feet north of southeast corner of sec. 36, on Fitzwilliam ranch, north side of road, 2 feet west of fence running north; iron post set in cement (U. S. C. E. b. m. 317)-----	194.497
Standard Oil Co.'s town pumping station, about 1.5 miles northwest of, on Coalinga to Mendota line, 50 feet north of fifth pole north of milepost 102 of Standard Oil Co.'s telephone line; iron post set in cement (U. S. C. E. b. m. 318)-----	202.900

DOS PALOS QUADRANGLE

[Latitude 36° 52' 30''-37°; longitude 120° 37' 30''-120° 45']

FRESNO AND MERCED COUNTIES

Primary leveling by L. F. Biggs in 1919

From Dos Palos south along highways into Little Panoche quadrangle

	Feet
Dos Palos, 0.5 mile north by 0.5 mile west of, 50 feet southeast of crossroads, in base of power pole 588 painted "U. S. 114"; spike--	114.86
Dos Palos, east side of concrete step to entrance to post office; chiseled square, marked "U. S. 116"-----	116.82
Dos Palos Union High School, south side of west entrance, top of concrete coping; bronze tablet stamped "120 22 BB 1919"-----	121.080
Dos Palos, 1 mile south of, southeast corner of bridge; spike, painted "U. S. 119"-----	119.61
Dos Palos, 1.4 miles south of, at T road north, east end of concrete culvert; chiseled "U. S. 121"-----	121.67
Dos Palos, 1.4 miles south by 1 mile west of, opposite T road north, in base of power pole painted "U. S. 116"; spike-----	116.34
South Dos Palos Grammar School, east end of steps, top of concrete coping; bronze tablet stamped "119 B B 1919 23"-----	119.403
South Dos Palos, 1 mile south of, in telephone pole painted "U. S. 122"; spike-----	122.43
South Dos Palos, 2.2 miles south of, in base of power pole painted "U. S. 131"; spike-----	131.94
South Dos Palos, 2.5 miles south of, west end of south concrete abutment of canal bridge; chiseled square, marked "U. S. 138" (reported destroyed)-----	138.83
South Dos Palos, 3.8 miles south of, southwest corner of canal bridge, in top of concrete retaining wall; bronze tablet stamped "154 1919 B B 24"-----	154.249
South Dos Palos, 4.9 miles south of, at T road west to Ora Loma, in power pole painted "U. S. 168"; spike-----	168.25

	Feet
South Dos Palos, 5.5 miles south of, at southwest corner of Dos Palos rancho yard, 20 feet northeast of T road east, on concrete post; bronze tablet stamped "176 1919 B B 25"-----	176. 119
From point 2.5 miles south of Dos Palos west along highways across center of quadrangle to Charleston School quadrangle	
South Dos Palos, 2.5 miles south by 1 mile west of, in base of telephone pole painted "U. S. 131"; spike-----	136. 01
South Dos Palos, 2.5 miles south by 2.2 miles west of, at T fence north, in canal gate at lateral north, painted "U. S. 138"; spike--	138. 53
South Dos Palos, 2 miles south by 3 miles west of, 0.3 mile northeast of house with red roof, in telephone pole painted "U. S. 133"; spike-----	133. 19
South Dos Palos, 2 miles south by 3.5 miles west of, 2.6 miles east of Camp 13, 100 feet south of south one of three canals, in front of two abandoned houses, 10 feet east of gate, on fence line, on concrete post; bronze tablet stamped "134 1919 B B 34"-----	134. 202
Camp 13, 0.9 mile east of, top of lateral head gate 250; spike, painted "U. S. 135"-----	135. 77

ENGLEBRECHT FARM QUADRANGLE

[Latitude 36° 30'-36° 37' 30"; longitude 120° 15'-120° 22' 30"]

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Tranquillity quadrangle southeast along highways into San Joaquin quadrangle	
Mendota oil station, 1.4 miles southeast of, in base of telephone pole 114; spike, painted "U. S. 169"-----	168. 70
Mendota oil station, 2.4 miles southeast of, 6 feet west of telephone pole 112-24, in concrete post; bronze tablet stamped "169 1919 B B 53"-----	169. 570
Mendota oil station, 3.3 miles southeast of, 50 feet south of main north and south road crossing, in base of telephone pole 112-4 painted "U. S. 174"; spike-----	174. 32
Mendota oil station, 4.1 miles southeast of, at branch telephone line leading south, in telephone pole 111-7 painted "U. S. 179"; spike--	179. 25
Mendota oil station, 5.3 miles southeast of, 20 feet north of fourth telephone pole north of milepost 110; iron post stamped "319 U. S. E. D. Elev. 189.0" (U. S. E. D. elev.=188.98)-----	185. 380
From point 2.4 miles southeast of Mendota oil station east along highways into San Joaquin quadrangle	
Mendota oil station, 2.4 miles southeast of, 6 feet west of telephone pole 112-24, in concrete post; bronze tablet stamped "169 1919 B B 53"-----	169. 570
Tranquillity, 2.6 miles southwest of, at T road west, in corner fence post painted "U. S. 168"; spike-----	168. 35

FIREBAUGH QUADRANGLE

[Latitude 36° 45' -36° 52' 30"; longitude 120° 22' 30"-120° 30']

FRESNO AND MADERA COUNTIES

Primary leveling by L. F. Biggs in 1919

From Mendota quadrangle west along highways near north border of Firebaugh quadrangle to Firebaugh (leveled twice)

	Feet
Firebaugh, 3.3 miles east of, north of road, at T fence north, in corner fence post painted "U. S. 151"; spike.....	151.86
Firebaugh, 2.4 miles east of, north of road, at second-class road north, in fence post painted "U. S. 148"; spike.....	148.34
Firebaugh, 2 miles east of, southwest corner of bridge over canal, in floor; spike painted "U. S. 149".....	150.12
Firebaugh, 1.2 miles east of, north side of road, east bank of San Joaquin River, in corner fence post painted "U. S. 150".....	150.36
Firebaugh, 600 feet south of approach to San Joaquin River bridge, at northeast corner of barn; iron post stamped "U. S. E. D. 368" (U. S. E. D. elev.=152.74).....	149.081
Firebaugh Bridge over San Joaquin River, top of southwest concrete pier of bridge; bronze tablet stamped "151 B. B. 1919".....	151.775

From Firebaugh west along highways to Sheep Ranch quadrangle

Firebaugh, 600 feet south of station, 100 feet west of Southern Pacific R. R., in base of power pole painted "U. S. 149"; spike....	149.57
Firebaugh, 1 mile west of, in floor of canal bridge painted "U. S. 158"; spike.....	158.15
Firebaugh, 2.5 miles west of, 60 feet north of crossroads, in telephone pole 132-12 painted "U. S. 163"; spike.....	163.17
Firebaugh, 3.5 miles northwest of, in base of telephone pole 70-1; spike, painted "U. S. 159".....	161.52

From Mendota quadrangle northwest across northeast part of Firebaugh quadrangle to Firebaugh (leveled twice)

M. & L. Helm ranch, 2 miles north of, west side of road, 30 feet west of canal, 415 feet north of old canal bridge; iron post stamped "U. S. E. D. 364 162.4" (U. S. E. D. elev.=162.36).....	158.820
M. & L. Helm ranch, 3 miles northwest of, 50 feet south of canal, at southeast corner of abandoned homestead; iron post stamped "U. S. E. D. B. M. 365 157.7" (U. S. E. D. elev.=157.72).....	154.150
M. & L. Helm ranch, 3.8 miles northwest of northeast bank of canal, at angle in canal west; iron post stamped "U. S. E. D. B. M. 366 160.6" (U. S. E. D. elev.=160.62).....	157.070
Firebaugh, 2 miles southeast of, 200 feet west of river, 10 feet south of road, 40 feet east of north and south fence line; iron post stamped "U. S. E. D. 367 155.2" (U. S. E. D. elev.=155.24).....	151.560
Firebaugh, 1 mile south of; east end of canal bridge, painted "U. S. 154".....	153.45

Near southeast corner of quadrangle

Mendota, in front of station, top of rail.....	174.1
Mendota, at northwest corner of schoolyard, in concrete post; bronze tablet stamped "174 47 1919 B B".....	174.152
Mendota, 0.5 mile northwest of, in concrete base of semaphore 174.0; chiseled "U. S. 175".....	174.76
M. & L. Helm ranch, 200 feet southeast of mess hall, in gate post painted "U. S. 157"; spike.....	157.14

GRAVELLY FORD QUADRANGLE

[Latitude 36° 45'-36° 32' 30"; longitude 120° 07' 30"-120° 15']

FRESNO AND MADERA COUNTIES

Primary leveling by L. F. Biggs in 1920

	Feet
From southwest corner of Madera quadrangle southwest into Gravelly Ford quadrangle, thence west along highways into Mendota quadrangle	
T. 12 S., R. 17 E., southwest corner of sec. 16, at T road east, in corner fence post painted "U. S. 222"; spike-----	222. 13
T. 12 S., R. 17 E., northwest corner of sec. 28, at T road east, in power pole painted "U. S. 221"; spike-----	221. 10
T. 12 S., R. 17 E., near southeast corner of sec. 19, in fence post painted "U. S. 215"; spike-----	215. 50
T. 12 S., R. 17 E., center of sec. 30, 8.8 feet south and 0.5 foot east of pipe in well under windmill which marks Last Chance triangulation station, in concrete post; bronze tablet stamped "210 1919 B B 6"-----	210. 401
T. 12 S., Rs. 16 and 17 E., corner of secs. 19, 30, 24, and 25, at T fence east, in corner fence post painted "U. S. 208"; spike---	208. 00
T. 12 S., R. 16 E., near southeast corner of sec. 23, northeast corner of south one of three concrete watering troughs at M. & L. Cottonwood cow camp; chiseled square, marked "U. S. 202"-----	202. 92
M. & L. Cottonwood cow camp, 0.7 mile west of, at T fence north, in corner fence post painted "U. S. 196"; spike-----	196. 35
T. 12 S., R. 16 E., 0.4 mile south of, northwest corner of sec. 27, 5 feet north of gate on fence line at entrance to M. & L. Aliso ranch, in concrete post; bronze tablet stamped "189 B B 1919 7"-----	189. 337
T. 12 S., R. 16 E., 0.4 mile south of northwest corner of sec. 28, in gate post painted "U. S. 184"; spike-----	183. 98
From north border of quadrangle south along highways to San Joaquin River	
T. 12 S., Rs. 16 and 17 E., corner of secs. 19, 30, 24, and 25, at T fence east, in corner fence post painted "U. S. 207"; spike-----	208. 00
T. 12 S., Rs. 16 and 17 E., corner of secs. 25, 36, 30, and 31, at T fence east; top of 4 by 4 inch corner stake, "U. S. 207" painted on fence post-----	207. 94
T. 12 S., Rs. 16 and 17 E., 300 feet east of south common corner of secs. 36 and 31, at angle south in road; iron post stamped "208 1919 B B"-----	208. 283
T. 13 S., R. 17 E., near northeast corner of sec. 12, 20 feet west of gate, at T fence west, in fence post painted "U. S. 204"-----	205. 06
M. & L. Gravelly Ford ranch, 1.5 miles northeast of, 200 feet north of canal, at T road and fence north, in corner fence post; spike, painted "U. S. 203"-----	203. 78
M. & L. Gravelly Ford ranch, 2 miles east of, 100 feet north of river, in base of 18-inch willow tree scribed "U. S. 201"; spike-----	201. 34
T. 13 S., R. 17 E., 1,900 feet north and 1,900 feet east of southwest corner of sec. 16, 96 feet south of river, near grove of eucalyptus trees; iron post stamped "U. S. E. D. B. M. 350 Elev. 204.0"-----	200. 690
From point near Jamesan north to San Joaquin River (leveled twice)	
T. 14 S., R. 16 E., northvest corner of sec. 3, in fence post painted "U. S. 178"; spike-----	178. 11
Jamesan, 3.7 miles north by 1 mile west of, 150 feet west of slough, 250 feet south of river, at bend north in river; iron post stamped "U. S. E. D. 354 188.6"-----	185. 250

HELM QUADRANGLE

[Latitude 36° 30' - 36° 37' 30"; longitude 120° - 120° 07' 30"]

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1909

	Feet
From point near northeast corner of quadrangle southwest along highways to point 2.3 miles north of Helm (leveled twice)	
McMullin, 3.2 miles southwest of, south of road; top of 2 by 4 inch redwood stake scribed "U. S. 208"-----	209.02
McMullin, 4 miles southwest of, south edge of road, 6 feet north of 2-inch galvanized milepost, in concrete post; bronze tablet stamped "205 59 1919 B B"-----	205.082
McMullin, 5 miles southwest of, north of road; top of 2 by 4 inch redwood stake scribed "U. S. 200"-----	201.08
McMullin, 6 miles southwest of, south of road; top of 2-inch galvanized gas pipe milepost, painted "U. S. 198"-----	198.36
McMullin, 7 miles southwest of, 100 feet northeast of road to Kerman, in end of fence post painted "U. S. 191"; spike-----	191.74
T. 15 S., R. 17 and 18 E., at T road north to Kerman, in 4-inch iron pipe, corner of secs. 25, 36, 30, and 31; top of bolt, painted "193"-----	193.07
T. 16 S., R. 17 E., northeast corner of sec. 2, south side of McMullin-Coalinga road; iron post stamped "U. S. E. D. 321 Elev. 194.8" (U. S. E. D. Elev.=194.77)-----	191.289
McMullin, 9.8 miles southwest of, southwest corner of long bridge over canal, in floor, painted "U. S. 192"; spike-----	192.45
From point 2 miles north of Helm, south along highways into Wheatville quadrangle	
Helm, 1.3 miles north of, south end of canal bridge; spike painted "U. S. 188"-----	188.58
Helm, 50 feet northwest of crossroads, in concrete post; bronze tablet stamped "186 1919 B B 186"-----	186.477
Helm, 1 mile south of, west end of canal bridge, painted "U. S. 191"-----	190.96
Helm, 2 miles south of, west end of concrete canal culvert; chiseled square, marked "U. S. 193"-----	193.15
From San Joaquin quadrangle southeast along highways to point 2 miles north of Helm	
San Joaquin School, 0.7 mile northeast of, 50 feet southeast of crossroads, at corner of orchard, in corner fence post, painted "U. S. 172"; spike-----	173.20
San Joaquin, 0.5 mile north by 1 mile east of, 20 feet north of crossroads, at southwest corner of bridge; bolthead, painted "U. S. 177"-----	176.50
San Joaquin, 2.7 miles east of, 200 feet southwest of oil derrick (Derrick triangulation station), at south edge of road, at fence corner; bronze tablet stamped "62 178 1919 B B"-----	178.276
Derrick, 0.7 mile southeast of, on levee, in gatepost painted "U. S. 189"; spike-----	188.64
Derrick, 1.2 miles southeast of, north end of weir; spike, painted "U. S. 184"-----	183.37

	Feet
Derrick, 2 miles southeast of, on levee, in gatepost painted "U. S. 191"; spike-----	190.82
Derrick, 2.5 miles southeast of, east end of bridge at road west; bolthead, painted "U. S. 189"-----	188.97
McMullin, 9.8 miles southwest of, southwest corner of long bridge over canal, in floor, painted "U. S. 192"; spike-----	192.45
From Helm quadrangle south along highways to point 7 miles southwest of McMullin	
Kerman, 7 miles south of, west of road, in large fence post painted "U. S. 195"; spike-----	195.07
Kerman, 8 miles south of, west of road, in corner fence post painted "U. S. 193"; spike-----	192.98
McMullin, 7 miles southwest of, 100 feet northeast of road north to Kerman, in corner fence post painted "U. S. 191"; spike-----	191.74

Primary leveling by L. O. Newsome in 1923

Along east border of quadrangle into Wheatville quadrangle

McMullin, 4 miles southwest of, south edge of road, 6 feet north of 2-inch galvanized-iron milepost, in concrete; bronze tablet stamped "205 59 1919 B B"-----	205.082
T. 15 S., R. 18 E., corner of secs. 21, 22, 27, and 28, at T road south, 0.5 mile north of oil derrick; nail in fence post, marked "U. S. 210 B. M."-----	210.48
T. 15 S., R. 18 E., near corner of secs. 27, 28, 33, and 34, on east side of road; iron post stamped "213 1923 N"-----	213.698
Tps. 15 and 16 S., R. 18 E., near corner of secs. 3, 4, 33, 34; iron post stamped "U. S. E. D. B. M. No. 322 Elev. 210.5"-----	207.102
T. 16 S., R. 18 E., corner of secs. 9, 10, 15, and 16; iron post lettered "S. McKay L. S. Section Corner"-----	204.368
T. 16 S., R. 18 E., near corner of secs. 15, 16, 21, and 22, 0.5 mile southwest of red house, in west edge of right of way road; iron post stamped "204 1923 N"-----	203.816
Burrel, 2 miles northwest of, near corner of secs. 21, 22, 27, and 28, T. 16 S., R. 18 E., southwest fence corner at crossroads; nail in power pole marked "U. S. 200 B. M."-----	200.39
Burrel, 1 mile northwest of, near corner of secs. 27, 28, 33, and 34, T. 16 S., R. 18 E., 100 feet south of T road west; nail in power pole marked "U. S. 199 B. M."-----	199.24

JAMESAN QUADRANGLE

[Latitude 36° 37' 30"-36° 45'; longitude 120° 07' 30"-120° 15']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Kerman quadrangle west along highways near north border of Jamesan quadrangle into Tranquillity quadrangle (leveled twice)	
Kerman, 1 mile north by 4 miles west of, near telephone pole 95-15, in corner fence post painted "U. S. 201"; spike-----	201.76
Kerman, 1 mile north of, 5 miles west of, near telephone pole 94-15, in corner fence post; spike, painted "U. S. 197"-----	197.06

	Feet
Kerman, 1 mile north of, 6 miles west of, 150 feet northeast of T road north, 60 feet east of telephone pole 93-15; iron post stamped "U. S. E. D. 333. Elev. 196.1" (U. S. E. D. elev. 196.08)-----	192. 704
Kerman, 1 mile north by 7 miles west of, at base of telephone pole 92-15, in top of 3 by 3 inch stake painted "U. S. 185"; spike-----	185. 51
Jamesan triangulation station, 1 mile north by 8 miles west of Kerman, 250 feet southwest of T road south to Jamesan; iron post stamped "187 44 B B 1919"-----	187. 427
Whites Bridge, 6.8 miles east of, in base of telephone pole 90-15 painted "U. S. 176"; spike-----	176. 29
Whites Bridge, 5.8 miles east of, in base of telephone pole 89-12 painted "U. S. 171"; spike-----	171. 33
From point 7.8 miles east of Whites Bridge along highways south and southwest to San Joaquin quadrangle near its northwest corner	
Jamesan, east end of switch, in concrete base of semaphore 1848; chiseled square, "U. S. 179"-----	179. 76
Jamesan, 1.3 miles south of, east side of road, in fence post painted "U. S. 169"; spike-----	169. 09
Jamesan, 2.6 miles south of, southwest corner of bridge over Kings Slough; iron post stamped "173 1919 B B 76"-----	173. 032
Tranquillity, 1.6 miles north of, 40 feet west of road, south end of concrete inverted siphon under canal; chiseled square, marked "U. S. 164"-----	164. 65
Tranquillity, 1 mile north of, west bank of Fresno Slough, in front of pump station; iron post stamped "174.4 U. S. E. D. B. M. 11, 228" (U. S. E. D. elev.=174.37)-----	170. 880
Tranquillity, road crossing; top of rail-----	169. 7
Tranquillity, south side of door to entrance to Ford garage, in concrete floor; chiseled square, marked "U. S. 164"-----	164. 79
Tranquillity, 1 mile south of, at road west to Mendota pump station, in floor of canal bridge; nail painted "U. S. 168"-----	168. 20

KENTUCKY WELL QUADRANGLE

[Latitude 36° 52' 30"-37°; longitude 120° 15'-120° 22' 30"]

MADERA COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Aliso triangulation station in Mendota quadrangle northeast along highways through southeast part of Kentucky Well quadrangle into Bonita Ranch quadrangle	
Aliso triangulation station, 0.8 mile northeast of, south end of small bridge; spike, painted "U. S. 168"-----	168. 64
Aliso triangulation station, 2 miles northeast of, north side of road, in fence post painted "U. S. 172"; spike-----	172. 02
Aliso triangulation station, 3 miles northeast of, in floor of southwest corner of bridge painted "U. S. 179"; spike-----	179. 50
Tps. 11 and 12 S., R. 15 E., corner of secs. 34, 35, 2, and 3, on fence line, 20 feet west of power pole 246, at T in power line north, on concrete post; bronze tablet stamped "167 1919 B B 12"-----	167. 418
Aliso triangulation station, 3.6 miles northeast of, north end of bridge; spike, painted "U. S. 178"-----	178. 66

	Feet
T. 11 S., R. 16 E., southwest corner of sec. 32, in power pole 200 painted "U. S. 183"; spike.....	183.49

Primary leveling by D. S. Birkett in 1913

From Bonita Ranch quadrangle south of its northwest corner along highways west and north to point near north border of Kentucky Well quadrangle, thence west into Pozo Farm quadrangle

T. 11 S., R. 16 E., 50 feet north of quarter corner between secs. 17 and 18 (west quarter corner of block 15, Chowchilla Subdivision No. 2), in fence post marked "U. S. 188 B. M."; railroad spike.....	188.60
T. 11 S., R. 16 E., northwest corner of sec. 17 (southeast corner of block 14, Chowchilla Subdivision No. 2), 5 feet south of, in fence post marked "U. S. 190 B. M."; railroad spike.....	190.78
T. 11 S., R. 16 E., southeast corner of sec. 6 (southeast corner of block 1, Chowchilla Subdivision No. 2), intersection of fences, in fence post marked "U. S. 196 B. M."; railroad spike.....	196.19
T. 11 S., R. 15 E., 35 feet north by 270 feet west of southeast corner of sec. 1 (southwest corner of block 1, Chowchilla Subdivision No. 2), 330 feet west of McLaughlin Well; iron post stamped "1913 187".....	187.744
T. 11 S., R. 15 E., 50 feet east and 40 feet north of southwest corner of sec. 1 (southwest corner of block 2, Chowchilla Subdivision No. 2), in fence post marked "U. S. 179 B. M."; railroad spike.....	179.36
T. 11 S., R. 15 E., southwest corner of sec. 2 (southwest corner of block 3, Chowchilla Subdivision No. 2), 50 feet north by 15 feet east of intersection of fences, in gate post marked "U. S. 174 B. M."; railroad spike.....	174.96
T. 11 S., R. 15 E., southwest corner of sec. 3 (southwest corner of block 4, Chowchilla Subdivision No. 2); top of corner post.....	168.40
T. 11 S., R. 15 E., 0.2 mile west of quarter corner between secs. 4 and 9 (quarter corner between blocks 5 and 10, Chowchilla Subdivision No. 2), 45 feet northeast of Kentucky Well, 65 feet northeast of old ranch house; iron post stamped "1913 164".....	164.371
T. 11 S., R. 15 E., near southwest corner of sec. 5 (near southeast corner of block 6, Chowchilla Subdivision No. 2), 20 feet north of intersection of north and south fence with Berenda Slough, in fence post marked "U. S. 158 B. M."; railroad spike.....	158.38
T. 11 S., R. 15 E., southwest corner of sec. 6 (southeast corner of block 7, Chowchilla Subdivision No. 2); top of corner post.....	152.95

KERMAN QUADRANGLE

[Latitude 36° 37' 30"-36° 45'; longitude 120°-120° 07' 30"]

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Biola quadrangle along highways south and east in northeast part of Kerman quadrangle into Kearney Park quadrangle

	Feet
Kerman, 2 miles north of, 50 feet southwest of crossroads, in power pole painted "U. S. 224"; spike.....	224.80
Kerman, 1 mile north of, 50 feet northeast of intersection of Madera Ave. and Whites Bridge road; iron post stamped "U. S. E. D. 334, Elev. 225.5" (U. S. E. D. elev.=225.45).....	222.319

	Feet
Kerman, 1 mile north of, 40 feet southeast of intersection of Madera Ave. and Whites Bridge road, east end of concrete culvert; chiseled "U. S. 223.0" (Highway elev.=223.96)-----	223. 50
Kerman, 1 mile north by 1 mile east of, at T road north, in base of telephone pole 100-15, painted "U. S. 226"; spike-----	226. 12
Kerman, 1 mile north by 2 miles east of, 100 feet west of crossroads, south end of concrete culvert; chiseled square, marked "U. S. 231"-----	231. 84
Highway bench mark 84, 237.24 (not described)-----	236. 82
Kerman, 1 mile north and 3 miles east of, 40 feet southwest of crossroads, south end of concrete culvert; chiseled square, marked "U. S. 238"-----	238. 37
From Kerman west along highways into Jamesan quadrangle (leveled twice)	
Kerman, 1 mile north of, 40 feet southeast of intersection of Madera Ave. and Whites Bridge road, east end of concrete culvert; chiseled "U. S. 223"-----	223. 50
Kerman, 1 mile north by 1 mile west of, at T road north, in base of telephone pole 98-15 painted "U. S. 217"; spike-----	217. 60
Kerman, 1 mile north by 2 miles west of, at T road north, in base of telephone pole 97-15 painted "U. S. 209"; spike-----	209. 28
Kerman, 1 mile north by 3 miles west of, south edge of road, 50 feet east of T road north, 200 feet east of house, in concrete post; bronze tablet stamped "206 1919 B B 43"-----	206. 745
From Kerman south along highways into Helm quadrangle	
Kerman, 1 mile north of, 40 feet southeast of crossroads, east end of concrete culvert; chiseled "U. S. 223"-----	223. 50
Kerman, northeast corner of Kerman Mercantile Co.'s building, in concrete sidewalk; chiseled square, marked "U. S. 217"-----	217. 22
Kerman, 1 mile south of, at crossroads, in telephone pole painted "U. S. 213"; spike-----	213. 07
Kerman, 2 miles south of, at T road east, in corner fence post painted "U. S. 212"; spike-----	212. 80
T. 14 S., Rs. 17 and 18 E., 50 feet northwest of corner of secs. 25, 36, 30, and 31, west edge of highway, in concrete post; bronze tablet stamped "207 1919 63 B B"-----	207. 886
Kerman, 4 miles south of, 50 feet southwest of T road west, in corner fence post painted "U. S. 205"; spike-----	205. 08
Tps. 14 and 15 S., R. 17 E., 20 feet south of corner of secs. 35, 36, 1, and 2; iron post stamped "U. S. E. D. 327 (U. S. E. D. elev. 205.55)"-----	202. 137
Kerman, 5 miles south of, east side of road, in gatepost painted "U. S. 200"; spike-----	200. 48
T. 15 S., Rs. 17 and 18 E., 60 feet southeast of corner of secs. 12, 13, 17, and 18, east edge of road, in concrete post; bronze tablet stamped "197 1919 B B 64"-----	197. 682
Near southeast corner of quadrangle	
McMullin, 3.2 miles southwest of, south of road; top of 2 by 4 inch redwood stake scribed "U. S. 208"-----	209. 02

From point near northeast corner of quadrangle south along highways and east into Kearney Park quadrangle		Feet
Kerman, 1 mile north by 3 miles east of, 40 feet southwest of crossroads, south end of concrete culvert; chiseled square, marked "U. S. 238"-----		238. 37
Rugg, 1 mile south of, 40 feet northwest of crossroads, west end of concrete culvert; chiseled mark, marked "U. S. 236"-----		236. 77
Rugg, 2 miles south of, 40 feet northeast of crossroads, in base of telephone pole painted "U. S. 232"; spike-----		231. 76
Rugg, 3 miles south of, T. 14 S., R. 18 E., 500 feet west of corner of secs. 21, 22, 27, and 28, east edge of railroad right of way, 15 feet north of road, in fence line, in concrete post; bronze tablet stamped "227 1919 B B 56"-----		227. 269

LAGUNA SECA RANCH QUADRANGLE

[Latitude 36° 45'-36° 52' 30"; longitude 120° 45'-120° 52' 30"]

FRESNO AND MERCED COUNTIES

Primary leveling by L. F. Biggs in 1919, partly releveling a line by Monahan in 1909

From Charleston School quadrangle southeast along highways across northeast part of Laguna Seca Ranch quadrangle to Little Panoche quadrangle		Feet
Valley pump station No. 5, 9.5 miles southeast of, in base of telephone pole 52-4 painted "U. S. 291"; spike-----		291. 59
Little Panoche Creek, 3.4 miles north of, 150 feet west of gate on east and west fence line; iron post stamped "Cal. 1909 G." (This bench mark was reset on fence line.) Elevation before being reset=383.389 feet; after being reset-----		383. 397
Little Panoche Creek, 2.5 miles north of, at northeast corner of bridge; top of 12 by 12 inch post scribed "U. S. 435"-----		435. 74
Little Panoche Creek, 1.5 miles north of, 20 feet west of road; top of 1 by 4 inch redwood stake painted "U. S. 451"-----		452. 00
From Arburna quadrangle near its northeast corner along highways southeast to Panoche Creek, thence northeast to Little Panoche quadrangle		
Laguna Seca ranch house, 600 feet west of, at spring; top of watering trough painted "U. S. 862"-----		861. 17
Laguna Seca ranch house, 1 mile southeast of, 10 feet east of road; at summit; top of rock painted "U. S. 898"-----		897. 18
Laguna Seca ranch house, 1 mile southeast of, 10 feet east of road; top of rock painted "U. S. 901"-----		900. 32
Laguna Seca ranch, 1 mile south of, in first canyon west of road; top of rock, painted "U. S. 906"-----		906. 36
Laguna Seca ranch, 2.5 miles south of, 50 feet west of road; in top of boulder buried flush with ground; bronze tablet stamped "1,030 1919 B B 117"-----		1, 029. 954
Laguna Seca ranch, 3.6 miles south of, 200 feet east of Y road northwest; top of boulder; chiseled "U. S. 894"-----		894. 01
Laguna Seca ranch, 5 miles south of, 30 feet south of road, at summit, near Fresno-Merced county line; top of rock, painted "U. S. 1,058"-----		1, 057. 83
Little Panoche Creek, 2.5 miles north of, 10 feet east of road, top of rock, painted "U. S. 995"-----		995. 94

	Feet
Little Panoche Creek, 1.4 miles north of, at second-class road east, top of rock, painted "U. S. 848"-----	847. 53
T. 13 S., R. 11 E., in southeast part of sec. 19; northeast corner of Panoche Creek bridge, painted "U. S. 600"-----	599. 47
T. 13 S., R. 11 E., in southeast part of sec. 19; 55 feet southeast of Panoche Creek bridge, in top of boulder buried flush with ground; bronze tablet stamped "600 118 1919 B B"-----	600. 316
Mouth of Little Panoche Canyon, 2 miles west of, 100 feet south of road; top of boulder, chiseled "U. S. 550"-----	549. 98
Mouth of Little Panoche Canyon, 1 mile west of, southeast corner of bridge; spike, painted "U. S. 493"-----	492. 96
Mouth of Little Panoche Canyon, in southeast corner of red barn, painted "U. S. 475"; spike-----	474. 62

Primary leveling by W. H. Monahan in 1909

From Little Panoche Creek, Little Panoche quadrangle, northwest along highways across northeast part of Laguna Seca Ranch quadrangle to Charleston School quadrangle

Little Panoche Creek, 1.51 miles northwest of, 2.50 miles northeast of Avery ranch, in post 4 by 4 inches by 4 feet sunk 2 feet in ground; spike, aluminum tag stamped "407"-----	406. 52
Little Panoche Creek, 2.45 miles northwest of, 10 feet east of wagon road leading north from Avery ranch; aluminum tag stamped "425"-----	424. 78
Little Panoche Creek, 4.44 miles northwest of, 500 feet west of wagon road leading north from Avery ranch, at base of foothills; a bottle in ground with board sunk beside it, aluminum tag stamped "351"-----	350. 66

LEVIS QUADRANGLE

[Latitude 36° 30'-36° 37' 30"; longitude 120° 22' 30"-120° 30']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Tufts Ranch quadrangle south along east edge of Levis quadrangle to point near southeast corner, thence west to point 11.9 miles northwest of Ladys ranch (leveled twice)

	Feet
Mendota, 9 miles south of, 1 mile southeast of oil pump station, east margin of road, at southwest corner of sec. 18, T. 15 S. R., 15 E., in concrete post; bronze tablet stamped "48 1919 B B 199"-----	199. 560
Mendota, 10 miles south of, east edge of road; top of 2 by 4 inch redwood stake, painted "U. S. 202"-----	202. 59
Mendota, 10.8 miles south of, 100 feet northeast of crossroads; top of 2 by 4 inch redwood stake, painted "U. S. 208"-----	208. 56
Mendota, 12 miles south of, 0.5 foot south of 4-inch iron pipe, at corner of Tps. 15 and 16 S., Rs. 14 and 15 E., in concrete post buried flush with ground; bronze tablet stamped "231 49 1919 B B"-----	232. 006

	Feet
T. 16 S., Rs. 14 and 15 E., corner of secs. 1, 12, 6, and 7; top of 4-inch iron pipe, "U. S. 266" painted on 2 by 4 inch redwood stake-----	266. 17
T. 16 S., R. 14 E., southeast corner of sec. 12, northeast corner of field around abandoned house, in corner fence post painted "U. S. 311"-----	311. 05
T. 16 S., Rs. 14 and 15 E., corner of secs. 13, 24, 18, and 19; top of bolt to 4-inch iron pipe, "U. S. 347" painted on 2 by 4 inch redwood stake-----	347. 21
T. 16 S., Rs. 14 and 15 E., 0.5 foot north of 4-inch iron pipe at corner of secs. 19, 30, 24, and 25, 1 mile northeast of Cantua triangulation station, 10 feet west of road, in concrete post; bronze tablet stamped "382 1919 B B 51"-----	382. 198
T. 16 S., R. 14 E., corner of secs. 23, 24, 25, and 26, 40 feet west of road under telephone line, top of 4 by 4 inch section corner, painted "U. S. 421"-----	421. 93
T. 16 S., R. 14 E., corner of secs. 22, 23, 26, and 27, 10 feet south of road; top of 2 by 4 inch redwood stake, painted "U. S. 434"-----	434. 56
T. 16 S., R. 14 E., corner of secs. 21, 22, 27, and 28; top of 2 by 4 inch redwood stake, painted "U. S. 495"-----	495. 10
T. 16 S., R. 14 E., 600 feet northeast of corner of secs. 20, 21, 28, and 29, 0.4 mile west of Valley pipe line telephone pole 24-16, 100 feet southwest of abandoned house; iron post stamped "578 1908"-----	577. 409
From Tufts Ranch quadrangle near its southwest corner southeast along high-ways to point 11.9 miles northwest of Ladds ranch	
M. & L. Telephone ranch, 5.2 miles south of, 100 feet southeast of crossroads; top of stake, scribed "T. 15 S., VII. U. S. 347" on 1 by 6 inch redwood board-----	346. 81
M. & L. Telephone ranch, 6.4 miles south of, 20 feet east of road at Y road south; top of 2 by 6 inch redwood plank, scribed "U. S. 367"-----	366. 48
M. & L. Telephone ranch, 6.7 miles south of, 1 mile east by 0.3 mile north of Valley pipe-line pump station, 10 feet south of fence corner, in concrete post; bronze tablet stamped "75 1919 B B 365"-----	365. 277
Valley pipe-line pump station, 1 mile east by 0.5 mile south of, in corner fence post painted "U. S. 373"; spike-----	373. 16
Tps. 15 and 16 S., Rs. 13 and 14 E., in corner fence post; spike, painted "U. S. 379"-----	378. 25
Valley pipe-line pump station, 2.5 miles southeast of, at T road south, in base of telephone pole 23-17 painted "U. S. 407"; spike-----	406. 42
Valley pipe-line pump station, 3.7 miles southeast of, in telephone pole 27-11 painted "U. S. 468"; spike-----	467. 81
Valley pipe-line pump station, 4.8 miles southeast of, in telephone pole 26-8 painted "U. S. 478"; spike-----	478. 41
Valley pipe-line pump station, 5.9 miles southeast of, in telephone pole 25-6, painted "U. S. 534"; spike-----	533. 96
T. 16 S., R. 14 E., 600 feet northeast of corner of secs. 20, 21, 28, and 29, 0.4 mile west of Valley pipe-line telephone pole 24-16, 100 feet southwest of abandoned house; iron post stamped "578 1918"-----	577. 409

Primary leveling by W. H. Monahan in 1908

	Feet
From Clervo Hills quadrangle northwest across Levis quadrangle into Mono-cline Ridge quadrangle	
Ladd's ranch, 10.57 miles northwest of, at edge of foothills, in fence post on section line fence; spike, aluminum tag stamped "576" (correction to Bull. 481 here is 0.56)-----	575.20
Ladd's ranch, 11.87 miles northwest of, at base of foothills, on a small plateau, 100 feet north of ravine, at south edge of corner of new barn; iron post stamped "Cal 1908 578 G"-----	577.409
Ladd's ranch, 12.93 miles northwest of, at base of foothills leading from Cantua Creek to the Cheney ranch; bottle in ground on west side of wagon road, aluminum tag stamped "546"-----	545.55
Ladd's ranch, 13.87 miles northwest of, 20 feet west of wagon road along foothills to Cheney's ranch, 600 feet north of a swale which was former camp of J. H. Sinclair; a bottle sunk in ground, board sunk in ground, marked "538"-----	537.05
Ladd's ranch, 14.93 miles northwest of, 50 feet east of creek, 10 feet east of road leading from Cantua Creek to Cheney's ranch; iron post stamped "Cal 1908 495 G"-----	494.342

LITTLE PANOCHE QUADRANGLE

[Latitude 36° 45'-36° 52' 30"; longitude 120° 37' 30"-120° 45']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Dos Palos quadrangle north along highways, thence south through east part of Little Panoche quadrangle into Tierra Loma School quadrangle	
South Dos Palos, 6.5 miles south of, 50 feet west of road, at T road west; top of 2 by 4 inch redwood stake scribed "U. S. 189"-----	189.42
South Dos Palos, 2.5 miles south of, west of road, in front of house, in corner fence post painted "U. S. 202"; spike-----	202.36
T. 12 S., R. 12 E., southwest corner of sec. 34, 0.5 mile southwest of Miller No. 2, west side of road, at T fence east, on concrete post; bronze tablet stamped "213 B B 1919 26"-----	213.253
Tierra Loma School, 6.8 miles north of, west of road, at L in fence west, in corner fence post painted "U. S. 225"; spike-----	226.07
Tierra Loma School, 5.7 miles north of, at crossroads, in corner fence post, painted "U. S. 241"; spike-----	241.62
Tierra Loma School, 4.7 miles north of, west side of road, 600 feet north of Y road southwest, top of 2 by 4 inch redwood stake scribed "U. S. 262"-----	263.08
T. 13 S., R. 12 E., northeast corner of sec. 28, 30 feet southwest of crossroads, 3.7 miles north of Tierra Loma School, 2.0 miles east of Shell triangulation station No. 1, on concrete post; bronze tablet stamped "286 1919 B B 27"-----	286.114
Tierra Loma School, 2.7 miles north of, 400 feet northeast of small white house, in corner fence post (painted "U. S. 311"; spike (reported destroyed) -----	311.23
From point 3.7 miles north of Tierra Loma School west along highways to point 2.4 miles northwest of Shell pump station No. 4	
T. 13 S., R. 12 E., northeast corner of sec. 28, 30 feet southwest of crossroads, 3.7 miles north of Tierra Loma School, 2 miles east of Shell No. 1 triangulation station, on concrete post; tablet stamped "286 1919 B B 27"-----	286.114

	Feet
T. 13 S., R. 12 E., corner of secs. 20, 21, 28, and 29, in corner fence post painted "U. S. 344"; spike-----	344. 23
Shell pump station No. 4 (Shell triangulation station No. 1), 0.4 mile northwest of, at crossroads, in base of telephone pole 46-24 painted "U. S. 414"; spike-----	414. 20
Shell pump station No. 4, 2.4 miles northwest of, 500 feet west of old road; iron post stamped "523 Cal. 1909 G"-----	523. 087

Primary leveling by W. H. Monahan in 1908

From Tierra Loma School quadrangle northwest along highways through southwest part of Little Panoche quadrangle into Laguna Seca Ranch quadrangle

Hayes, 8.97 miles northwest of, 1 mile northeast of sheep ranch; a bottle sunk in ground with board sunk beside it, aluminum tag stamped "597"-----	596. 45
Hayes, 10.06 miles northwest of, about 0.75 mile north of southwest section line, in post 2 by 4 inches by 4 feet, sunk in ground; spike, aluminum tag stamped "600"-----	599. 69
Hayes, 11.10 miles northwest of, 2.50 miles south of Little Panoche Creek; iron post stamped "Cal. 1908 523 G"-----	523. 087
Hayes, 12.04 miles northwest of, 10 feet west of wagon road leading from Hayes to Avery ranch and to mouth of Little Panoche Canyon, 1.64 miles southeast of Avery ranch, in post sunk in ground; spike, aluminum tag stamped "484"-----	484. 16
Little Panoche Creek, 1.50 miles northeast of Avery ranch, 45 feet north of north bank; iron post stamped "Cal. 1909 407 G"-----	406. 800

MADERA QUADRANGLE

[Latitude 36° 52' 30"-37°; longitude 120°-120° 07' 30"]

MADERA COUNTY

Precise leveling by C. H. Semper in 1901-2

From Madera southeast along Southern Pacific R. R. to Borden

	Feet
Madera, in front of station; top of rail-----	272. 5
Madera, in front face of northeast corner of county courthouse; aluminum tablet stamped "274 B"-----	274. 518
Borden, in front of station; top of rail-----	270. 1
Borden, 1,000 feet south of station, 100 feet south of milepost 187, west side of track, at corner of fence; iron post stamped "269 B"-----	269. 950

Primary leveling by Roscoe Reeves in 1915

From point 3 miles northwest of Madera east along highway to four corners 4 miles northeast of Madera

Madera, 3 miles northwest of, west of track, opposite milepost 181; iron post stamped "270" (see Bull. 342, p. 17, described as milepost 182)-----	270. 920
Madera, 3 miles north of, 750 feet northeast of farmhouse, on northeast corner post of barnyard; railroad spike marked "275"-----	275. 14
Madera, 3 miles north of, in northeast corner of crossroads, 1.4 miles east of Southern Pacific R. R.; railroad spike marked "278"-----	278. 16

	Feet.
Madera, 3 miles north of, 2 miles east of Southern Pacific R. R., 500 feet west of second-class road south, in corner fence post on north side of road; railroad spike marked "284"-----	284. 24
Madera, 3 miles north by 1 mile east of, on west side of track on first culvert of Santa Fe Ry. north of milepost 1022; aluminum tablet stamped "297"-----	297. 499
Madera, 3 miles north by 2 miles east of, 0.9 mile north by 0.9 mile east of Santa Fe Ry., on east side of road, in corner fence post; railroad spike marked "309"-----	309. 29
Madera, 4 miles northeast of, at four corners, in telephone pole; railroad spike marked "303"-----	303. 20

Primary leveling by L. F. Biggs in 1919

From Madera south along highways into Biola quadrangle

Madera, in front face of northeast corner of county courthouse; aluminum tablet stamped "274 B"-----	274. 518
Madera, 50 feet southwest of intersection of West Yosemite and West Olive streets, west end of concrete culvert; chiseled square marked "U. S. 263"-----	263. 39
T. 11 S., R. 17 E., southeast corner of sec. 26, 40 feet west of crossroads, north end of concrete culvert; chiseled square, marked "U. S. 259"-----	259. 40
T. 11 S., R. 17 E., southeast corner of sec. 35, 40 feet west of crossroads, north end of concrete culvert; chiseled square marked "U. S. 250"-----	250. 34
T. 12 S., R. 17 E., northeast corner of sec. 11, 30 feet southwest of crossroads, west end of concrete culvert; bronze tablet stamped "249 1919 B B 1"-----	249. 481
T. 12 S., R. 17 E., northeast corner of sec. 10, at crossroads, south end of concrete culvert; chiseled square, marked "U. S. 242"-----	242. 07
T. 12 S., R. 17 E., northeast corner of sec. 15, at T road west, south end of concrete culvert; chiseled square, marked "U. S. 240"-----	240. 90
Lavina School, 1 mile east of, T. 12 S., R. 17 E., northeast corner of sec. 22, at T road west, south end of brick culvert; chiseled square, marked "U. S. 236"-----	236. 05

From Biola quadrangle east along highways near southeast corner of Madera quadrangle

T. 12 S., R. 18 E., northwest corner of sec. 20, at T road east, in corner fence post painted "U. S. 253"; spike-----	253. 22
T. 12 S., R. 18 E., northwest corner of sec. 21, at crossroads, in power pole painted "U. S. 260"; spike-----	260. 21
T. 12 S., R. 18 E., southeast corner of sec. 16, at crossroads near church, in base of power pole painted "U. S. 267"; spike-----	267. 80

From Lavina School west along highways into Bonita Ranch quadrangle

Lavina School, 1 mile east of, T. 12 S., R. 17 E., northeast corner of sec. 22, at T road west, south end of brick culvert; chiseled square, marked "U. S. 236"-----	236. 05
Lavina School, in northeast corner of school yard, northeast corner of sec. 21, T. 12 S., R. 17 E., in concrete post; bronze tablet stamped "230 1919 B B 5"-----	230. 648

Primary leveling by D. S. Birkett in 1913

From milepost 181 of Southern Pacific R. R. northwest of Madera along highways west into Bonita Ranch quadrangle

	Feet
Milepost 181, 15 feet south of, west side of track, at edge of highway; iron post stamped "270 B"-----	270.920
T. 11 S., R. 17 E., northwest corner of sec. 15, south side of road, 1.25 miles north by 3 miles west of Madera, in electric power pole marked "U. S. 249 B. M."; railroad spike-----	249.49

Primary leveling by L. D. Ryus in 1902 and Roscoe Reeves in 1915

From milepost 181 east along highways into Gregg quadrangle (leveled twice)

Madera, 3 miles northwest of, 15 feet south of and opposite milepost 181, west of side track, at edge of highway; iron post stamped "270 B" (Bull. 342, p. 17, +0.488)-----	270.920
Madera, 3 miles north of, 750 feet northeast of farmhouse, on northeast corner post of barnyard; railroad spike, marked "275"-----	275.14
Madera, 3 miles north of, in northeast corner of crossroads, 1.4 miles east of Southern Pacific R. R.; railroad spike, marked "278"-----	278.16
Madera, 3 miles north of, 2 miles east of Southern Pacific R. R., 500 feet west of second-class road south, in corner fence post, north side of road; railroad spike, marked "284"-----	284.24
Madera, 3 miles north by 1 mile east of, on first culvert of Atchison, Topeka & Santa Fe Ry., north of milepost 1022, west of track; aluminum tablet stamped "297"-----	297.499
Madera, 3 miles north by 2 miles east of, 0.9 mile north by 0.9 mile east of Santa Fe Ry., on east side of road, in corner fence post; railroad spike, marked "309"-----	309.29
Madera, 4 miles northeast of, at four corners, in telephone pole marked "303"; railroad spike-----	303.20

QUADRANGLE COMPRISING HELM AND FIFTEEN OTHER 7½' QUADRANGLES

[Latitude 36° 30'-37°; longitude 120°-120° 30']

FRESNO AND MADERA COUNTIES

Primary leveling by Corps of Engineers, U. S. Army, in San Joaquin Valley in 1913-14

	Feet
T. 15 S., R. 16 E., 90 feet northeast of southwest corner of SE. ¼ SW. ¼ sec. 32, about 3 miles southeast of Standard Oil Co.'s Mendota pumping station, 20 feet north of fourth post north of telephone milepost 110 on Standard Oil Co.'s Bakersfield to Mendota pipe line; iron post set in cement (U. S. C. E. b. m. 319)-----	185.380
T. 16 S., R. 17 E., about 2 miles southeast of San Joaquin, in fence corner, 2 feet southeast of southwest corner of sec. 6; iron post set in cement (U. S. C. E. b. m. 320)-----	179.33
T. 16 S., R. 17 E., 45 feet southwest of northeast corner of sec. 2, in fence corner, south side of McMullin-Coalinga road; iron post set in cement (U. S. C. E. b. m. 321)-----	191.289
T. 14 S., R. 17 E., 9 feet west of southeast corner of sec. 36, on fence line 2 feet west of east and west and south fence intersection; iron post set in cement (U. S. C. E. b. m. 327)-----	202.137
Tranquillity, 0.75 mile northeast of, north side of Jamesan grade, west bank of Fresno Slough, directly in front of San Joaquin Valley Farm Land Co.'s Tranquillity pump house; iron post set in cement (U. S. C. E. b. m. 328)-----	170.880

	Feet
Standard Oil Co.'s Mendota pumping station, 2.5 miles northwest of, 40 feet west of Standard Oil Co.'s telephone line, in a corner of north-south and east-west fence lines; iron post set in cement (U. S. C. E. b. m. 329)-----	168. 160
T. 14 S., R. 14 E., 40 feet northeast of southwest corner of sec. 3, beside property-line stake (found leaning in 1919); iron post set in cement (U. S. C. E. b. m. 330)-----	226. 31
Fresno Slough, 300 feet east of, directly in front of store at Whites Bridge, on north side of Whites Bridge road, between two small trees; iron post set in cement (U. S. C. E. b. m. 331)-----	167. 330
Whites Bridge, about 3.5 miles east of, 60 feet north of telephone pole 87-15, 3 feet south of fence line, north side of Whites Bridge road; iron post set in cement (U. S. C. E. b. m. 332)-----	169. 679
Jamesan, about 2.5 miles northeast of, north side of Whites Bridge road, 50 feet east of telephone pole 93-15; iron post set in cement (U. S. C. E. b. m. 333)-----	192. 704
Kerman, 1 mile north of, at northeast corner of Whites Bridge road and Madera Ave., 5 feet east of Automobile Club of California's road sign; red metal disk set in cement (U. S. C. E. b. m. 334)---	222. 319
Biola, about 1.8 miles north and 0.6 mile east of, 1,650 feet north and 600 feet east of southwest corner of sec. 3, T. 13 S., R. 18 E., 65 feet south of south bank of river, on north and south fence line, on property of Clovis B. Hylton; iron post set in cement (U. S. C. E. b. m. 341)-----	235. 1
Biola, 1.1 miles north and 0.4 mile west of, 550 feet north and 540 feet east of southwest corner of NW. $\frac{1}{4}$ sec. 9, T. 13 S., R. 18 E., 58 feet southeast of southeast corner of 3-story green tank house on property of H. E. Pickett, on south bank of river; iron post set in cement (U. S. C. E. b. m. 342)-----	231. 03
T. 13 S., R. 18 E., about 2,800 feet north of southwest corner of sec. 8, 1 mile southeast of Skaggs bridge, on south side of river, 12 feet from bank, on east line of Thompson Ave., 110 feet east of southeast corner of A. Anderson's house; iron post set in cement (U. S. C. E. b. m. 343)-----	231. 1
Skaggs Bridge, 156 feet north of northwest corner of, in west fence line of Madera Road, 140 feet north of north bank of river; iron post set in cement (U. S. C. E. b. m. 344)-----	228. 542
Skaggs Bridge, 0.9 mile west of, 4,000 feet north and 1,700 feet east of southwest corner of sec. 12, T. 13 S., R. 17 E., in west fence line of Bethany Cemetery, 45 feet south of south bank of river; iron post set in cement (U. S. C. E. b. m. 345)-----	235. 64
Skaggs Bridge, 2.1 miles west of, about 400 feet southeast of southeast bank of river, on north fence line of Riverside Ave., 4.5 feet east of fence line bearing north, 125 feet northwest of northwest corner of H. E. Van Horn's barn, about 500 feet east of southwest corner of NW. $\frac{1}{4}$ sec. 11, T. 13 S., R. 17 E.; iron post set in cement (U. S. C. E. b. m. 346)-----	228. 53
Skaggs Bridge, about 3.2 miles west of, on property fence line of James Gallagher and Oliver Meline, 105 feet south of south bank of river, 1,600 feet north of southwest corner of sec. 10, T. 13 S., R. 17 E.; iron post set in cement (U. S. C. E. b. m. 347)-----	213. 47

	Feet
Skaggs Bridge, on property fence line between James Gallagher and Benjamin F. Graham, 226 feet south of angle in fence line and about 700 feet south of south river bank, about 200 feet south of northwest corner of sec. 17, T. 13 S., R. 17 E.; iron post set in cement (U. S. C. E. b. m. 348)-----	208.73
T. 13 S., R. 17 E., about 3,200 feet north and 1,500 feet east of southwest corner of sec. 17, about 1,500 feet southwest of Jones's place, on north embankment of section of proposed Enterprise Canal, about 70 feet east of a low slough or swamp formed by water from canal, about 600 feet south of south river bank, about 3,000 feet downstream and on opposite side of river from mouth of Miller & Lux Canal; iron post set in cement (U. S. C. E. b. m. 349)-----	208.81
T. 13 S., R. 17 E., 1,900 feet north and 1,900 feet east of southwest corner of sec. 18, about 2 miles northeast of Striven's place, 1 mile below Jones's place, at northwest corner of old abandoned homestead now used by cattlemen, 96 feet south of south river bank; iron post set in cement (U. S. C. E. b. m. 350)-----	200.690
Striven's place, about 0.9 mile north of, on east bank of abandoned Enterprise Canal, about 900 feet south of point where canal leaves river bank at small angle, on highest point on crown of canal bank, about 1,200 feet south and 1,800 feet west of northeast corner of sec. 24, T. 13 S., R. 16 E., about 1,800 feet southwest of abandoned Peterson place; iron post set in cement (U. S. C. E. b. m. 351)----	205.95
Whites Bridge over Fresno slough, 3 miles east and 2 miles north of, 2,500 feet west and 550 feet south of northeast corner of sec. 36, T. 13 S., R. 15 E., at base of large black willow tree which is the most easterly one in a row of 13 about the same size, about 93 feet north of an old road, about 4,100 feet south of headgate of Lone Willow Slough, about 600 feet southeast of sharp bend in river to right; iron post set in cement (U. S. C. E. b. m. 357)-----	174.53
T. 13 S., R. 15 E., 3,000 feet northeast of southwest corner of sec. 26, 3 miles east of Mowrry house, at headgate of canal supplying Mowrry ranch, on levee 45 feet west of Center Bridge over headgate; iron post set in concrete (U. S. C. E. b. m. 358)-----	177.56
Mendota, 3.5 miles northeast of, about 2 miles east of Mowrry ranch, 450 feet southeast of fence, 400 feet northwest of edge of lake, 500 feet south of south bank of river, 1,350 feet north and 300 feet west of headgate at south end of Mowrry Lake, 1,200 feet west and 1,000 feet south of northeast corner of sec. 27, T. 13 S., R. 15 E.; iron post set in concrete (U. S. C. E. b. m. 359)-----	169.48
T. 13 S., R. 15 E., 1.25 miles east of Mowrry ranch buildings, 2.5 miles east of Miller & Lux (Mendota) dam, 2,500 feet north of irrigation canal supplying Mowrry ranch, 850 feet southwest of south river bank, 900 feet north and 1,200 feet west of southeast corner of sec. 21, 30 feet south of isolated clump of small trees; iron post set in concrete (U. S. C. E. b. m. 360)-----	167.10
T. 13 S., R. 15 E., 2,800 feet north and 900 feet west of southeast corner of sec. 20, 1,600 feet east of Mowrry ranch, 1 mile east of Miller & Lux Mendota dam, 200 feet west of point where canal abruptly leaves river bank, 80 feet south of river bank, 150 feet north of canal, 180 feet north of fence; iron post set in concrete (U. S. C. E. b. m. 361)-----	164.64

	Feet
T. 13 S., R. 15 E., 1,400 feet west and 2,500 feet north of southeast corner of sec. 19, 2.5 miles north of Mendota, 300 feet south of Mendota Dam, northwest corner of superintendent's residence; iron post set in concrete (U. S. C. E. b. m. 362)-----	165. 75
T. 13 S., R. 16 E., about 1,200 feet south of northwest corner of sec. 25; about 1 mile east and 4 miles north of Jamesan, on west boundary of M. O. Zeigler place, 1.5 feet east of fence behind old shed, 100 feet west of dwelling, 550 feet south of river bank, about 1,200 feet south of northwest corner of sec. 25; iron post set in concrete (U. S. C. E. b. m. 352)-----	196. 73
T. 13 S., R. 16 E., about 1,700 feet south and 1,200 feet west of northeast corner of sec. 27, 3.7 miles north of Jamesan, and about 1.25 miles southwest of Striven's place, in open field, on west bank of slough about 200 feet wide and 8 feet deep running north and south into large bend of river about midway of 2 parts of bend and about 750 feet north of old road running up river to Striven's place; iron post set in concrete-----	190. 25
T. 13 S., R. 16 E., about 1,700 feet north and 1,600 feet west of southeast corner of sec. 28, about 3.5 miles north and 1 mile west of Jamesan, at west end of curve (2-mile chord) of river, about 150 feet west of slough and about 120 feet south of line of brush, about 1,360 feet east of artesian well, about 250 feet southeast of southeast river bank at bend, about 560 feet south of river bank at mouth of slough; iron post set in concrete (U. S. C. E. b. m. 354)---	185. 250
Jamesan, about 3 miles north and 2 miles west of, 700 feet north and 1,500 feet west of southeast corner of sec. 29, T. 13 S., R. 16 E., old road up river crossed three washes or sloughs, after crossing the third, which has row of willow brush 200 feet long on its east bank and is about 1,800 feet from brush line on west bank of river, the road turns, bench mark is south of old road 50 feet and 1,200 feet from said third slough, about 1,000 feet west of another slough bearing southerly, about 1,200 feet south of river-bottom bank and 1,700 feet south of river bank; iron post set in concrete (U. S. C. E. b. m. 355)-----	179. 84
Jamesan, about 3 miles west and 3 miles north of, 550 feet north and 1,600 feet west of southeast corner of sec. 30, T. 13 S., R. 16 E., 2,200 feet south of south bank of river, it lies between road from Armadon place and a point where the south bank of a slough bends and approaches to within 100 feet of the road, 85 feet south of slough bank and 30 feet north of road; iron post set in concrete (U. S. C. E. b. m. 356)-----	180. 06
Mendota, 3.5 miles north of, 1.25 miles north of Mendota dam, 0.75 mile northeast of Helm ranch, 500 feet northwest of west bank of river, at junction on levee of south side of river with north bank of canal where canal turns at angle of about 90 degrees, 1,500 feet west and 600 feet south of northeast corner of sec. 18, T. 13 S., R. 15 E.; iron post set in concrete (U. S. C. E. b. m. 363)-----	162. 310
T. 13 S., R. 15 E., 2,400 feet south and 1,700 feet east of northwest corner of sec. 7, about 3.5 miles northeast of Helm ranch, about 1,500 feet northwest of old bee farm which is on east side of river, 415 feet north of bridge over canal at fence angle; iron post set in concrete (U. S. C. E. b. m. 364)-----	158. 820

	Feet
T. 13 S., R. 14 E., 800 feet east and 25 feet south of northwest corner of sec. 12, 3 miles northwest of Helm ranch, 50 feet south of canal, 160 feet southeast of old well, at southeast fence corner of old abandoned homestead; iron post set in concrete (U. S. C. E. b. m. 365)-----	154. 150
T. 13 S., R. 14 E., 1,500 feet south and 1,700 feet west of northeast corner of sec. 2, on west side of river, about 4,000 feet south of old Columbia ranch, about 0.75 mile north of an old abandoned homestead, and on east side of canal in curve where it turns west; iron post set in concrete (U. S. C. E. b. m. 366)-----	157. 070
Firebaugh, about 1.5 miles southeast of, 200 feet west of west river bank, about 4,000 feet northwest of old Columbia ranch, at fence line 10 feet west of road, about 2,000 feet south of where river makes large angle, 2,400 feet north and 1,700 feet east of southwest corner of sec. 34, T. 12 S., R. 14 E., 40 feet east of fence line running approximately north and south; iron post set in concrete (U. S. C. E. b. m. 367)-----	151. 560
Firebaugh, at northeast corner of barn, about 600 feet west of south end of south approach to Firebaugh Bridge, 2,400 feet south and 500 feet east of northwest corner of sec. 28, T. 12 S., R. 14 E.; iron post set in concrete (U. S. C. E. b. m. 368)-----	149. 080
Firebaugh, about 1 mile north of, about 2 miles south of Pozo farm, west side of river, on west side of Pozo Canal where canal is close to river bank, 1,900 feet south and 1,500 feet west of northeast corner of sec. 20, T. 12 S., R. 14 E.; iron post set in concrete (U. S. C. E. b. m. 369)-----	145. 160
T. 12 S., R. 14 E., 1,300 feet north and 2,400 feet east of southwest corner of sec. 8, about 2,000 feet south of Pozo farm, on west bank of river, between Pozo Canal and river and about 50 feet south of point where lateral leaves main canal and follows river; iron post set in concrete (U. S. C. E. b. m. 370)-----	142. 450
T. 12 S., R. 14 E., about 2,000 feet south of where river turns, 50 feet north of north bank of Pozo Canal, about 125 feet south of south bank of river, about 1 mile south of Pozo warehouse, about 1 mile north of Pozo farm, between Pozo Canal and river, 1,800 feet north and 900 feet west of southeast corner of sec. 5; iron post set in concrete (U. S. C. E. b. m. 371)-----	141. 020
T. 11 S., R. 14 E., 2,100 feet south and 2,600 feet west of northeast corner of sec. 32, about 2,000 feet north of Pozo warehouse, at angle in fence opposite headgate to canal (lateral), 200 feet west of main canal, 300 feet west of river bank; iron post set in concrete (U. S. C. E. b. m. 372)-----	138. 860
T. 11 S., R. 14 E., 1,100 feet south and 2,200 feet west of northeast corner of sec. 30, south bank of slough, 650 feet west of Pozo Canal flume over slough, about 800 feet west of river bank, 1.5 miles northeast of Pozo warehouse, 1.5 miles southeast of Central ranch, 230 feet west of wooden bridge, in fence corner; iron post set in concrete (U. S. C. E. b. m. 373)-----	135. 90
T. 11 S., R. 14 E., 300 feet south and 700 feet east of northwest corner of sec. 19, 0.75 mile east of Central ranch, in bend in river, 250 feet west of west bank, 150 feet west of west bank of Pozo Canal, on curve in fence line; iron post set in concrete (U. S. C. E. b. m. 374)-----	134. 32

	Feet
T. 11 S., R. 13 E., 300 feet north and 2,400 feet west of southeast corner of sec. 12, 1 mile northeast of Central ranch, in south end of concrete headgate, flume, and bridge, 150 feet west of west bank of river; iron post set in concrete (U. S. C. E. b. m. 375)---	134.750
T. 11 S., R. 13 E., 2,000 feet north and 100 feet west of southeast corner of sec. 2, about 2 miles north of Central ranch, 200 feet west of west bank of river, 3 feet south of northwest corner of house at Chinaman's camp, 100 feet west of main canal and 30 feet north of lateral; iron post set in concrete (U. S. C. E. b. m. 376)-----	130.020

MENDOTA QUADRANGLE

[Latitude 36° 45' - 36° 52' 30"; longitude 120° 15' - 120° 22' 30"]

FRESNO AND MADERA COUNTIES

Primary leveling by L. F. Biggs in 1919

	Feet
From Gravelly Ford quadrangle west along highways near north border of Mendota quadrangle. (The part west of Aliso was leveled twice)	
T. 12 S., R. 16 E., about 0.5 mile southwest of northeast corner of sec. 30, 15 feet south of Aliso Mill triangulation station, on north one of three concrete watering troughs; chiseled point, chiseled "U. S. 181"-----	181.24
Aliso Mill triangulation station, 0.5 mile west of, on northwest corner of canal bridge; spike, painted "U. S. 181"-----	181.10
T. 12 S., R. 15 E., near northwest corner of sec. 26, 150 feet southeast of red tank and mill, at northwest corner of stock corral, under cottonwood tree, in concrete post; bronze tablet stamped "174 1919 B B 8"-----	174.685
Aliso triangulation station, 1 mile southeast of, 20 feet north of road; top of post, painted "U. S. 169"-----	170.04
Aliso triangulation station, 1,500 feet northeast of angle in road to northeast, 100 feet south of road, top of sand dune; iron post stamped "170 1919 B B 9"-----	170.391
Canal bridge, in railing; spike, painted "U. S. 165"-----	165.90
Firebaugh, 6.4 miles east of, south of road, at angle in road to west, in fence post painted "U. S. 157"; spike-----	157.60
Firebaugh, 5.4 miles east of, 20 feet west of gate leading to M. & L. Columbia ranch house, on south fence line, in concrete post; bronze tablet stamped "157 1919 B B 10"-----	157.534
Firebaugh, 4.7 miles east of, southeast corner of bridge over creek, in top of post, painted "U. S. 157"; nail-----	157.58
From Mendota north along highways near west border of Mendota quadrangle to San Joaquin River and into Firebaugh quadrangle	
Mendota, 0.5 mile northwest of, in concrete base of semaphore 174; chiseled "U. S. 175"-----	174.76
Mendota, 1.8 miles north of, northeast corner of canal bridge; spike, painted "U. S. 163"-----	163.20
Mendota, 2.5 miles north of, 300 feet south of Mendota Dam, northwest corner of superintendent's residence; iron post stamped "U. S. E. D. 362 169.3" (U. S. E. D. elev.=169.35)-----	165.750

	Feet
M. & L. Helm ranch, 200 feet southeast of mess hall, in gate post, painted "U. S. 157"; spike-----	157. 14
M. & L. Helm ranch, 0.75 mile northeast of, 500 feet west of river, east bank of canal; iron post stamped "U. S. E. D. 363 165.9" (U. S. E. D. elev.=165.91)-----	162. 310

MONOCLINE RIDGE QUADRANGLE

[Latitude 36° 30'-36° 37' 30"; longitude 120° 30'-120° 37' 30"]

FRESNO COUNTY

Primary leveling by W. H. Monahan in 1908

	Feet
From Levis quadrangle northwest along highways into Chaney quadrangle	
Ladd's ranch, 14.93 miles northwest of, 50 feet east of creek, 10 feet east of road leading from Cantua Creek to Chaney ranch; iron post stamped "Cal. 1908 495 G"-----	494. 342
Ladd's ranch, 16.19 miles northwest of, 10 feet west of wagon road leading from Cantua Creek to Cheney's ranch; a bottle in ground with board sunk beside it, marked "438"-----	437. 19
T. 15 S., R. 13 E., at corner of SW. ¼ sec. 35; iron post stamped "Cal. 1908 492 G"-----	491. 224
Ladd's ranch, 18.28 miles northwest of, 10 feet east of wagon road leading from Cantua Creek to Cheney's ranch; a bottle in ground with board sunk beside it, marked "504"-----	503. 42
Ladd's ranch, 19.21 miles northwest of, 10 feet west of wagon road leading from Cantua Creek north to Cheney's ranch, a bottle in ground with board sunk beside it; aluminum tag stamped "528"-----	527. 68
Ladd's ranch, 20.11 miles northwest of, between wagon road and creek, 400 feet north of where road crosses creek; iron post stamped "Calif. 1908 555 G"-----	554. 742
Ladd's ranch, 21.21 miles northwest of, 10 feet west of wagon road; a bottle in ground with board sunk beside it; aluminum tag stamped "579"-----	578. 81
Ladd's ranch, 22.34 miles northwest of, 10 feet west of wagon road, in post 2 by 2 by 4 inches sunk in ground; aluminum tag stamped "572"-----	571. 62
Ladd's ranch, 23.24 miles northwest of, on west side of wagon road leading north from Cantua Creek to Cheney's ranch, 100 feet south of where road crosses ravine; iron post stamped "Cal. 1908 584 G"-----	583. 462
Ladd's ranch, 24.31 miles northwest of, 10 feet west of wagon road leading north from Cantua Creek to Cheney's ranch; a bottle in ground marked "560"-----	559. 81

NO. 28 QUADRANGLE

[Latitude 36° 22' 30"-36° 30'; longitude 120° 15'-120° 22' 30"]

FRESNO COUNTY

Primary leveling by L. O. Newsome in 1923

	Feet
East along north border of quadrangle into No. 29 quadrangle	
T. 16 S., Rs. 14 and 15 E., bronze tablet stamped "382 1919 B. B. 51." (Initial elevation checked by running between two bench marks, closure +0.022, distance 1 mile)-----	382. 198

	Feet
T. 17 S., Rs. 14 and 15 E., 2.3 feet north of corner of secs. 1 and 6, 1 mile north of Half Way pump station; iron post stamped "N 1923 428"-----	428. 528
T. 17 S., R. 15 E., 0.8 mile east of township corner, southeast corner of fence; nail in fence post, marked "U. S. U. E." (?)-----	395. 29
T. 17 S., R. 15 E., 1.6 miles east of township corner, 40 feet east of road forks; nail in top of stake, marked "U. S. 364"-----	364. 72
T. 17 S., R. 15 E., north quarter corner sec. 4, 500 feet southwest of red house, 20 feet south of fence corner, south side of road; tin washer in top of 4 by 4 inch corner post, marked "U. S. 345"-----	346. 02
T. 17 S., R. 15 E., north corner secs. 3 and 4; iron post, marked "S. McKay L. S. section corner"-----	341. 328
T. 17 S., R. 15 E., near north corner of secs. 2 and 3, 1,500 feet south of sheep camp; iron post, stamped "N 1923 328"-----	328. 827
T. 17 S., R. 15 E., half a mile east of north corner of secs. 2 and 3, 30 feet east of road; tin washer in top of 2 by 4 inch post, marked "U. S. 313"-----	313. 36
T. 17 S., R. 15 E., north corner of secs. 1 and 2; tin washer in top of 3 by 3 inch post, marked "U. S. 303"-----	303. 31
T. 17 S., R. 15 E., north part of sec. 1; top of 4 by 4 inch post, marked "U. S. 298"-----	298. 92
T. 17 S., Rs. 15 and 16 E., 1.9 feet north of corner of secs. 1 and 6, 40 feet southwest of angle in telephone line, 150 feet north of signpost at road forks; iron post, stamped "N 1923 289"-----	289. 308

NO. 29 QUADRANGLE

[Latitude 36° 22' 30"-36° 30'; longitude 120° 07' 30"- 120° 15']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From San Joaquin quadrangle along highways southeast into Wheatville quadrangle

	Feet
Standard Oil town pump station, 1.4 miles northwest of, 50 feet north of fifth pole north of milepost 102; iron post, stamped "U. S. E. D. No. 318 Elev. 206.5" (U. S. E. D. elev. 206.50)-----	202. 900
Standard Oil town pump station, at northeast corner of building, top of concrete window sill; chiseled square, marked "U. S. 210"-----	210. 08

Primary leveling by L. O. Newsome in 1923

Along north border of quadrangle to point 1.4 miles northwest of Standard Oil town pump station

T. 17 S., R. 16 E., north corner of secs. 5 and 6, 15 feet east of fence corner; iron post stamped "N 1923 269 S. W. F. 1920"-----	269. 834
T. 17 S., R. 16 E., north corner of secs. 4 and 5, 15 feet northwest of fence south; iron post stamped "N 1923 253 S. W. F. 1920"-----	253. 379
T. 17 S., R. 16 E., 2.6 feet north of north corner of secs. 3 and 4, 800 feet south of windmill; iron post stamped "N 1923 234"-----	234. 548
T. 17 S., R. 16 E., north corner of secs. 2 and 3; iron post stamped "S. W. F. 1920 N 1923 221"-----	221. 094

	Feet
T. 17 S., R. 16 E., north corner of secs. 1 and 2; iron post stamped "S. W. F. 1920 N 1923 210"-----	210.282
T. 17 S., Rs. 16 and 17 E., corner of secs. 1 and 6; iron post stamped "S. W. F. 1920 N 1923 206"-----	206.982
Standard Oil town pump station, 1.4 miles northwest of, 50 feet north of fifth pole north of milepost 102; iron post stamped "U. S. E. D. No. 318 Elev. 206.5"-----	202.900

ORTIGALITA QUADRANGLE

[Latitude 36° 52' 30"-37°; longitude 120° 52' 30"-121°]

MERCED COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Valley pump station along highways southwest 3.0 miles, thence south into Arburna quadrangle (leveled twice)	
Valley pump station No. 5, 0.5 mile southeast of, in base of telephone pole 63-9 painted "U. S. 244"; spike-----	244.21
Valley pump station No. 5, 1 mile southwest of, south of road, in base of fence post painted "U. S. 475"; spike-----	475.25
Valley pump station No. 5, 2.5 miles southwest of, 60 feet southeast of Y road, 500 feet east of crossroads, top of 1 by 6 inch board painted "U. S. 558"; nail and washer-----	557.88
Valley pump station No. 5, 3 miles southwest of, 40 feet south of road, on brow of hill, in boulder; bronze tablet stamped "586 111 1919 BB 586"-----	586.038
Artigue ranch house, 200 feet northeast of, in northwest corner of bridge, painted "U. S. 495"; spike-----	494.76
Artigue ranch house, 0.9 mile southwest of, near gate, in fence post, painted "U. S. 540"; spike-----	539.48
Artigue ranch house, 1.7 miles south of, 200 feet east of creek crossing, in fence post, painted "U. S. 582"; spike-----	582.04
Artigue ranch house, 2.7 miles south of, 200 feet east of road, near second-class road south, on point of hill; bronze tablet stamped "115 1919 B B 643"-----	643.371
Old Ortigalita School, 800 feet northeast of, 20 feet east of gate, on summit of boulder; chiseled mark, chiseled "U. S. 708"-----	707.94
From point 3 miles southwest of Valley pump station No. 5 along highways west to point near west border of quadrangle, thence south and east to Carrisalito Springs, thence northeast to beginning. (The central part of this circuit was leveled twice)	
Valley pump station No. 5, 3 miles southwest of, 400 feet south of road at brow of hill, in boulder; tablet stamped "586 111 1919 B B"-----	586.038
Valley pump station No. 5, 4 miles southwest of, 0.1 mile east of old sheep camp, at crossroads; top of 1 by 6 inch board painted "U. S. 527"-----	526.94
Gaston Bide ranch house, 2.1 miles east of, 20 feet east of road at summit; top of rock chiseled "U. S. 621"-----	620.79
Gaston Bide ranch house, 1 mile east of, 10 feet south of road in saddle; on top of rock chiseled "U. S. 589"-----	588.58

	Feet
Gaston Bide ranch house, 250 feet north of house, north end of concrete watering trough; chiseled square, chiseled "U. S. 583"-----	583. 61
Gaston Bide ranch house, 0.6 mile northwest of, in gatepost painted "U. S. 564"; spike-----	564. 30
Gaston Bide ranch house, 250 feet north of house; top of trough-----	583. 61
Carrisalito Springs, southeast of, in base of cottonwood tree scribed "U. S. 810"; spike-----	809. 16
Ortignalita School, at southwest corner of yard, in post painted "U. S. 802"; spike-----	801. 78
Ortignalita School, 0.3 mile north of, on north and south fence line, on top of flat boulder; bronze tablet stamped "837 1919 B B 112"-----	836. 853
Ortignalita School, 0.7 mile north of, 60 feet south of gate, in fence post painted "U. S. 800"; spike-----	800. 24
Ortignalita School, 1 mile northeast of, at old well, south end of concrete sheep trough; chiseled square, chiseled "U. S. 728"-----	728. 12
Ortignalita School, 1.7 miles northeast of, 600 feet west of Y road to Arburna ranch, top of boulder; chiseled square marked "U. S. 691"-----	690. 85
From Quien Sabe quadrangle east along highways near north border of Ortignalita quadrangle to northwest corner of Charleston School quadrangle	
Los Banos Canyon, north edge of stream, 0.5 mile east of west end; top of boulder painted "U. S. 376"-----	375. 51
Los Banos Canyon, 1.2 miles west of, end of wagon road, on south bank and 40 feet above bed of creek, at rocky point, south edge of trail; top of rock, chiseled "U. S. 379"-----	377. 80
Mouth of Los Banos Canyon, 4.5 miles west of, 60 feet north of creek, 500 feet west of old cabin, top of boulder; bronze tablet stamped "115 1919 B B 321"-----	319. 758
Mouth of Los Banos Canyon, 3.5 miles west of, 200 feet west of old building, in base of willow tree scribed "U. S. 295"; nail-----	293. 85
Mouth of Los Banos Canyon, 2.5 miles west of, 20 feet north of road, in root of 18-inch sycamore tree scribed "U. S. 265"; nail-----	264. 42
Mouth of Los Banos Canyon, 1.5 miles west of, 50 feet south of windmill, in base of 24-inch cottonwood tree scribed "U. S. 236"; spike-----	234. 61
Los Banos Creek, 0.5 mile south of, 50 feet south of Valley pipe-line crossing, west of road, 10 feet north of south one of two gates, in fence post painted "U. S. 234"; spike-----	234. 52
From Valley pipe line east along highway to point 3.5 miles northwest of Charleston School (leveled twice)	
Los Banos Creek, 0.7 mile south of, 600 feet west of Valley pipe line, west side of road, in fence corner, in concrete post; bronze tablet stamped "307 39 1919 B B"-----	307. 152
T. 11 S., R. 10 E., north side of sec. 8, east bank of dry canal; top of 2 by 4 inch redwood stake scribed "U. S. 210"-----	210. 01
T. 11 S., R. 10 E., northeast corner of sec. 8, 10 feet west of main road, 40 feet southwest of second-class crossroads, 200 feet southwest of old mill, in concrete post; bronze tablet stamped "194 1919 B B 37"-----	193. 620

OXALIS QUADRANGLE

[Latitude 36° 52' 30''-37°; longitude 120° 30'-120° 37' 30'']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Wisdom Well quadrangle north along highways near east border of Oxalis quadrangle to point near its center, thence northwest to northeast corner of Dos Palos quadrangle (the last part leveled twice)

	Feet
Firebaugh, 5 miles northwest of, in base of telephone pole 69-2, painted "U. S. 156"; spike.....	156.89
Oxalis triangulation station, 5 miles northwest of Firebaugh, 0.4 mile west of pipe and telephone line, 0.7 mile south of canal crossing opposite telephone pole 69-1; iron post stamped "161 B B 1919 21".....	161.694
Silaxo, 1.2 miles southwest of, northwest corner of bridge over canal, in top of 12 by 12 inch post; spike, painted "U. S. 157".....	157.04
Silaxo, south edge of Southern Pacific R. R. right of way, in front of east end of pumping station, in concrete post; bronze tablet stamped "142 29 1919 B B".....	142.971
Silaxo, 1 mile southeast of, south end of concrete highway culvert over canal; chiseled "U. S. 148".....	148.07
Silaxo, 1 mile east by 1 mile north of, opposite T fence west, in fence post painted "U. S. 134"; spike.....	134.37
Silaxo, 1 mile east by 2 miles north of, at T road south, in gatepost painted "U. S. 132"; spike.....	132.67
Silaxo, 2 miles north of, 10 feet west of power pole 432, 30 feet east of T road north to M. & L. Silaxo farm, on north fence line, on concrete post; bronze tablet stamped "131 1919 B B 31".....	131.351
Silaxo farmhouse, 0.1 mile north of, at T road west, in gate post painted "U. S. 130"; spike.....	130.23
Silaxo farmhouse, 1 mile west of, in gatepost, painted "U. S. 129"; spike.....	129.44
Silaxo farmhouse, 1.5 miles west of, at north corner of canal bridge; spike, painted "U. S. 129".....	129.24
M. & L. Holland farmhouse, 1.5 miles east by 0.5 mile north of, 0.5 mile east of small eucalyptus grove, 200 feet west of canal bridge, 10 feet north of gate on fence line, on concrete post; bronze tablet stamped "132 1919 B B 32".....	132.081
M. & L. Holland farmhouse, 1.6 miles northeast of, east bank of canal, at road east, in corner fence post painted "U. S. 126"; spike.....	126.69
M. & L. Holland farmhouse, 1.9 miles northeast of, south end of east concrete abutment of canal headgate; chiseled "U. S. 127".....	127.17
Dos Palos, 4 miles east of, 1 mile south of, in floor of canal bridge, painted "U. S. 127"; spike.....	127.14
Dos Palos, 2.5 miles east by 0.5 mile south of, 400 feet northeast of I. W. Rider's farmhouse, 60 feet west of canal, at angle in road south, in north fence line, on concrete post; aluminum tablet stamped "119 B B 1919 33".....	118.848
Dos Palos, 1.5 miles east by 0.5 mile south of, 100 feet northeast of crossroads, in base of 18-inch cottonwood tree scribed "U. S. 118"; spike.....	117.85

	Feet
Dos Palos, 0.5 mile east by 0.5 mile south of, 40 feet southwest of crossroads, in corner fence post painted "U. S. 116"; spike-----	116.52

PANOCHÉ QUADRANGLE

[Latitude 36° 30'-37°; longitude 120° 30'-121°]

FRESNO, MERCED, AND SAN BENITO COUNTIES

Primary leveling by W. H. Monahan in 1908

From point about 13 miles southeast of Hayes to Jamison ranch, about 8 miles southwest of Los Banos

	Feet
Ladd's ranch, 14.9 miles northwest of, 50 feet east of creek, 10 feet east of road leading from Cantua Creek to Chaney ranch; iron post stamped "495 Cal 1908 G"-----	494.342
T. 15 S., R. 13 E., at corner of SW. ¼ sec. 35; iron post stamped "492 Cal 1908 G"-----	491.224
Ladd's ranch, 20.1 miles northwest of, between wagon road and creek, 400 feet north of point where road crosses creek; iron post stamped "555 Cal 1908 G"-----	554.742
Ladd's ranch, 23.2 miles northwest of, west of wagon road leading north from Cantua Creek to Chaney ranch, 100 feet south of point where road crosses ravine; iron post stamped "584 Cal 1908 G"---	583.462
Hayes, on road leading from Mendota and Fresno to mouth of Panoche Canyon, 95 feet north of Hayes store, 60 feet south of road, under red gum tree; iron post stamped "503 Cal 1908 G"---	502.143
Hayes, 3.9 miles northwest of, near base of foothills, 1 mile east of large canyon and 0.5 mile south of large swale; iron post stamped "616 Cal 1908 G"-----	615.921
Hayes, 7 miles northwest of, 10 feet west of road leading northwest from Hayes to Avery ranch; iron post stamped "529 Cal 1908 G"---	528.944
Hayes, 11.1 miles northwest of, 2.5 miles south of Little Panoche Creek; iron post stamped "523 G Cal. 1908"-----	523.087
Little Panoche Creek, 45 feet north of north bank, 1.5 miles northeast of Avery ranch; iron post stamped "407 Cal 1909 G"-----	406.800
Little Panoche Creek, 3.4 miles northwest of, 10 feet west of wagon road leading north from Avery ranch, near base of foothills; iron post stamped "384 Cal 1909 G"-----	383.389
Little Panoche Creek, 6.4 miles northwest of, 15 feet west of wagon road, 1,650 feet south of old deserted building, 0.5 mile east of foothills; iron post stamped "341 Cal 1909 G"-----	340.744
Little Panoche Creek, 10 miles northwest of, at forks of road, 75 feet west of San Joaquin & Kings River Canal & Irrigation Co.'s projected canal; iron post stamped "150 Cal 1909 G"-----	149.960

POZO FARM QUADRANGLE

[Latitude 36° 52' 30''-37°; longitude 120° 22' 30''-122° 30']

FRESNO AND MADERA COUNTIES

Primary leveling by L. F. Biggs in 1919

From Oxalis quadrangle east along highways to Pozo warehouse, thence north 2,000 feet

	Feet
Pozo warehouse, 1.5 miles west of, at angle in road south, in power pole 399 painted "U. S. 134"; spike-----	134.09

Feet

Pozo warehouse, at northeast corner of, 15 feet southwest of high-power pole, west bank of San Joaquin River; iron post stamped "137 30 1919 B B"-----	137. 874
Pozo warehouse, 2,000 feet north of, 200 feet west of canal, on fence line; iron post stamped "U. S. E. D. Elev. 142.5 No. 372"-----	138. 860

Primary leveling by D. S. Burkett in 1913

From Kentucky Well quadrangle west along highways near north border of
Pozo Farm quadrangle and north into Bliss Ranch quadrangle

T. 11 S., R. 14 E., southwest corner of sec. 1 (southwest corner of block 1, Chowchilla subdivision No. 3); top of corner post-----	146. 27
T. 11 S., R. 14 E., 100 feet west by 75 feet south of quarter corner between secs. 2 and 11 (quarter corner between blocks 2 and 11, Chowchilla subdivision No. 3), on north and south fence, 20 feet north of gate, in fence post marked "U. S. 145 B. M."; railroad spike-----	146. 03
T. 11 S., R. 14 E., 33 feet east by 33 feet south of northwest corner of sec. 10 (southwest corner of block 3, Chowchilla Subdivision No. 3); iron post stamped "1913 138"-----	138. 565

PRIEST VALLEY QUADRANGLE

[Latitude 36°-36° 30'; longitude 120° 30'-121°]

FRESNO, MONTEREY, AND SAN BENITO COUNTIES

Primary leveling by W. H. Monahan in 1908

From point 2.6 miles southeast of San Lucas southeast along railroad to point 3
miles southeast of San Ardo

Feet

San Lucas, 3.6 miles southeast of, on west side of track; iron post stamped "408-B"-----	406. 908
San Lucas, 6.6 miles southeast of, west of railroad, 100 feet south of road crossing; iron post stamped "1908 Cal 429 B" C. & G. S., 1920-----	428. 825
San Lucas, 7.5 miles southeast of, west of railroad, 100 feet north of block signal 1805, in telegraph pole; spike with aluminum tag stamped "403"-----	402. 75
San Lucas, 8.6 miles southeast of, west of railroad, in telegraph pole; spike with aluminum tag stamped "419"-----	418. 39
San Ardo, in front of station; top of rail, marked "458"-----	458. 0
San Ardo, 0.1 mile southeast of, east of railroad, 1,000 feet south of water tank, in base of target 1833; aluminum tablet stamped "1908 Cal 459 B" (not found 1917)-----	459. 81
San Ardo, 1.3 miles southeast of, east of railroad, in telegraph pole; spike with aluminum tag stamped "445"-----	444. 295

From point 10 miles northeast of King City along highway east to Lonoak,
thence southeast via Priest Valley to Crump's ranch, thence northeast 3.7
miles

King City, 12.7 miles southeast of, south of road, at ranch house, in gatepost leading to straw yard; spike with aluminum tag stamped "820"-----	822. 78
Lonoak, 0.8 mile north of, north of road, in telegraph pole; spike with aluminum tag stamped "925"-----	927. 43

	Feet
Lonoak, 1.6 miles north of, south of road, 500 feet west of Andrew Hopkins's residence, 400 feet west of where road crosses creek, in telegraph pole; spike with aluminum tag stamped "945"-----	947. 38
Lonoak, 2.3 miles north of, southeast corner of road intersection, 800 feet north of schoolhouse; iron post stamped "1908 Cal 1027"-----	1, 029. 834
King City, 17.1 miles east of, north of road, west of Pet Bengard's ranch dwelling, 5 feet south of creek, in telephone pole; spike with aluminum tag stamped "1029"-----	1, 028. 74
King City, 18.5 miles east of, south bank of Lewis Creek, 500 feet west of Pet Bengard's ranch house, in telegraph pole; spike with aluminum tag stamped "1107"-----	1, 107. 30
King City, 20.97 miles east of, north of road, on bank of Lewis Creek, 25 feet north of where road crosses creek, 500 feet north of Ernest Bengard's residence, in telephone pole; spike with aluminum tag stamped "1300"-----	1, 299. 66
Lonoak, 9.4 miles southeast of, 22.8 miles east of King City, east of road, on fence line of the C. O. T. Co.'s pump station No. 4; iron post stamped "1908 Cal 1404 B"-----	1, 404. 467
King City, 23.6 miles southeast of, south of road, 500 feet east of Miller & Lux goat ranch, 25 feet south of Lewis Creek, at angle in road, in telephone pole; spike with aluminum tag stamped "1455"-----	1, 454. 57
King City, 24.7 miles southeast of, 100 feet north of where road crosses creek, in leaning cottonwood tree; spike with aluminum tag stamped "1518"-----	1, 517. 65
King City, 25.6 miles southeast of, north of road, 10 feet south of Lewis Creek, 600 feet south of schoolhouse, in telephone pole; spike with aluminum tag stamped "1580"-----	1, 579. 92
King City, 26.8 miles southeast of, on south side of road, 50 feet north of Lewis Creek, 200 feet west of where road crosses creek, in large pine tree; spike with aluminum tag stamped "1669"-----	1, 669. 04
King City, 27.7 miles southeast of, across creek in San Benito County, on James Bengard's ranch, 50 feet west of creek, in telephone pole; spike with aluminum tag stamped "1725"-----	1, 724. 68
Lonoak, 15.3 miles southeast of, on Bengard ranch, in front of residence beside fence, 20 feet north of barnyard gate; iron post stamped "1908 Cal 1766"-----	1, 765. 832
Bengard ranch, 100 feet east of, north of road, in telephone pole; spike with aluminum tags stamped "1843"-----	1, 842. 79
Bengard ranch, 2.4 miles east of, north of road, 150 feet east of where road crosses Lewis Creek and enters big cut, in leaning cottonwood tree; spike with aluminum tag stamped "1944"-----	1, 944. 07
Bengard ranch, 3.1 miles east of, north of road, 50 feet north of angle in road, 150 feet north of Lewis Creek, in telephone pole; spike with aluminum tag stamped "1988"-----	1, 987. 91
Bengard ranch, 5.1 miles southeast of, south of road, 1,000 feet south of white ranch house, 100 feet north of Lewis Creek, where road crosses creek; iron post stamped "1908 Cal 2198"-----	2, 197. 909
Bengard ranch, 6.2 miles southeast of, north of road, 500 feet south of Griffin residence, in telephone pole; spike with aluminum tag stamped "2254"-----	2, 254. 44
Bengard ranch, 7.4 miles southeast of, north of road, 0.5 mile southeast of Palmer Bros.' store, in telephone pole; spike with aluminum tag stamped "2327"-----	2, 327. 56

	Feet
Bengard ranch, 8.1 miles southeast of, north of road, 200 feet east of gate leading to ranch with white house, in telephone pole; spike with aluminum tag stamped "2372"-----	2, 372. 51
Bengard ranch, 9.5 miles southeast of, 300 feet north of Maren's ranch house, in telephone pole; spike with aluminum tag stamped "2490"-----	2, 490. 36
Bengard ranch, 10.1 miles southeast of, 20 feet north of road, on summit of divide, in base of large oak tree; spike with aluminum tag stamped "2580"-----	2, 579. 95
Bengard ranch, 11.3 miles southeast of, north of road under large cottonwood tree; iron post stamped "1908 Cal 2057"-----	2, 057. 142
Bengard ranch, 12.1 miles southeast of, north of road, 0.8 mile north of C. O. T. Oil Co.'s pumping station, in pine tree; spike with aluminum tag stamped "1968"-----	1, 968. 27
C. O. T. Oil Co.'s pumping station, 0.25 mile southeast of, in telephone pole on north bank of creek, 100 feet north of road; spike with aluminum tag stamped "1863"-----	1, 863. 41
C. O. T. Oil Co.'s pumping station, 1 mile southeast of, north of road, in telephone pole; spike with aluminum tag stamped "1794"-----	1, 794. 08
C. O. T. Oil Co.'s pumping station, 2.2 miles southeast of, north of road, 20 feet north of creek, in cottonwood tree; spike with aluminum tag stamped "1681"-----	1, 681. 01
C. O. T. Oil Co.'s pumping station, 2.6 miles southeast of, south of road under cottonwood tree, 300 feet west of where road crosses creek; iron post stamped "1908 Cal 1661 B"-----	1, 660. 88
C. O. T. Oil Co.'s pumping station, 3.96 miles east of, north of road, 100 feet west of gulch, in telephone pole; spike with aluminum tag stamped "1603"-----	1, 603. 41
C. O. T. Oil Co.'s pumping station, 4.7 miles east of, north of road, 50 feet north of creek where pipe line crosses creek, in telephone pole; spike with aluminum tag stamped "1528"-----	1, 527. 85
C. O. T. Oil Co.'s pumping station, 5.9 miles east of, north of road, 100 feet south of Bennett's ranch house, in telephone pole; spike with aluminum tag stamped "1458"-----	1, 458. 10
Crump's ranch, east of road, under oak tree, 25 feet east of entrance to dwellings; iron post stamped "1460 B"-----	1, 460. 399
Crump's ranch, 0.8 mile east of, at forks of road, near post of sign "Fresno Hot Springs," in base of telephone pole; spike with aluminum tag stamped "1448"-----	1, 448. 52
Crump's ranch, 1.5 miles east of, northeast of road at angle to small gulch, in telephone pole; spike with aluminum tag stamped "1544"-----	1, 544. 82
Crump's ranch, 3.7 miles east of, north of road, 500 feet west of creek, in telephone pole; spike with aluminum tag stamped "1163"-----	1, 163. 81

Primary leveling by L. F. Biggs in 1917

From point near Lonoak north along highway near west border of quadrangle

Lonoak, 3.6 miles northwest of, west edge of road, in top of bridge upright, painted "U. S. B. M. 1,150"; copper nail-----	1, 149. 34
Lonoak, 4.7 miles northwest of, east edge of road, opposite old house, in base of telephone pole painted "U. S. B. M. 1,267"; spike-----	1, 266. 84

	Feet
Lonoak, 6 miles northwest of, east edge of road, 800 feet south of old house, in telephone pole; spike, painted "U. S. B. M. 1,378"-----	1,378.09
Lonoak, 6.5 miles northwest of, 2.8 miles southeast of Bitterwater pump station, east edge of road, opposite windmill at north corner of O'Connor's orchard; iron post stamped "1,412 1917 1"-----	1,411.316
Bitterwater pump station, 2.2 miles north of, north edge of road at T road south; iron post stamped "1,758 1917 2"-----	1,757.873

Precise leveling by the U. S. Coast and Geodetic Survey in 1919

Southeast along Southern Pacific R. R.

San Lucas, 1.7 miles southeast of, west head wall of concrete culvert 174 C, 5 meters west of center line of track, 1 meter below, railroad mileage 174.1; red metal disk (U. S. C. & G. S. b. m. A-23)-----	405.901
San Lucas, 4 miles southeast of, east head wall of highway concrete culvert, opposite railroad structure 176 B, 15 meters west of center line of track, 2 meters below, railroad mileage 176.4; red metal disk (U. S. C. & G. S. b. m. B-23)-----	402.322
San Lucas, 6.3 miles southeast of, east head wall of highway concrete culvert, 400 feet south of cattle guard 178 D, 15 meters west of center line of track, 3.5 meters below, railroad mileage 178.7; red metal disk (U. S. C. & G. S. b. m. C-23)-----	423.031
San Lucas, 6.6 miles southeast of, west of railroad, 100 feet south of road crossing, railroad mileage 179.2; U. S. G. S. aluminum bronze tablet stamped "1908 Cal 429 B" set on iron pipe (U. S. C. & G. S. b. m. D-23)-----	428.825
San Ardo, 1.7 miles southeast of, in base of block signal 1846, 3 meters west of center line of track, railroad mileage 184.6; on horizontal surface of masonry or metal; surface within an outlined square (U. S. C. & G. S. b. m. E-23)-----	441.617
San Ardo, 3.1 miles southeast of, east of track, in corner of culvert under railroad, railroad mileage 186; C. S. bronze tablet stamped (U. S. C. & G. S. b. m. F-23)-----	465.780

SAN JOAQUIN QUADRANGLE

[Latitude 36° 30' - 36° 37' 30"; longitude 120° 07' 30" - 120° 15']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Englebrecht Farm quadrangle east along highways into Helm quadrangle
(first half leveled twice)

	Feet
Tranquillity, 2.6 miles south by 0.5 mile east of, in floor of canal bridge, painted "U. S. 172"; nail-----	172.28
Red Bridge, 2 miles west of, at T road east, in northeast corner of culvert, painted "U. S. 172"; spike-----	171.93
San Joaquin, 3 miles west of, 300 feet southeast of Hans Hansen's farmhouse, at corner of fence, in concrete post; bronze tablet stamped "1919 B B 60 173"-----	172.380
San Joaquin, 2 miles west of, center of Red bridge; top of bolthead, painted "U. S. 180"-----	179.84

	Feet
San Joaquin, 1 mile west of, south of road, at T road south, in east end of corrugated-iron culvert, painted "U. S. 171"-----	171. 17
San Joaquin Public School, north end of concrete step to east entrance to schoolhouse; chiseled square, marked "U. S. 175"-----	174. 58
NOTE.—This schoolhouse was burned down since this bench mark was established, and bench mark probably is destroyed.	
San Joaquin Public School, at northeast corner of yard, in concrete post; bronze tablet stamped "173 1919 61 B B"-----	172. 682
From Jamesan quadrangle south along highways near northwest corner of San Joaquin quadrangle	
Tranquillity, 2 miles south of, at T road east, in fence corner, painted "U. S. 166" spike-----	166. 63
From Englebrecht Farm quadrangle southeast across southwest part of San Joaquin quadrangle into No. 29 quadrangle	
Mendota oil station, 6.3 miles southeast of, in base of telephone pole 109, painted "U. S. 188"; spike-----	188. 28
Milepost 109, 0.7 mile south of, at quarter corner between secs. 8 and 9, top of 3 by 3 inch stake; painted "U. S. 198"-----	198. 17
T. 16 S., R. 16 E., corner of secs. 8, 9, 16, and 17; top of 3 by 3 inch stake, scribed "U. S. 205"-----	205. 40
Mendota oil station, 8.4 miles southeast of, 12 feet north of second telephone pole south of milepost 107, at slight angle eastward in pole line, in concrete post; bronze tablet stamped "197 54 1919 B B"-----	196. 804
Town oil pump station, 5.2 miles northwest of, in base of milepost 106, painted "U. S. 196"; spike-----	195. 94
Town oil pump station, 4.2 miles northwest of, fifth telephone pole north of road crossing, in base of milepost 105, painted "U. S. 195"; spike-----	194. 76
Standard Oil Co.'s town pump station, 3.7 miles north of, 10 feet south of milepost 104, in concrete post; bronze tablet stamped "199 B B 1919 55"-----	198. 799
Town oil pump station, 2.2 miles northwest of, in base of milepost 105 painted "U. S. 199"; spike-----	199. 10

TIERRA LOMA SCHOOL QUADRANGLE

[Latitude 36° 37' 30''-36° 45'; longitude 120° 37' 30''-120° 45']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Little Panoche quadrangle south along highways to Tierra Loma, thence southeast into Chaney Ranch quadrangle

	Feet
Tierra Loma School, 1.6 miles north of, in corner fence post painted "U. S. 346"; spike-----	346. 12
Tierra Loma School, 1 mile north of, at Valley pipe line crossing, in telephone pole painted "U. S. 363"; spike-----	363. 27
Tierra Loma School, 60 feet east of west edge of road, on fence line, in concrete post; bronze tablet stamped "394"-----	394. 780

	Feet
Tierra Loma School, 1.4 miles southeast of, in telephone pole 41-23 scribed "U. S. 366"; spike-----	366.99
Tierra Loma School, 2.6 miles southeast of, in telephone pole 40-16 scribed "U. S. 381"; spike-----	381.78

Primary leveling by W. H. Monahan in 1908

From Hayes northwest along highways into Little Panoche quadrangle

Chaney ranch, 3.2 miles west of, 100 feet west of creek, in telephone pole scribed "U. S. 499"; spike-----	499.36
Hayes, on road leading from Mendota and Fresno to mouth of Big Panoche Canyon, 95 feet north of Hayes store, 60 feet south of road, under red-gum tree; iron post stamped "Cal. 1908 503 G"---	502.143
Hayes store, 0.94 mile northwest of, 10 feet west of wagon road; a bottle in ground with board beside it, aluminum tag stamped "505"-----	504.22
Hayes store, 1.99 miles northwest of, 100 feet southwest of homesteader's cabin, on west side of wagon road, in post; aluminum tag stamped "526"-----	525.57
Hayes, 3.07 miles northwest of; a bottle in ground with board sunk beside it, aluminum tag stamped "599"-----	598.57
Hayes, 3.92 miles northwest of, near base of foothill, 1 mile east of large canyon, 0.50 mile south of large swale; iron post stamped "Cal. 1908 616 G" (reported disturbed, Frankhauser 1920)-----	615.921
Hayes, 4.97 miles northwest of, near base of foothill; a bottle sunk in ground with board sunk beside it, aluminum tag stamped "554"-----	554.14
Hayes, 6.08 miles northwest of; a bottle in ground with post sunk beside it, aluminum tag stamped "524"-----	524.14
Hayes, 6.99 miles northwest of, 10 feet west of wagon road leading northwest from Hayes to Avery ranch; iron post stamped "Cal. 1908 529 G" (reported disturbed, Kiger, 1920)-----	528.944
Hayes, 8.02 miles northwest of, on edge of swale, in wooden post 4 by 4 inches by 4 feet embedded in ground 2 feet; aluminum tag stamped "533"-----	532.90

TRANQUILLITY QUADRANGLE

[Latitude 36° 37' 30''-36° 45'; longitude 120° 15'-120° 22' 30'']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Jamesan quadrangle west along highways to Whites Bridge over Kings slough (leveled twice)

	Feet
Whites Bridge, 4.8 miles east of, in base of telephone pole 88-12 painted "U. S. 163"; spike-----	168.64
Whites Bridge, 3.8 miles east of, 60 feet east of telephone pole 87-15; iron post stamped "U. S. E. D. 332, Elev. 173.0" (U. S. E. D. elev.=173.05)-----	169.679
Whites Bridge, 2.8 miles east of, in base of telephone pole 86-14 painted "U. S. 165"; spike-----	164.92

Feet

Whites Bridge, 1.8 miles east of, in base of telephone pole 85-13 painted "U. S. 164"; spike-----	164. 10
Whites Bridge, 0.8 mile east of, at road north to Herman house triangulation station, in telephone pole 84-20 painted "U. S. 164"; spike-----	164. 01
Whites Bridge, 300 feet east of, north side of road; U. S. E. D. iron post 331 (without cap), U. S. E. D. elev. reduced 0.05 foot for loss of cap is 170.93-----	167. 330
Whites Bridge, top of southwest concrete pier; bronze tablet stamped "165 1919 B B 45"-----	164. 932

From Whites Bridge west along highways into Tufts Ranch quadrangle

Whites Bridge, 1.2 miles west of, 2.5 miles southeast of Mendota, 50 feet west of T road north; top of 2-inch galvanized pipe set in concrete, stamped "169"-----	169. 11
Whites Bridge, 1.7 miles west of, at telephone-line crossing, in base of telephone pole painted "U. S. 172"; spike-----	171. 67

From Mendota southeast along highways to Whites Bridge

Mendota, 1 mile east of, at angle in road south, in base of power pole 81-35 painted "U. S. 169"; spike-----	168. 84
--	---------

From point 6 miles south of Mendota east along highways 3 miles to U. S. E. D. bench mark

Mendota, 6 miles south of, T. 14 S., R. 15 E., southwest corner of sec. 31, in concrete post; bronze tablet stamped "196 47 1919 B B"-----	196. 512
Tps. 14 and 15 S., R. 15 E., corner of secs. 31, 32, 5, and 6, in fence post painted "U. S. 183"; spike-----	183. 55
Tps. 14 and 15 S., R. 15 E., corner of secs. 32, 33, 4, and 5, at T fence south, in corner fence post painted "U. S. 173"; spike-----	173. 17
Standard Oil Co.'s Mendota pump station, 2.5 miles northwest of, 40 feet west of pipe line, in fence corner; U. S. E. D. iron post 329 stamped "U. S. E. D. b. m. 329 (or 359?) Elev. 171.8" (U. S. E. D. elev.=171.76)-----	168. 160

From Tufts Ranch quadrangle east along highways near south border of Tranquillity quadrangle 4 miles, thence south into Englebrecht Farm quadrangle

T. 15 S., R. 15 E., corner of secs. 7, 8, 17, and 18, in corner fence post painted "U. S. 191"; spike-----	191. 41
T. 15 S., R. 15 E., corner of secs. 8, 9, 17, and 16, south edge of road; top of 4 by 4 inch stake painted "U. S. 179"-----	178. 56
T. 15 S., R. 15 E., corner of secs. 9, 10, 16, and 15, in corner fence post painted "U. S. 171"; spike-----	170. 88
T. 15 S., R. 15 E., corner of secs. 10, 11, 4, and 15, 800 feet west of Standard Oil Co.'s Mendota pump station, in fence corner, in concrete post; bronze tablet stamped "167 54 1919 B B"-----	167. 465

TUFTS RANCH QUADRANGLE

[Latitude 36° 37' 30''-36° 43'; longitude 120° 22' 30''-120° 30']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

From Mendota south along highways near east border of quadrangle into Levis quadrangle

	Feet
Mendota, 1.5 miles south by 0.5 mile west of, west side of road, in base of power pole 253 painted "U. S. 183"; spike-----	183. 03
Whites Bridge, 3 miles west of, 2.5 miles southwest of Mendota, opposite substation and T road west, on top of west end of concrete culvert; chiseled square, marked "U. S. 185"-----	184. 98
T. 14 S., R. 15 E., northwest corner of sec. 18, 2.5 miles southwest of Mendota, at northwest corner of substation, opposite T road west, in concrete post; bronze tablet stamped "184 1919 B B 46"-----	184. 406
Mendota, 3 miles south of, west side of road, in fence post painted "U. S. 189"; spike-----	189. 56
Mendota, 4 miles south of, west of road, in corner fence post scribed "U. S. 194"; spike-----	194. 10
Mendota, 5 miles south of, east of road, in fence post painted "U. S. 194"; spike-----	194. 44
Mendota, 6 miles south of, T. 14 S., R. 15 E., southwest corner of sec. 31, east edge of road, 6 feet north of fence corner, in concrete post; bronze tablet stamped "196 47 1919 B B"-----	196. 512
Mendota, 7 miles south of, 300 feet west of road, in base of old windmill tower painted "U. S. 198"; spike-----	198. 53
Mendota, 8 miles south of, west of road, opposite T road east to Tranquillity, in corner fence post painted "U. S. 200"; spike-----	200. 35

From Telephone ranch in Chaney Ranch quadrangle southeast along highways near west border of Tufts Ranch quadrangle into Levis quadrangle

M. & L. Telephone ranch, 0.6 mile south of, in telephone pole painted "U. S. 318"; spike-----	318. 04
M. & L. Telephone ranch, 1.8 miles south of, 1,000 feet north of crossroads, 20 feet west of road, top of 2 by 4 inch redwood stake scribed "U. S. 317"-----	316. 87
M. & L. Telephone ranch, 2 miles south of, 40 feet northwest of crossroads, in concrete post; bronze tablet stamped "74 1919 B B 319"-----	319. 444
M. & L. Telephone ranch, 4.4 miles south of, 0.5 mile east of water tank, 30 feet west of road, top of 2 by 4 inch redwood stake scribed "U. S. 337"-----	336. 70

From Mendota west along highways near north border of quadrangle

Tps. 13 and 14 S., R. 14 E., corner of secs. 35, 36, 1, and 2, 40 feet southeast of crossroads; corner fence post painted "U. S. 188" t. b. m.-----	188. 16
Tps. 13 and 14 S., R. 14 E., 30 feet west of corner of secs. 34, 35, 2, and 3, in gatepost painted "U. S. 202"; spike-----	201. 50
Tps. 13 and 14 S., R. 14 E., corner of secs. 33, 34, 3, and 4, in gatepost painted "U. S. 214"; spike-----	213. 54
T. 14 S., R. 14 E., 35 feet north of southwest corner of sec. 3; iron post stamped "U. S. E. D. 330 2301" (bench mark leaning, disturbed)-	226. 31

	Feet
T. 14 S., R. 14 E., 400 feet east of northwest corner of sec. 4, at T fence north, in fence post painted "U. S. 226"; spike (reported destroyed, Kiger, 1920)-----	226. 15
Tps. 13 and 14 S., R. 14 E., 6 feet south of fence corner, at corner of secs. 31, 32, 5, and 6, on concrete post; aluminum tablet stamped "246 1919 B B 67"-----	246. 110
Tps. 13 and 14 S., Rs. 13 and 14 E.; top of 4-inch pipe filled with concrete and set flush with ground, marked "U. S. 256" on 4 by 4 inch redwood stake-----	256. 49

TUMEY HILLS QUADRANGLE

[Latitude 36° 30'-36° 37' 30"; longitude 120° 37' 30"-120° 45']

FRESNO AND SAN BENITO COUNTIES

Primary leveling by R. A. Kiger in 1921

	Feet
From Hayes via Panoche and Silver creeks to point 5.2 miles southwest of Hayes (checked spur line)	
Hayes, on road from Mendota and Fresno to mouth of Panoche Creek, 90 feet north of Hayes store; iron post stamped "502 Cal. 1918" (Bull. 481, p. 84)-----	502. 143
Griffin Development Co.'s construction camp, at mouth of Panoche Canyon, in southeast wooden wing wall of wagon bridge over irrigation ditch; head of nail-----	538. 10
Griffin Development Co.'s diversion dam, on top of south wing wall; painted square-----	572. 90
Hayes, 2.2 miles southwest of, in southeast corner of concrete head-gate of Griffin Development Co.'s diversion dam on Panoche Creek; aluminum tablet stamped "577 1921"-----	576. 791
Griffin Development Co.'s diversion dam, 1.1 miles southwest of, on rock at junction of Panoche and Silver creeks; paint mark-----	599. 68
Junction of Panoche and Silver creeks, 1.4 miles southwest of, 130 feet southeast of large cottonwood tree, on large boulder; paint mark-----	653. 26
Junction of roads from Idria mine and Hollister to Mendota, 50 feet east of; top of iron pipe set in concrete-----	716. 88
Hayes, 5.2 miles southwest of, at junction of roads from Hollister and Idria mine on Silver Creek, 110 feet south of small creek, on concrete post; aluminum tablet stamped "1921 717"-----	718. 444

WHEATVILLE QUADRANGLE

Latitude 36° 22' 30"-36° 30'; longitude 120°-120° 07' 30"]

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

	Feet
From Helm quadrangle along highways south and west in northwest part of Wheatville quadrangle into No. 29 quadrangle	
Helm, 3 miles south of, T. 16 S., R. 18 E., at southwest corner of sec. 35, 75 feet northeast of T road north, in concrete post; bronze tablet stamped "196 1919 B B 16"-----	196. 636
Helm, 3 miles south by 0.3 mile west of, southeast corner of canal bridge painted "U. S. 199"; nail-----	199. 00

	Feet
Town, 1.9 miles east of, north end of canal bridge painted "U. S. 204"-----	204.45
Standard Oil Co.'s town pump station, at northeast corner of building, on top of concrete window sill; chiseled square, marked "U. S. 210"-----	210.08

Primary leveling by L. F. Biggs in 1919

From point 3 miles south of Helm east along highways into Burrel quadrangle	
Helm, 3 miles south of, 75 feet northeast of T road north; concrete post No. 66-----	196.64
Tps. 16 and 17 S., R. 17 E., corner of secs. 1, 2, 35, and 36, in corner fence post painted "U. S. 194"; spike-----	194.86
T. 16 S., R. 17 E., southeast corner of sec. 36, north side of road, at T fence north; iron post stamped "U. S. E. D. 317 197.8" (U. S. E. D. elev.=197.84)-----	194.497
Helm, 3 miles south by 3 miles east of, north of road, in fence post painted "U. S. 194"; spike-----	194.32
Fitzsimmons ranch, 100 feet east of Y road south, in gate post painted "U. S. 194"; spike-----	194.86

Primary leveling by H. S. Senseney and R. B. Steele in 1923

In northeast corner of quadrangle

T. 17 S., R. 18 E., 25 feet south of T road east, at corner of secs. 21, 22, 27, and 28; iron post stamped "26 S 1923"-----	205.441
Reference mark, 65 feet northeast of post, at northeast corner of T road east, in fence post; railroad spike-----	204.44
T. 17 S., R. 18 E., at northwest corner of crossroads, at corner of secs. 15, 16, 21, and 22, in top of 4 by 4 inch hub; copper nail and washer, marked "U. S. B. M. 199.8"-----	200.69
T. 17 S., R. 18 E., at southwest corner of T road south, at corner of secs. 9, 10, 15, and 16, in fence post; railroad spike, marked "U. S. B. M. 196.0"-----	196.95
T. 17 S., R. 18 E., about 0.2 mile east of corner of secs. 8, 9, 16, and 17, 7 feet east of fence corner at northeast corner of road forks; iron post stamped "27 S 1923"-----	198.516
Reference mark, 7 feet west of post, in fence post; railroad spike-----	197.67
T. 17 S., R. 18 E., SE. $\frac{1}{4}$ sec. 4, 0.7 mile south of bridge over Fresno slough, on west side of road at bend, in telegraph pole; railroad spike, not marked-----	197.39

In northeast corner of quadrangle (leveled twice)

Burrel, 1.2 miles south of, 1 mile southeast from highway concrete bridge over Fresno slough, in southeast angle of forks of slough, at angle east in levee, in base of willow tree; copper nail, painted "U. S. 206.0 B. M."-----	206.59
Burrel, 1 mile west of, 900 feet south of road, on west edge of levee, on east end of footbridge; copper nail, painted "U. S. 202.0 B. M."-----	202.64
P. B. M. Burrel, 1.1 miles west of, at Y road southwest, southwest corner of concrete bridge over Fresno slough; bronze tablet stamped "78-1919 B. B. 203"-----	203.304
Burrel, 300 feet northwest of depot, in crossing signboard, signed "U. S. 200"; railroad spike-----	200.090

WISDOM WELL QUADRANGLE

[Latitude 36° 45' -36° 52' 30''; longitude 120° 30' -120° 37' 30'']

FRESNO COUNTY

Primary leveling by L. F. Biggs in 1919

Along highway northwest across quadrangle near northeast corner of quadrangle

Firebaugh, 3.5 miles northwest of, in base of telephone pole 71-1; spike, painted "U. S. 161"-----	Feet 161.52
Firebaugh, 4.3 miles northwest of, in base of telephone pole 70-1; spike, painted "U. S. 159"-----	159.68
From point 2.5 miles west of Firebaugh, in Firebaugh quadrangle, west and south along highways near east border of Wisdom Well quadrangle and into Chaney Ranch quadrangle	
Tps. 12 and 13 S., R. 13 E., at end of T fence south, north corner of secs. 1 and 2, in concrete post; bronze tablet (?) stamped "69 1919 B B 182"-----	182.805
T. 13 S., R. 13 E., corner of secs. 1, 2, 11, and 12, in power pole painted "U. S. 194"; spike-----	194.48
T. 13 S., R. 13 E., corner of secs. 11, 12, 13, and 14, in base of power pole painted "U. S. 209"; spike-----	209.33
T. 13 S., R. 13 E., corner of secs. 13, 14, 23, and 24, 200 feet west of pump, at fence corner, at base of stake, in concrete post; bronze tablet stamped "1919 70 B B 223"-----	223.087
T. 13 S., R. 13 E., corner of secs. 23, 24, 25, and 26; top of 4 by 4 inch redwood stake, "U. S. 236" scribed on 1 by 6 inch redwood board-----	236.18
T. 13 S., R. 13 E., near quarter corner on north side of sec. 35, 20 feet west of road, in top of 1 by 6 inch redwood board; copper nail, scribed "U. S. 261"-----	261.02
T. 14 S., R. 13 E., NW. $\frac{1}{4}$ sec. 2, 400 feet south of second-class cross-roads, 30 feet west of road, in concrete post; bronze tablet stamped "275 1919 B B 68"-----	275.102