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SPIRIT LEVELING IN NEW MEXICO

1902 TO 1915, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER



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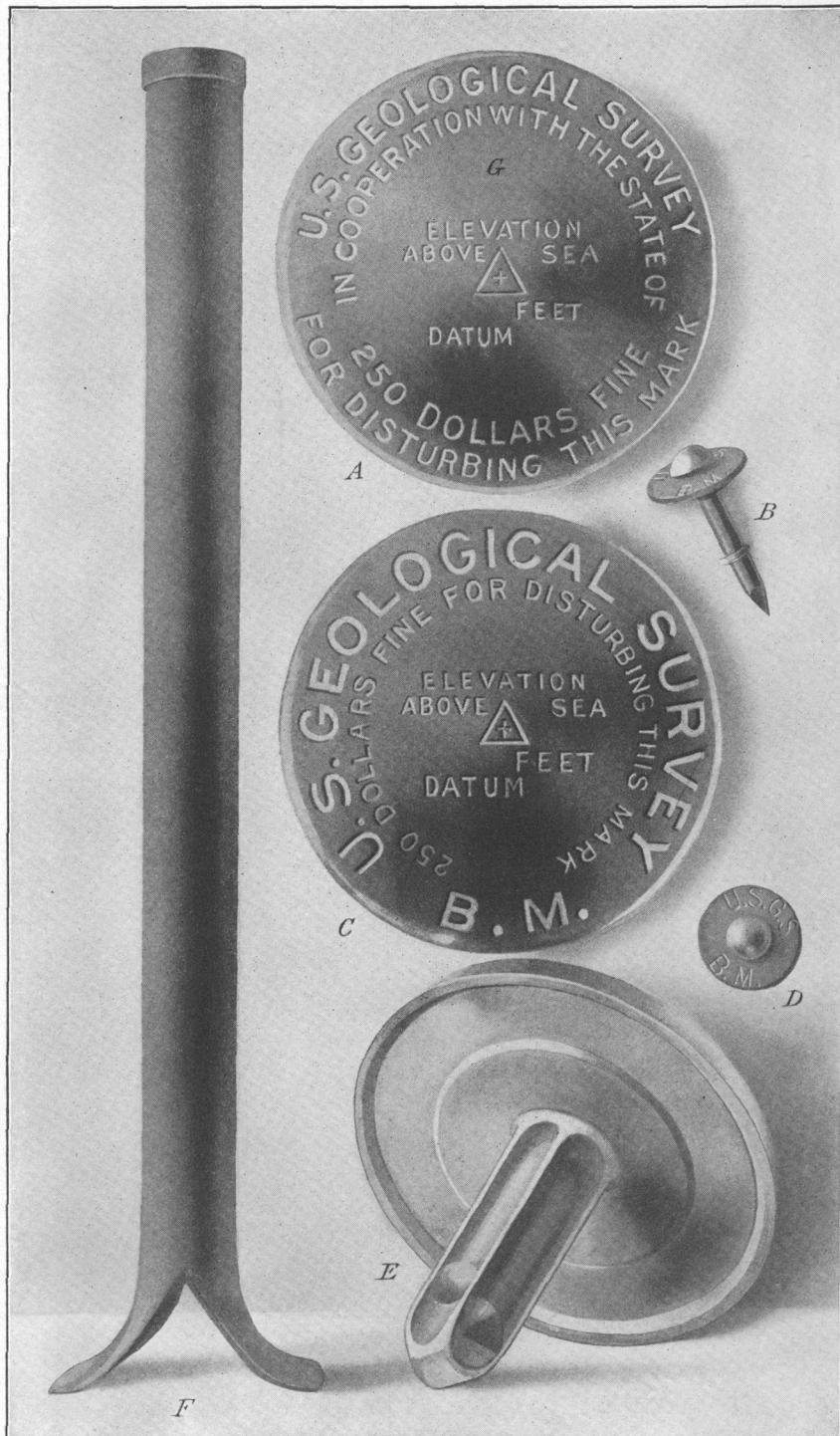
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GEOLOGICAL SURVEY BENCH MARKS.

A, Tablet used in cooperating States. The State name is inserted at G.
 B and D, Copper temporary bench mark, consisting of a nail and copper washer.
 A, C, and E, Tablets for stone or concrete structures.
 F, Iron post used where there is no rock.

SPIRIT LEVELING IN NEW MEXICO, 1902 TO 1915, INCLUSIVE.

R. B. MARSHALL, Chief Geographer.

INTRODUCTION.

Previous publication.—All results of spirit leveling in New Mexico from 1902 to 1909, inclusive, published by the United States Geological Survey in Bulletin 464, are republished in this report, together with results of leveling since 1909. All elevations are now based on the 1912 adjustment of heights of bench marks along the precise-level line of the United States Coast and Geodetic Survey from San Diego, Cal., via Mellen and Flagstaff, Ariz., to Albuquerque, N. Mex., and on the precise-level line of the United States Geological Survey from the Arizona-New Mexico boundary line via Rincon and Albuquerque to Cuba, N. Mex.

Personnel.—The field work from 1902 to 1906, inclusive, was done under E. M. Douglas, geographer, and the later work under E. C. Barnard and Sledge Tatum, geographers, under the general direction of R. B. Marshall, chief geographer. The names of the respective levelmen are given in the introductions to the several lists. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, under the general direction of E. M. Douglas, geographer.

Classification.—The elevations are classified as precise or primary according to the methods employed in their determination. For precise-level lines instruments and rods of the highest grade are used; each line is run both forward and backward, and every precaution is taken to guard against error. The allowable divergence between the forward and the backward lines in feet is represented by the formula $0.017\sqrt{D}$, in which D is the distance in miles between bench marks. For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by $0.05\sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given to the work to maintain this standard. For levels of both classes careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), $3\frac{1}{2}$ inches in diameter and one-quarter inch thick, having a 3-inch stem, which is cemented into a drill hole in solid rock in the wall of some public building, a bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. I), used where masonry or rock is not available, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length which is set about 3 feet in the ground. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze cap is riveted upon the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I) is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths inch in diameter. The tablets, as well as the caps on the iron posts, are appropriately lettered, and cooperation by States is indicated by the addition of the State name (*G*, Pl. I).

The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot, as determined by the levelman. These numbers are stamped with $\frac{3}{16}$ -inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea-level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey, at Washington, D. C., for the adjusted values, and will use the markings as identification numbers only.

Datum.—All elevations determined by the United States Geological Survey and the United States Coast and Geodetic Survey are referred to mean sea level, which is the level that the sea would assume if the influence of tides and winds were eliminated. This level is not the elevation determined from the mean of the highest and the lowest tides, nor is it the half sum of the mean of all the high tides and the mean of all the low tides, which is called the half-tide level.

Mean sea level is the average height of the water, all stages of the tide being considered. It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long, narrow bays, rivers, and like features, will not affect the height of the water. To obtain even approximately correct results these observations must extend over at least one lunar month, and if accuracy is desired, they must extend over several years. At ocean stations the half-tide level and the mean sea level usually differ but little. It is assumed that there is no difference between the mean sea levels

determined from observations in the Atlantic Ocean, the Gulf of Mexico, and the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the seacoast is still uncertain, and this fact is indicated by the addition of a letter or word to the right of the word "Datum" on tablets or posts. For such areas corrections for published results will be made from time to time as the precise-level lines of the United States Geological Survey, the Coast and Geodetic Survey, or other Government organizations are extended.

Topographic maps.—Maps of the following quadrangles wholly or partly in New Mexico have been published by the United States Geological Survey up to July 1, 1916. They may be obtained, except as noted, for 10 cents each or \$3 for 50, on application to the Director of the Survey at Washington, D. C.

Albuquerque.	Las Vegas.
Bernal.	Mogollon.
Brilliant.	Morenci (Ariz.-N. Mex.).
Canyon de Chelly (Ariz.-N. Mex.).	Mount Taylor.
Chaco.	St. Johns (Ariz.-N. Mex.).
Corazon.	San Pedro.
Deming.	Santa Clara.
Fort Bayard, special (10 cents).	Santa Fe.
Fort Defiance (Ariz.-N. Mex.).	Santa Rita, special.
Gallina.	Silver City.
Jemez.	Socorro.
Lamy.	Watrous.
Largo.	Wingate.
Las Cruces.	

PRECISE LEVELING.

Albuquerque, Engle, Las Cruces, Lajoya, Los Lunas, Rincon, San Marcial, Socorro, and Tonuco quadrangles.

BERNALILLO, DONA ANA, SIERRA, SOCORRO, AND VALENCIA COUNTIES.

The following are the results for the New Mexico portion of a precise-level line run in 1905 by M. S. Bright along the Atchison, Topeka & Santa Fe Railway from Albuquerque, N. Mex., south to El Paso, Tex.

ALBUQUERQUE QUADRANGLE.

[Latitude $35^{\circ}35'30''$; longitude $106^{\circ}30'107''$.]

From Albuquerque south along Atchison, Topeka & Santa Fe Ry. to San Marcial (part of line).

Albuquerque, corner of Railroad Avenue and First Street, at northwest corner of Alvarado Hotel grounds, in cement; iron post (U. S. Coast and Geodetic Survey, adjusted value 1912).	Feet.	4,953.202
Albuquerque, in front of station; top of rail.		4,953.9
Albuquerque, southwest corner of Coal and Second streets, 90 feet west of west end of viaduct over Atchison, Topeka & Santa Fe Ry. tracks, set in cement; iron post (U. S. Coast and Geodetic Survey adjusted value 1912).		4,950.863

Albuquerque, southeast corner of foundation of first pier west of main line of Atchison, Topeka & Santa Fe Ry. under south side of viaduct; cross..	4, 953. 68
Albuquerque, 3.2 miles south of, 60 feet west of track, at third telegraph pole north of gate; iron post (U. S. Coast and Geodetic Survey, adjusted value 1912).....	4, 931. 470

LOS LUNAS QUADRANGLE.

[Latitude 34° 30'-35°; longitude 106° 30'-107°.]

From Albuquerque south along Atchison, Topeka & Santa Fe Ry. to San Marcial (part of line).

Albuquerque, 6.3 miles south of, 900 feet south of milepost 909, 55 feet east of tracks, 18 feet south of gate; iron post (U. S. Coast and Geodetic Survey, adjusted value 1912).....	4, 928. 068
Barr, in front of signboard; top of rail.....	4, 912. 7
Isleta, 3 miles north of, west of track, 100 feet northwest of milepost 912, at southeast corner of toolhouse; top of bolt.....	4, 902. 31
Isleta, 3 miles north of, 450 feet north of milepost 912, 600 feet north of section house, 100 feet east of track; iron post (U. S. Coast and Geodetic Survey, adjusted value 1912).....	4, 904. 026
Isleta, 2 miles north of, on north pier of bridge over Rio Grande east of track; chiseled square.....	4, 901. 749
Isleta, in front of station; top of rail.....	4, 897. 3
Isleta, 0.2 mile southwest of station, 50 feet west of El Paso line track, 200 feet east of transcontinental line track, 5 feet north of stone post, in cement; iron post (U. S. Coast and Geodetic Survey, adjusted value 1912).....	4, 891. 073
Isleta, 2 miles south of, 500 feet south of milepost 917, on southwest cap of bridge 823; top of bolt.....	4, 879. 47
Isleta, 3.5 miles south of, 100 feet north of road crossing, 50 feet west of track; iron post.....	4, 870. 560
Los Lunas, 700 feet north of station, 60 feet west of track at road crossing, at northeast corner of Solomon Lunas's yard fence; iron post.....	4, 852. 415
Los Lunas, in front of station; top of rail.....	4, 852. 8
Los Lunas, 3 miles south of, 50 feet east of track, 10 feet north of gate; iron post.....	4, 833. 970
Los Lunas, 5.7 miles south of, 45 feet west of track, at road crossing; iron post.....	4, 822. 008
Belen, 1.2 miles north of, 50 feet east of track at road crossing; iron post.....	4, 809. 263
Belen, in front of station; top of rail.....	4, 805. 0
Belen, 1.7 miles south of, 50 feet west of junction with Belen cut-off, 260 feet south of milepost 934; iron post.....	4, 794. 114
Belen, 4.8 miles south of, 220 feet south of milepost 937, 50 feet west of track, 8 feet north of gate; iron post.....	4, 794. 649

LAJOYA QUADRANGLE.

[Latitude 34°-34° 30'; longitude 106° 30'-107°.]

From Albuquerque south along Atchison, Topeka & Santa Fe Ry. to San Marcial (part of line).

Sabinal, 1.5 miles north of, 300 feet north of Valencia-Socorro county line, 50 feet west of track, 12 feet north of gate; iron post.....	4, 763. 731
Sabinal, in front of signboard; top of rail.....	4, 762. 7
Sabinal, 0.5 mile south of, 400 feet south of milepost 943, 45 feet west of track, 6 feet north of gate; iron post	4, 762. 251

Sabinal, 3.5 miles south of, 500 feet south of milepost 946, 50 feet west of track, 7 feet south of gate; iron post.....	4,742.903
Sabinal, 6.5 miles south of, 300 feet south of milepost 949, 50 feet east of road crossing at fence corner; iron post.....	4,740.135
Lajoya, 1.5 miles north of, 3 feet west of milepost 952, 50 feet east of track; iron post.....	4,719.751
Lajoya, in front of station; top of rail.....	4,714.0
Lajoya, 4.7 miles south of, 50 feet west of track, at fence line; iron post...	4,690.801
Alamillo, 4.2 miles north of, 180 feet west of bridge 886, 50 feet north of track; iron post.....	4,698.226
Alamillo, 3.5 miles north of, north end of steel bridge 889, 8 feet east of track, at corner of retaining wall; aluminum tablet.....	4,695.525
Alamillo, 1.8 miles north of, at north end of west guardrail of bridge 989-A; top of bolt.....	4,671.83

SOCORRO QUADRANGLE.

[Latitude 34°-34° 15'; longitude 106° 45'-107°.]

From Albuquerque south along Atchison, Topeka & Santa Fe Ry. to San Marcial (part of line).

Alamillo, in front of signboard; top of rail.....	4,664.9
Alamillo, 60 feet south of milepost 965, at northeast corner of fence at section house; iron post.....	4,652.954
Alamillo, 2.1 miles south of, north end of west guardrail of bridge 898-A; top of bolt.....	4,649.9
Alamillo, 3.7 miles south of, 50 feet east of track, at dike; iron post.....	4,634.555
Lemitar, in front of signboard; top of rail.....	4,625.2
Socorro, 1.5 miles north of, 800 feet north of milepost 976, 50 feet west of track; iron post.....	4,597.471
Socorro, in front of station; top of rail.....	4,588.2
Socorro, in front of Windsor Hotel, in line with curb; iron post.....	4,593.193
Socorro, 2.5 miles south of, 100 feet north of milepost 980, 50 feet west of track, in fence corner; iron post stamped "Socr 4568".....	4,574.151

SAN MARCIAL QUADRANGLE.

[Latitude 33° 30'-34°; longitude 106° 30'-107°.]

From Albuquerque south along Atchison, Topeka & Santa Fe Ry. to San Marcial (part of line).

Socorro, 5.5 miles south of, 1,000 feet south of milepost 983, 60 feet west of track, 125 feet east of adobe house, 3 feet north of gate; iron post.....	4,565.936
Socorro, 8.7 miles south of, 1,300 feet south of milepost 986, 50 feet west of track, 2 feet north of gate; iron post.....	4,548.387
San Antonio, in front of station; top of rail.....	4,545.4
San Antonio, 150 feet west of track, 6 feet south of southeast corner of Solomon B. Chavez's house; iron post.....	4,539.469
San Antonio, 2.5 miles south of, 27 feet west of track, at north end of base line, 15 feet north of signal; iron post.....	4,532.714
San Antonio, 6 miles south of, 60 feet west of track, 4 feet south of milepost 994; iron post.....	4,509.354
Elmendorf; top of rail.....	4,508.6
Elmendorf, 1.4 miles south of, in cement under signal at south end of base line; iron post.....	4,498.659

San Marcial, 6 miles north of, in north end of west guardrail of bridge 938; top of bolt.....	Feet.
	4,492.80
San Marcial, 5 miles north of, 300 feet south of milepost 1000, 50 feet west of track, at wire fence; iron post.....	4,489.247
San Marcial, 2.2 miles north of, 1,300 feet north of milepost 1003, 50 feet west of track, 2 feet north of gate; iron post.....	4,472.376
San Marcial, in front of station; top of rail.....	4,459.9
San Marcial, northwest corner of railroad park, 3 feet west of northwest gate, set in cement; iron post.....	4,458.518
San Marcial, northwest corner of railroad park, 3 feet west of northwest gate, set in cement; aluminum tablet.....	4,457.931
San Marcial, 0.75 mile south of, north end of railroad bridge over Rio Grande River, 4 feet east of rail, in coping stone; aluminum tablet stamped "107".....	4,462.963
San Marcial, 4 miles south of, east of track, 60 feet east of road crossing, 10 feet north of wagon road; iron post stamped "110".....	4,499.469
Pope, 36 feet east of main line, in line with telegraph poles; iron post stamped "113".....	4,581.881
Pope, in front of signboard; top of rail.....	4,580.4

ENGLE QUADRANGLE.

[Latitude 33°-33° 30'; longitude 107°-107° 30'.]

From San Marcial south along Atchison, Topeka & Santa Fe Ry. to Rincon (part of line).

Pope, 2.5 miles south of, south of telegraph pole, north of milepost 1015, 40 feet west of track, in line with telegraph poles; iron post stamped "116".....	4,643.350
Pope, 5.75 miles south of, one telegraph pole south of milepost 1018, 50 feet west of track, in line with telegraph poles; iron post stamped "119".....	4,720.817
Lava, 0.25 mile north of station, 700 feet south of milepost 1021, 50 feet east of track, in line with telegraph poles; iron post stamped "122".....	4,721.638
Lava, in front of station; top of rail.....	4,726.5
Lava, 0.5 mile south of station, on small flat surrounded by volcanic rock and lava, 14 rails south of milepost 1022, 8 rails north of point of curve, 106 feet west of track, under mound of volcanic rock flush with ground, in cement; iron post stamped "123".....	4,711.556
Lava, 3.5 miles south of, 45 feet west of track, 5 feet south of milepost 1025; iron post stamped "126".....	4,683.632
Lava, 6.5 miles south of, 45 feet west of track, 6 feet south of milepost 1028; iron post stamped "129".....	4,651.739
Lava, 9.5 miles south of, 45 feet west of track, 6 feet south of milepost 1031; iron post stamped "132".....	4,724.843
Crocker, in front of signboard; top of rail.....	4,730.8
Crocker, 2 miles south of, 40 feet west of track, south of milepost 1034; iron post stamped "135".....	4,786.306
Crocker, 5 miles south of, 40 feet west of track, 6 feet south of milepost 1037; iron post stamped "138".....	4,843.596
Crocker, 8 miles south of, 45 feet west of track, 5 feet south of milepost 1040; iron post stamped "141".....	4,786.264
Engle, 150 feet north of, between main line and side track of Atchison, Topeka & Santa Fe Ry.; iron post stamped "4727" (set by Reclamation Service).....	4,770.266
Engle, in front of station; top of rail.....	4,770.5

Engle, 3 miles south of, 45 feet west of track, 5 feet south of milepost 1046; iron post stamped "147"	Feet. 4,746.834
Engle, 6.25 miles south of, 0.25 mile south of milepost 1049, 700 feet south of lake, 135 feet south of cattle guard, 55 feet east of track, 5 feet south of telegraph pole; iron post in cement, stamped "150"	4,694.016
Engle, 6.25 miles south of, 4 inches west of bench 150; aluminum tablet set in cement, stamped "150½"	4,693.287
Cutter, in front of signboard; top of rail	4,710.9
Cutter, 0.75 mile south of, 45 feet west of track, 6 feet south of milepost 1052; iron post stamped "153"	4,715.575
Cutter, 3.75 miles south of, 45 feet west of track, 5 feet south of milepost 1055; iron post stamped "156"	4,685.909

RINCON QUADRANGLE.

[Latitude 32° 30'-33°; longitude 107°-107° 30'.]

From San Marcial south along Atchison, Topeka & Santa Fe Ry. to Rincon (part of line).

Aleman, in front of signboard; top of rail	4,668.7
Aleman, 1.75 miles south of, 45 feet west of track, 6 feet north of milepost 1058; iron post stamped "159"	4,643.567
Aleman, 4.75 miles south of, 45 feet west of track, 6 feet north of milepost 1061; iron post stamped "162"	4,598.324
Upham, in front of station; top of rail	4,560.9
Upham, 0.75 mile south of, 45 feet west of track, 6 feet north of milepost 1064; iron post stamped "165"	4,549.063
Upham, 3.75 miles south of, 45 feet west of track, 5 feet south of milepost 1067; iron post stamped "168"	4,491.865
Upham, 6.75 miles south of, 45 feet west of track, 5 feet north of milepost 1070; iron post stamped "171"	4,428.416
Upham, 9.25 miles south of, 45 feet west of track, 5 feet south of milepost 1073; iron post stamped "174"	4,362.872
Grama, in front of signboard; top of rail	4,348.9
Grama, 2.25 miles south of, 175 feet south of road crossing, 70 feet west of track, 25 feet west of milepost 1076; iron post stamped "177"	4,261.983
Rincon, 0.75 mile north of, at north end of bridge 1035, 5 feet east of rail, in concrete abutment; aluminum tablet stamped "180"	4,108.575
Rincon, in front of station; top of rail	4,058.8

From Rincon south along Atchison, Topeka & Santa Fe Ry. to La Tuna (part of line).

Rincon, at northwest corner of Kingman Street and Railroad Avenue, 10 feet south of L. F. Elliott's storehouse and post office, in cement; iron post stamped "283-B-1905"	4,063.467
Rincon, east side of, aluminum tablet in cement; stamped "283½-B-1905"	4,062.866
Rincon, 3 miles southeast of, midway between mileposts 1082 and 1083, 40 feet southwest of track, 5 feet west of gate, on fence line; iron post stamped 286-B-1905"	4,024.739
Detroit, in front of station; top of rail	4,012.8

TONUCO QUADRANGLE.

[Latitude 32° 30'-33°; longitude 106° 30'-107°.]

From Rincon south along Atchison, Topeka & Santa Fe Ry. to La Tuna (part of line).

Detroit, 0.5 mile south of, 45 feet southwest of public road crossing, by wire fence, about 300 feet south of milepost 1086; iron post stamped "290-B-1905".....	Feet.
	4,012. 131
Tonuco, in front of signboard; top of rail.....	4,003. 7
Tonuco, 1.5 miles south of, 100 feet east of track, at foot of bluff; 45 feet east of milepost 1089; iron post stamped "293-B-1905".....	3,993. 178
Tonuco, 4.5 miles south of, north side of canyon, 45 feet east of track, 100 feet east of river, 80 feet northeast of bridge 55; iron post stamped "296-B-1905".....	3,989. 230

LAS CRUCES QUADRANGLE.

[Latitude 32°-32° 30'; longitude 106° 30'-107°.]

From Rincon south along Atchison, Topeka & Santa Fe Ry. to La Tuna (part of line).¹

Tonuco, 7.5 miles south of, about 0.75 mile north of Selden; 100 feet east of track, 45 feet east of milepost 1905, by wire fence; iron post stamped "299-B-1905".....	3,968. 641
Selden, in front of signboard; top of rail.....	3,970. 4
Selden, 1 mile south of, about 1 mile north of old Fort Selden, in rock which projects about 40 feet into river; aluminum tablet stamped "3932" (Reclamation Service bench mark).....	3,972. 820
Selden, 3.75 miles south of, on fence line midway between old and new railroad grade about 200 feet north of the intersection of the two grades; iron post stamped "303-B-1905".....	3,956. 908
Stewart ranch, 900 feet south of house, 95 feet northeast of public road crossing, 5 feet west of fence corner, on west side of wagon road; iron post stamped "306-B-1905".....	3,969. 723
Stewart ranch, 2.5 miles south of, 400 feet south of milepost 1105, 40 feet west of road crossing, 7 feet south of gate, on fence line; iron post stamped "309-B-1905".....	3,932. 309
Dona Ana, in front of station; top of rail.....	3,920. 9
Dona Ana, 1 mile south of, about 500 feet south of milepost 1108, 700 feet northeast of two-story brick house, north side of lane, 45 feet east of road crossing, 6 feet west of fence corner; iron post stamped "312-B-1905".....	3,913. 420
Dona Ana, 4 miles south of, 300 feet north of milepost 1111, 45 feet east of road crossing, 6 feet north of fence corner; iron post stamped "315-B-1905".....	3,900. 622
Las Cruces, in front of station; top of rail.....	3,896. 0
Las Cruces, 180 feet south of station, 15 feet west of main track, 12 feet north of water tank, in center of driveway; iron post stamped "3855" (set by Reclamation Service).....	3,896. 236
Las Cruces, 130 feet southwest of Dona Ana County courthouse, 30 feet east of fence corner; iron post stamped "3855" (set by Reclamation Service).....	3,896. 325
Las Cruces, City Park, 5 feet west of southeast corner of entrance, set in cement; iron post stamped "318-B-1905".....	3,894. 096
Mesilla Park, in front of station; top of rail.....	3,878. 4'

¹ For continuation of this line in Texas see Bulletin 637.

Mesilla Park, 450 feet south of station, midway between main track and side track; iron post stamped "3837".....	Feet.
	3,878.378
Mesilla Park, 2.75 miles south of, 200 feet southeast of milepost 1118, 45 feet west of road crossing, 4 feet east of fence corner; iron post stamped "323-B-1905".....	3,866.387
Mesilla Park, 4.75 miles south of, 40 feet east of track, 10 feet northwest of milepost 1120; iron post stamped "3813".....	3,854.507
Mesilla Park, 7.75 miles south of, 60 feet east of track, 15 feet east of milepost 1123; iron post stamped "328-B-1905".....	3,843.657
Mesquite, in front of signboard; top of rail.....	3,840.2
Mesquite, 38 feet east of main line, 7 feet north of milepost 1124; iron post stamped "3794".....	3,835.668
Mesquite, 3 miles south of, 100 feet northeast of milepost 1127, 90 feet east of road crossing, 6 feet south of gate; iron post stamped "332-B-1905".....	3,823.916
Vado, in front of station; top of rail.....	3,826.0
Vado, 100 feet south of station, in southeast corner of foundation stone under water tank; aluminum tablet stamped "3782".....	3,823.857
Berino, 0.25 mile south of milepost 1131, 100 feet east of main line, at west end of lane, 6 feet south of fence corner; iron post stamped "336-B-1905".....	3,803.148
Berino, in front of signboard; top of rail.....	3,807.0
Berino, 0.75 mile south of, 45 feet east of track, 10 feet north of milepost 1132; iron post stamped "3760".....	3,801.905
Berino, 3.25 miles south of, 100 feet west of road crossing, 6 feet east of fence corner; iron post stamped "340-B-1905".....	3,794.756
La Tuna, in front of signboard; top of rail.....	3,795.0
La Tuna, 33 feet west of main line, about 4 feet north of line between New Mexico and Texas; iron post stamped "3780".....	3,792.926

Deming, Rincon, Separ, and Silver City quadrangles.

DONA ANA, GRANT, AND LUNA COUNTIES.

The following are the unadjusted results of a line of precise levels along the Atchison, Topeka & Santa Fe Railway from Rincon west to Deming, thence northwest to Silver City.

The leveling was done in 1905 by M. S. Bright.

RINCON QUADRANGLE.

[Latitude 32° 30'-33°; longitude 107°-107° 30'.]

From Rincon west along Atchison, Topeka & Santa Fe Ry. to Deming, thence northwest to Silver City (part of line).

Rincon, 2.25 miles southwest of, 45 feet west of track at public road crossing, 4 feet south of milepost 1082; iron post stamped "183".....	Feet.
	4,039.051
Hatch, in front of station; top of rail.....	4,053.9
Hatch, 320 feet southwest of station, 95 feet southwest of track, at fence corner; iron post stamped "186".....	4,051.873
Hatch, 3 miles southwest of, 100 feet east of milepost 1088, 40 feet east of track; iron post stamped "189".....	4,213.635
Hatch, 6 miles south of, 45 feet west of track, 3 feet west of milepost 1091; iron post stamped "192".....	4,367.558
Hockett, 50 feet west of track, 5 feet south of milepost 1094, in front of section house; iron post stamped "195".....	4,513.188
Hockett, 3 miles south of, 45 feet west of track, 5 feet north of milepost 1097; iron post stamped "198".....	4,484.431

Hockett, 6 miles south of, 40 feet east of track, opposite milepost 1100; iron post stamped "201"	Feet.
..... 4, 492. 602	
Easley, in front of signboard; top of rail	4, 517. 03
Easley, 2 miles west of, 75 feet north of track, 30 feet east of milepost 1103; iron post stamped "204"	4, 608. 648
Nutt, 260 feet south of station, 234 feet south of south rail in main line, 40 feet east of gate near wire fence, in concrete; iron post stamped "206"	4, 719. 416
Nutt, 260 feet south of station, 234 feet south of south rail on main line, 40 feet east of gate near wire fence, set in cement 4 inches from above bench mark; aluminum tablet stamped "206"	4, 718. 903
Nutt, 3 miles south of, 165 feet south of milepost 1108, 45 feet west of track; 6 feet north of telegraph pole; iron post stamped "208"	4, 652. 961

DEMING QUADRANGLE.

[Latitude 32° 32' 30"; longitude 107° 30'-108°.]

From Rincon west along Atchison, Topeka & Santa Fe Ry. to Deming, thence northwest to Silver City (part of line).

Nutt, 6 miles south of, 45 feet west of track, 4 feet south of milepost 1111; iron post stamped "211"	4, 611. 196
Nutt, 9 miles south of, 45 feet west of track, 6 feet north of milepost 1114; iron post stamped "214"	4, 584. 208
Nutt, 12 miles south of, 45 feet west of track, 6 feet north of milepost 1117; iron post stamped "217"	4, 524. 608
Florida, in front of signboard; top of rail	4, 506. 28
Florida, 2 miles south of, 45 feet west of track, 6 feet north of milepost 1120; iron post stamped "220"	4, 483. 665
Florida, 5.2 miles south of, about 0.25 mile south of milepost 1123, at north end of cut, 80 feet east of track, 12 feet west of wagon road, near wire fence; iron post stamped "223"	4, 412. 673
Mirage siding; top of rail	4, 378. 5
Mirage siding, 3 miles south of, 45 feet west of track, 6 feet north of milepost 1129; iron post stamped "229"	4, 333. 681
Deming, 210 feet north of second switch block in station, Topeka & Santa Fe Ry. yards, then 100 feet east of main line, 200 feet southeast of milepost 1132, at fence corner; iron post stamped "232"	4, 326. 137
Deming, in front of Atchison, Topeka & Santa Fe Ry. station; top of rail	4, 336. 543
Deming, in front of Southern Pacific R. R. station; top of rail	4, 336. 80
Deming, at southwest corner of Silverton and Railroad avenues, at corner of concrete sidewalk, in concrete; iron post stamped "233"	4, 335. 918
Deming, city water works, 222 feet south of Southern Pacific R. R. track, in northwest corner of foundation stone; aluminum tablet stamped "234"	4, 346. 809
Deming, 3 miles northwest of, 45 feet north of track, 670 feet west of milepost 2; iron post stamped "236"	4, 377. 550
Deming, 6 miles northwest of, 90 feet northeast of track, 50 feet northeast of wagon road, 30 feet northeast of milepost 1139; iron post stamped "239"	4, 452. 145
Deming, 9 miles northwest of, 75 feet northeast of track, 35 feet northeast of milepost 1142 and wagon road; iron post stamped "242"	4, 530. 968
Deming, 12 miles northwest of, 90 feet northeast of track, 45 feet northeast of milepost 1145 and wagon road; iron post stamped "245"	4, 611. 131

Deming, 15 miles northwest of, five telegraph poles west of milepost 1148,	Feet.
80 feet north of bridge 4, at fence corner; iron post stamped "248".....	4,673.369
Crawford, in front of signboard; top of rail.....	4,728.95
Crawford, 0.5 mile northwest of, 75 feet north of track, 30 feet north of milepost 1151; iron post stamped "251".....	4,739.893

SEPAR QUADRANGLE.

[Latitude 32°-32° 30'; longitude 108°-108° 30'.]

From Rincon west along Atchison, Topeka & Santa Fe Ry. to Deming, thence northwest to Silver City (part of line).

Crawford, 3.5 miles northwest of, 45 feet north of milepost 1154, 5 feet north of wagon road; iron post stamped "254".....	4,807.307
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SILVER CITY QUADRANGLE.

[Latitude 32° 30'-33°; longitude 108°-108° 30'.]

From Rincon west along Atchison, Topeka & Santa Fe Ry. to Deming, thence northwest to Silver City (part of line).

Faywood, 340 feet east of station, 45 feet north of road crossing, 7 telegraph poles west of milepost 1157; iron post stamped "257".....	4,911.651
Faywood, in front of station; top of rail.....	4,915.37
Faywood, 3 miles west of, 95 feet south of milepost 1160, 55 feet south of track, 30 feet north of wagon road; iron post stamped "260".....	5,001.862
Faywood, 6 miles west of, 110 feet south of milepost 1163, 70 feet south of track, 1 mile east of White Water, 18 feet north of wagon road; iron post stamped "163".....	5,129.230
White Water, in front of station at milepost 1164; top of rail.....	5,157.6
White Water, 700 feet northwest of station, 85 feet south of junction of Silver City-Deming and White Water-Hanover roads, 21 feet south of wagon roads, in limestone rock; aluminum tablet stamped "264-B-1905".....	5,158.685
White Water, 3 miles northwest of, 500 feet east of milepost 1167, 65 feet north of bridge 23, on point of ridge; iron post stamped "267-B-1905".....	5,210.895
White Water, 6 miles northwest of, opposite milepost 1170, 75 feet south of track, 17 feet south of wagon road, near wire fence; iron post stamped "270-B-1905".....	5,320.418
White Water, 9 miles northwest of, 150 feet west of milepost 1173, 80 feet south of track; iron post stamped "273-B-1905".....	5,478.139
White Water, 12 miles west of, 210 feet east of steel railroad bridge 38, 65 feet north of track, on hillside; iron post stamped "276-B-1905".....	5,612.582
Hawkins, in front of signboard; top of rail.....	5,704.67
Silver City, 1 mile south of Atchison, Topeka & Santa Fe Ry. station, 475 feet north of steel bridge 40, 45 feet east of track, 45 feet north of milepost 1179; iron post stamped "279-B-1905".....	5,767.190
Silver City, in front of Atchison, Topeka & Santa Fe Ry. station; top of rail.....	5,867.77
Silver City, in south end of first stone step at front entrance to Silver City National Bank; aluminum tablet stamped "281-B-1905".....	5,879.985
Silver City, Grant County courthouse, in northeast corner of base stone; aluminum tablet stamped "5932-Phnx-1902".....	5,932.178

Deming, Lordsburg, Separ, and San Simon quadrangles.

GRANT AND LUNA COUNTIES.

The following are the results of a line of precise levels along the Southern Pacific Railroad from Deming west to the Arizona-New Mexico boundary line.

The leveling was done in the winter of 1906-7 by A. R. Carver and W. A. E. Hult.

DEMING QUADRANGLE.

[Latitude 32°-32° 30'; longitude 107° 30'-108°.]

From Deming west along Southern Pacific R. R. to Arizona-New Mexico line (part of line).

Deming, 3.4 miles west of, on south fence line of railroad right of way, 560 feet east of line between Rs. 9 and 10 W.; iron post stamped "4-C-1906".....	Feet.
	4, 383. 608
Parma, opposite milepost 1202; top of rail.....	4, 394. 4
Parma, 2 miles west of, 100 feet south of milepost 1200, 50 feet north of wagon road; iron post stamped "7-C-1906".....	4, 411. 588
Tunis, in front of signboard; top of rail.....	4, 424. 8
Tunis, 1.25 miles west of, 100 feet south of milepost 1197, 15 feet north of wagon road; iron post stamped "10-C-1906".....	4, 435. 155
Tunis, 4.25 miles west of, 20 feet north of wagon road; iron post stamped "13-C-1906".....	4, 423. 177

SEPAR QUADRANGLE.

[Latitude 32°-32° 30'; longitude 108°-108° 30'.]

From Deming west along Southern Pacific R. R. to Arizona-New Mexico line (part of line).

Mongola, in front of signboard; top of rail.....	4, 431. 2
Mongola, 0.9 mile west of, 100 feet south of track, 15 feet north of wagon road, 75 feet south of milepost 1191; iron post stamped "16-C-1906".....	4, 436. 946
Gage, 1 mile east of, 110 feet south of track, 15 feet north of road, 75 feet south of milepost 1188; iron post stamped "19-C-1906".....	4, 480. 401
Gage, in front of; top of rail.....	4, 490. 2
Gage, 2 miles west of, 100 feet south of track, 30 feet north of wagon road at grade crossing; iron post stamped "22-C-1906".....	4, 531. 170
Aitkin, in front of signboard; top of rail.....	4, 564. 8
Aitkin, 40 feet north of wagon road, 75 feet south of milepost 1182; iron post stamped "25-C-1906".....	4, 561. 536
Wilna, 0.8 mile east of, 75 feet south of milepost 1179, 30 feet north of wagon road; iron post stamped "28-C-1906".....	4, 558. 126
Wilna, in front of signboard; top of rail.....	4, 560. 7
Wilna, 2 miles west of, 75 feet south of milepost 1176, 30 feet north of wagon road; iron post stamped "31-C-1906".....	4, 580. 753
Continental Divide; top of rail.....	4, 587. 5
Wilna, 5 miles west of, 75 feet south of milepost 1173, 30 feet north of road; iron post stamped "34-C-1906".....	4, 551. 750
Ladim, in front of signboard; top of rail.....	4, 554. 5
Ladim, 2.5 miles west of, 100 feet south of track, 15 feet north of wagon road, 75 feet south of milepost 1170, at fence corner; iron post stamped "37-C-1906".....	4, 507. 439

	Feet.
Separ, 90 feet south of track, in southeast corner of station yard; iron post stamped "40-C-1906".....	4, 505. 866
Separ, in front of station; top of rail.....	4, 506. 5
Separ, 2.8 miles west of, 100 feet south of track, 15 feet north of wagon road, 75 feet south of milepost 1164; iron post stamped "43-C-1906".....	4, 469. 301
Hawkins, in front of signboard; top of rail.....	4, 458. 6

LORDSBURG QUADRANGLE.

[Latitude 32°-32° 30'; longitude 108° 30'-109°.]

From Deming west along Southern Pacific R. R. to Arizona-New Mexico line (part of line).¹

Hawkins, 2 miles west of, 100 feet south of track, 75 feet south of milepost 1161, 15 feet north of wagon road; iron post stamped "46-C-1906".....	4, 394. 384
Lisbon, 0.5 mile east of, 100 feet south of track, 40 feet north of wagon road, 75 feet south of milepost 1158; iron post stamped "49-C-1906".....	4, 291. 733
Lisbon, in front of signboard; top of rail.....	4, 281. 8
Lisbon, 2.5 miles west of, 100 feet south of track, 75 feet north of road, 75 feet south of milepost 1155; iron post stamped "52-C-1906".....	4, 236. 105
Ulmoris, 0.5 mile east of, 100 feet south of track, 15 feet south of road, 75 feet south of milepost 1152; iron post stamped "55-C-1906".....	4, 210. 237
Ulmoris, in front of signboard; top of rail.....	4, 208. 9
Lordsburg, 2 miles east of, 100 feet south of track, 75 feet north of wagon road, 75 feet south of milepost 1149; iron post stamped "58-C-1906".....	4, 219. 912
Lordsburg, midway between stores of Charley Lee and Roberts & Leahy Co.; iron post stamped "67-C-1906".....	4, 250. 781
Lordsburg, in front of station; top of rail.....	4, 248. 1
Lordsburg, junction with Arizona & New Mexico Ry.; top of rail.....	4, 261. 0
Lordsburg; 3 miles west of, 75 feet south of milepost 1144, 20 feet north of road; iron post stamped "63-H-1907".....	4, 267. 421
Pyra, in front of signboard; top of rail.....	4, 303. 2
Pyra, 1.5 miles west of, 75 feet south of milepost 1141, 10 feet south of road; iron post stamped "66-H-1907".....	4, 283. 214
Gary siding; top of rail.....	4, 223. 6
Gary siding, 1.5 miles west of, 75 feet south of milepost 1138, 15 feet north of road; iron post stamped "69-H-1907".....	4, 154. 961
Conrad, in front of signboard; top of rail.....	4, 150. 9
Conrad, 1.1 miles west of, 75 feet south of milepost 1134, 1,000 feet north of wagon road; iron post stamped "73-H-1907".....	4, 149. 069
Mondel, in front of signboard; top of rail.....	4, 156. 7
Mondel, 0.25 mile west of, 75 feet south of milepost 1131, 10 feet south of road; iron post stamped "76-H-1907".....	4, 156. 576
Steins Pass, at northwest corner of William Charles's store, iron post stamped "80-H-1907".....	4, 347. 485
Steins Pass, in front of station; top of rail.....	4, 352. 5

SAN SIMON QUADRANGLE.

[Latitude 32°-32° 30'; longitude 109°-109° 30'.]

From Deming west along Southern Pacific R. R. to Arizona-New Mexico line (part of line).¹

Steins Pass, 3.5 miles west of, 75 feet south of milepost 1124; iron post stamped "84- $\frac{1}{2}$ -H-1907".....	4, 116. 301
Cavot siding, on Arizona and New Mexico line; top of rail.....	4, 100. 3

¹ For continuation of this line in Arizona see Bulletin 573.

Abiquiu, Albuquerque, Cabezon, Gallina, Jemez, and Laguna quadrangles.

BERNALILLO, RIO ARIBA, AND SANDOVAL COUNTIES.

The following are the unadjusted results of precise leveling from Albuquerque to Cuba and from a point near Coyote to Espanola. These two lines are connected between Cuba and Coyote by primary circuits in the Gallina quadrangle, given in another list (pp. 46-49).

The leveling was done in 1905 by M. S. Bright.

ALBUQUERQUE QUADRANGLE.

[Latitude $35^{\circ}35'30''$; longitude $106^{\circ}30'-107^{\circ}$.]

From Albuquerque along highway northwest to Cabezon, thence northeast to Cuba
(part of line).

Albuquerque, at southwest corner of Coal and Second streets, 90 feet west of west end of viaduct over Atchison, Topeka & Santa Fe Ry. tracks, in cement; iron post stamped "1" (adjusted value U. S. Coast and Geodetic Survey 1912).....	Feet.
	4, 950. 863
Albuquerque, in west root of first cottonwood tree east of bridge over Rio Grande; nail.....	4, 942. 66
Albuquerque, 2 miles west of, at west end of lane, 40 feet south of fence corner, in north root of 18-inch cottonwood tree; nail.....	4, 943. 73
Albuquerque, 3 miles west of, 160 feet southwest of bridge over canal, in south side of 8-inch cottonwood tree on fence line; spike.....	4, 943. 42
Albuquerque, 3 miles west of, 100 feet southwest of bridge over canal, near wire fence, on south side of road; iron post stamped "4 $\frac{1}{2}$ ".....	4, 944. 182
Albuquerque, 3.5 miles west of, 100 feet east of foothills, on east side of road, in west root of 20-inch cottonwood tree; spike.....	4, 947. 25
Albuquerque, 6.5 miles west of, in west forks of crossroads; iron post stamped "8 $\frac{1}{2}$ ".....	5, 220. 181
Albuquerque, 9.2 miles west of, 100 feet south of road in small draw, on black boulder outcrop; paint point in circle.....	5, 633. 14
Albuquerque, 9.8 miles west of, in road forks; iron post stamped "12 $\frac{1}{4}$ ".....	5, 752. 714
Albuquerque, 11.8 miles northwest of, 13 feet west of road, on open flat; iron post stamped "14".....	5, 809. 567
Albuquerque, 15.25 miles northwest of, 45 feet north of old east and west road, 15 feet west of main north and south road, on north side of draw; iron post stamped "18".....	5, 855. 945
Albuquerque, 17.8 miles northwest of, 40 feet south of road, on north edge of draw, in west root of scrub cedar tree; nail.....	5, 901. 32
Albuquerque, 18.25 miles northwest of, 60 feet west of draw, 15 feet west of road; iron post stamped "21".....	5, 960. 480
Albuquerque, 21.75 miles northwest of, on north side of draw, 10 feet west of cedar tree, on east side of road; iron post stamped "24".....	6, 228. 908
Albuquerque, 23.25 miles northwest of, 10 feet west of road, 30 feet east of cedar tree; iron post stamped "26".....	6, 285. 760
Albuquerque, 25.8 miles northwest of, 60 feet west of forks of five roads; iron post stamped "29".....	6, 352. 528
Albuquerque, 26.25 miles northwest of, in flat wash, on north edge of road, in south side of 20-inch scrub cedar tree; nail.....	6, 271. 18
Cottonwood Spring, about 0.4 mile northwest of, on ridge, 100 feet north of road; iron post stamped "33".....	6, 030. 960
Cottonwood Spring, 3.8 miles west of, 400 feet northeast of sandstone bluffs, 10 feet south of road; iron post stamped "36".....	5, 673. 518

LAGUNA QUADRANGLE.

[Latitude 35°-35° 30'; longitude 107°-107° 30'.]

From Albuquerque along highway northwest to Cabezon, thence northeast to Cuba
(part of line).

Navajo Springs, 3 miles west of, 60 feet north of road forks in sandstone outcrop; aluminum tablet stamped "40"	Feet.
	5,578.273
Navajo Springs, 5.25 miles northwest of, about 800 feet northeast of old rock dam, 25 feet south of road, on southwest end of ridge; iron post stamped "42"	5,618.000
Navajo Springs, 6.8 miles northwest of, 15 feet northeast of road, on top of sandstone ridge; chiseled point in center of painted circle.	5,650.89
Navajo Springs, 8.25 miles northwest of, 15 feet north of road, on sandy flat; iron post stamped "46"	5,662.779
Navajo Springs, 11.25 miles northwest of, 12 feet west of road, on west spur of hill; iron post stamped "49"	5,709.309
Navajo Springs, 14.8 miles northwest of, 30 feet east of road, on east edge of river bottom, 100 feet west of old rock corral, on point of ridge; iron post stamped "53"	5,754.863
Casa Salazar, 0.2 mile east of, in forks of road leading to Casa Salazar and Cabezon, about 900 feet east of ford; iron post stamped "55"	5,792.507

CABEZON QUADRANGLE.

[Latitude 35° 30'-36°; longitude 107°-107° 30'.]

From Albuquerque along highway northwest to Cabezon, thence northeast to Cuba
(part of line).

Casa Salazar, 2.8 miles north of, 800 feet south of small corral, 12 feet west of road, on south side of slight slope; iron post stamped "58"	5,839.387
Casa Salazar, 5.5 miles north of, east side of road, at point where road leaves canyon and turns right angle to east, in sandstone ledge; aluminum tablet stamped "61"	5,935.460
Casa Salazar, 7.5 miles north of, 20 feet west of road forks, on west spur of ridge; iron post stamped "64"	6,203.847
Casa Salazar, 10.25 miles north of, 25 feet east of road, on west spur of ridge, east side of draw; iron post stamped "67"	6,194.408
Cabezon, 1 mile north of, top of flat ridge in road forks; iron post stamped "70"	6,154.283
Cabezon, 3.8 miles north of, 250 feet east of road forks, west toe of knoll; iron post stamped "73"	6,195.420
Cabezon, 7.25 miles north of, 150 feet east of river, 50 feet east of road, on west point of ridge; iron post stamped "76"	6,272.854
Cabezon, 11 miles north of, 15 feet west of road, on rock ridge; iron post stamped "79 $\frac{1}{2}$ "	6,360.391
Cabezon, 14 miles north of, 8 feet east of old road, in gap 500 feet east of new road; iron post stamped "82"	6,581.903

JEMEZ QUADRANGLE.

[Latitude 35° 30'-36°; longitude 106° 30'-107°.]

From Albuquerque along highway northwest to Cabezon, thence northeast to Cuba
(part of line).

Cabezon, 17.25 miles north of, 1,000 feet north of road forks, 20 feet east of road, at foot of sandstone bluff; iron post stamped "85"	6,538.464
Cabezon, 20.25 miles north of, 150 feet east of river, 6 feet west of road, in sandstone rock about 3 feet square; aluminum tablet stamped "88"	6,584.329

Cabezon, 23.5 miles north of, on west point of small hill between two flat draws, 10 feet east of road, at a point where road makes angle from east to northwest; iron post stamped "91".....	Feet.
	6, 761. 947
Cabezon, 24.8 miles north of, 15 feet east of road, on ridge, in north root of 8-inch piñon tree; nail.....	6, 802. 84
Cabezon, 26.8 miles north of, on flat ridge, in road forks; iron post stamped "94".....	6, 717. 587
Cabezon, 27.8 miles north of, 60 feet north of road, about 400 feet east of house, in west root of 20-inch double cedar tree; nail.....	6, 744. 33
Little Lake, at top of ridge, 14 feet east of road, 200 feet west of house; iron post stamped "97".....	6, 801. 140
Little Lake, 1.5 miles north of, 30 feet east of road forks, on point of ridge, in west root of 22-inch pine tree; nail.....	6, 842. 16
Little Lake, 2.8 miles north of, 60 feet below dam, on east side of draw, in top of 18-inch cottonwood stump; nail.....	6, 864. 94

GALLINA QUADRANGLE.

[Latitude 36°-36° 30'; longitude 106° 30'-107°.]

From point 9 miles northeast of Coyote southeast along highway to Espanola (part of line).

Gallezos ranch, about 4.5 miles southeast of, northeast side of crossroads, mound on north and pit on east; aluminum tablet stamped "198½".....	6, 529. 679
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ABIQUIU QUADRANGLE.

[Latitude 36°-36° 30'; longitude 106°-106° 30'.]

From point 9 miles northeast of Coyote southeast along highway to Espanola.

Canjilon Creek, 3.2 miles west of, 55 feet west of Coyote and Abiquid wagon road, on top of flat ridge, in volcanic rock; aluminum tablet stamped "214".....	6, 503. 501
Canjilon Creek, 150 feet east of, south side of Chama River, on south edge of wagon road and railroad grade, in sandstone rock; aluminum tablet stamped "218".....	6, 066. 649
Canjilon Creek, 0.5 mile east of, south side of Chama River, south edge of road, on sandstone rock; center of paint circle.....	6, 069. 09
Canjilon Creek, 3 miles east of, about 600 feet south of adobe house, 200 feet south of railroad grade, 16 feet north of wagon road, in sandstone rock; aluminum tablet stamped "221".....	6, 026. 208
San Francisco, 1.8 miles east of, north side of river, about 400 feet north of old adobe ruins, in road forks, set in sandstone rock; aluminum tablet stamped "224".....	6, 019. 633
Abiquiu, 1.5 miles east of, 125 feet west of old adobe ruins, 12 feet south of road, set in sandstone; aluminum tablet stamped "227," mound of rock around tablet.....	5, 973. 547
Miller ranch house, 500 feet southwest of, 70 feet southwest of fence corner, 30 feet south of road, in volcanic boulder; aluminum tablet stamped "230".....	5, 920. 523
Tierra Azul, 1 mile east of, 150 feet west of wash, south side of road, in volcanic rock; aluminum tablet stamped "233".....	5, 872. 562
Tierra Azul, 3.8 miles east of, south side of road, 150 feet east of forks, in scrub cedar tree; nail.....	5, 859. 09
Tierra Azul, 4.5 miles southeast of, 150 feet east of wash, 12 feet west of road, at foot of rocky hills, set in boulder outcrop; aluminum tablet stamped "237".....	5, 818. 659

Tierra Azul, 5.8 miles southeast of, on edge of river bottom, 115 feet north of railroad grade and road forks, in west side of 30-inch cottonwood tree; nail.....	Feet.
	5,766.80
J. D. Herrera ranch, 120 feet west of house, 60 feet west of road, 60 feet north of new foundation for house, at foot of hills, in sandstone rock; aluminum tablet stamped "240".....	5,750.732
Herrara ranch, 1 mile southeast of, at head of lane, 70 feet west of road forks, in west side of 16-inch cottonwood tree; nail.....	5,719.87
Gallegos ranch, 35 feet west of house, on east side of road, at fence corner, in sandstone rock; aluminum tablet stamped "243".....	5,696.390
B. Salazar ranch, 160 feet south of house, 20 feet east of road, at fence corner, in volcanic bowlder; aluminum tablet stamped "247".....	5,642.501
Espanola, in northeast corner foundation stone of Bond & Bros.' warehouse; aluminum tablet stamped "251".....	5,583.773
Espanola, in front of station; top of rail.....	5,585.5
Espanola, C. L. Pallard's storehouse and post office, 60 feet east of, 10 feet south of fence corner, in volcanic rock; aluminum tablet stamped "252".	5,583.358

PRIMARY LEVELING.

Silver City quadrangle, including Fort Bayard special quadrangle.

GRANT COUNTY.

The elevations in the following list are based on a line of precise levels, run in 1905 from San Marcial to Silver City, traversing this quadrangle. For additional elevations in this quadrangle refer to the list for precise leveling, page 15.

Most of the leveling was done in 1902 and 1903 by Chester Irvine, and in 1907 by Victor Mindeleff, jr. The leveling in the Fort Bayard Military Reservation was done in 1908 by Stuart T. Penick.

SILVER CITY QUADRANGLE.

[Latitude 32° 30'-33°; longitude 108°-108° 30'.]

From mouth of Fleming Canyon southeast to Silver City.

T. 17 S., R. 16 W., sec. 35, mouth of Fleming Canyon, 15 feet south of road; iron post stamped "4980 Phnx".....	Feet.
	4,979.791
T. 18 S., R. 15 W., sec. 6, 2.5 miles east of Culberson ranch, 60 feet south of junction of roads, on summit of ridge; bronze tablet stamped "5326" Phnx.....	5,326.151
T. 18 S., R. 15 W., sec. 11, 6 miles west of Silver City, 20 feet north of junction of roads at "Cut-of-troughs"; bronze tablet stamped "5878 Phnx 1902".....	5,878.282

Small circuit east to Silver City and return.

T. 18 S., R. 14 W., sec. 7, 4 miles west of Silver City, summit of Continental Divide, 10 feet north of road; bronze tablet stamped "6219 Phnx 1902".....	6,219.140
T. 18 S., R. 14 W., sec. 10, 0.8 mile south of Silver City, 20 feet east of road, on Iron Hill; bronze tablet stamped "6052 Phnx 1902".....	6,051.302
Silver City, T. 18 S., R. 14 W., sec. 3, northeast corner of courthouse, stone foundation; aluminum tablet stamped "5932 Phnx 1902".....	5,932.178

From road junction 6 miles west of Silver City southwest via Wind Canyon to Foraker ranch (main line continued).¹

T. 18 S., R. 15 W., sec. 8, 3 miles northeast of McMillan upper ranch, north side of and in bend of Wind Canyon, large boulder; bronze tablet stamped "5431 Phnx 1902".....	Feet.
	5,432. 027
T. 18 S., R. 16 W., sec. 24, 400 feet south of McMillan upper ranch, 40 feet south of road, on slope of ridge; bronze tablet stamped "5166 Phnx 1902".	5, 167. 215
T. 18 S., R. 16 W., sec. 35, 300 feet east of corral, Foraker ranch, 30 feet east of road, on small rocky knoll; bronze tablet stamped "5773 Phnx 1902".	5, 773. 783

From Silver City northeast and north via Pinos Altos to Sapello Creek.

T. 17 S., R. 14 W., sec. 35, 2.05 miles north of Silver City, junction of Silver City-Pinos Altos and Silver City-Santa Rita roads; iron post stamped "6080 Phnx".....	6, 079. 671
T. 17 S., R. 14 W., sec. 13, 5.48 miles north of Silver City, 20 feet north of road on summit of ridge, southwest of drains; bronze tablet stamped "6582 Phnx".....	6, 581. 317
T. 17 S., R. 13 W., sec. 6, Pinos Altos, east side of road, southwest corner of Oglesby's residence lot; iron post stamped "7041 Phnx".....	7, 040. 677
T. 16 S., R. 14 W., sec. 25, 0.25 mile northeast of Mountain K mill, forks of road at mouth of Little Cherry Creek, 40 feet west of sawmill road, north bank of Cherry Creek; bronze tablet stamped "6569 Phnx".....	6, 568. 896
T. 16 S., R. 13 W., sec. 8, 3.85 miles northeast of Mountain K mill, mouth of small creek, forks of road, north side of Cherry Creek; aluminum tablet stamped "6959 Phnx".....	6, 958. 598
T. 15 S., R. 13 W., sec. 32, 2 miles north of Scott's old mill stand, 40 feet west of road, south side of saddle, limestone ledge leaning east and west; aluminum tablet stamped "7431 Phnx".....	7, 430. 354
T. 15 S., R. 13 W., sec. 20, 2 miles north of Trout Creek mill, east side of road on ridge, stone monument, 3 by 3½ feet; bronze tablet stamped "7211 Phnx".....	7, 210. 331

From McMillan upper ranch south to Allen ranch, thence east to White Water (mean of direct and reverse lines).

T. 18 S., R. 15 W., sec. 32, 2.73 miles south of White Hill Wells, 600 feet east of "76" corral, 50 feet east of road, in boulder; aluminum tablet stamped "5342".....	5, 343. 337
T. 19 S., R. 15 W., sec. 10, 0.4 mile south of Bell ranch, in forks of road; iron post stamped "5654".....	5, 655. 720
Leopold, T. 19 S., R. 15 W., sec. 22, midway between company store and hotel, 5 feet east of road; iron post stamped "6141".....	6, 142. 833
Brown's store, sec. 34, T. 19 S., R. 15 W., 375 feet south of store, in road forks, in boulder; aluminum tablet stamped "6275".....	6, 276. 455
T. 19 S., R. 14 W., sec. 31, 4.59 miles north of Allen ranch, 400 feet east of road, on ridge, at north and south fence line, in boulder; aluminum tablet stamped "6015".....	6, 017. 386
T. 20 S., R. 15 W., sec. 12, 2.70 miles north of Allen ranch, 200 feet south of arroyo, 100 feet west of road, in limestone outcrop; aluminum tablet stamped "6054".....	6, 055. 797
T. 20 S., R. 14 W., southwest corner of sec. 16, 4.57 miles east of Allen ranch, 25 feet north of road, southwest corner of school section; iron post stamped "5762".....	5, 763. 344

¹ An adjustment of 1 foot made in this line to agree with 1907 work.

	Feet.
T. 20 S., R. 14 W., sec. 23, 7.87 miles west of White Water, 300 feet west of road crossing, 100 feet north of road, in boulder; aluminum tablet stamped "5591".....	5, 592. 745
T. 20 S., R. 13 W., sec. 20, 4.84 miles west of White Water, 10 feet north of road, in boulder; aluminum tablet stamped "5382".....	5, 383. 665
T. 20 S., R. 13 W., sec. 15, 2.91 miles west of White Water, top of ridge just east of Cherry Creek, 15 feet south of road, in boulder; aluminum tablet stamped "5257".....	5, 258. 908

From Allen ranch west 6 miles and return.

T. 20 S., R. 15 W., sec. 22, 600 feet west of Allen ranch house, 50 feet north of road; iron post stamped "6028".....	6, 029. 873
T. 20 S., R. 15 W., sec. 20, 3.19 miles west of Allen ranch, 75 feet north of road forks, in boulder; aluminum tablet.....	6, 274. 411
T. 20 S., R. 16 W., sec. 36, 5.95 miles west of Allen ranch, in road forks, 75 feet west of east road, 150 feet east of west road, 500 feet south of forks, in boulder; aluminum tablet	6, 181. 280

From Silver City along highway east to Fort Bayard, thence south to Central, thence east to Hanover Junction.

T. 17 S., R. 13 W., sec. 32, 5.07 miles northeast of Silver City, 50 feet west of junction of Silver City-Fort Bayard road and Silver City-Central roads, in boulder; iron post stamped "6110".....	6, 111. 172
Fort Bayard astronomical station, sec. 26, T. 17 S., R. 13 W., in monument; aluminum tablet stamped "6165".....	6, 165. 557
T. 17 S., R. 12 W., sec. 31, 1.34 miles east of Central, 60 feet north of road, 150 feet east of arroyo, on small knoll, in boulder; aluminum tablet stamped "6068".....	6, 068. 815

From White Water north along Atchison, Topeka & Santa Fe Ry. to Fierro, thence north 1 miles and return to Hanover.

T. 19 S., R. 13 W., sec. 25, 1.37 miles south of Apache Tejo, 62.5 feet south of milepost 1167, 215 feet east of track, in boulder; aluminum tablet stamped "5302".....	5, 303. 156
T. 19 S., R. 12 W., sec. 7, 1.82 miles north of Apache Tejo (Old Fort McLane) 400 feet north of milepost 1170, 10 feet west of track, in boulder; aluminum tablet stamped "5510".....	5, 510. 873
Hurley, sec. 25, T. 18 S., R. 13 W., 100 feet south of derail target, 50 feet east of track, in boulder; aluminum tablet stamped "5748".....	5, 748. 548
T. 18 S., R. 13 W., sec. 13, 1.10 miles south of Bayard, 150 feet west of railroad trestle 5, 75 feet south of road to Central, in boulder; aluminum tablet stamped "5748".....	5, 749. 099
Bayard, opposite waiting-room entrance; top of rail.....	5, 825. 0
Hanover Junction, sec. 32, T. 17 S., R. 12 W., 450 feet east of junction of rails midway between rails, 15 feet north of wagon road, in boulder; aluminum tablet stamped "5959".....	5, 959. 875
Hanover, 125 feet north of station, sec. 21, T. 17 S., R. 12 W., 30 feet east of track, 5 feet west of wagon road, 100 feet south of arroyo at road crossing, in boulder; aluminum tablet stamped "6367".....	6, 367. 666
Hanover, in front of station; top of rail.....	6, 362. 1
Fierro station, opposite office door; top of rail.....	6, 673. 1
Fierro, 1.16 miles north of, sec. 3, T. 17 S., R. 12 W., south slope of ridge between two branches of same road, 100 feet east of west road, 50 feet west of east road, 300 feet north of forks, in boulder; aluminum tablet stamped "6931".....	6, 932. 338

From Hanover Junction east along Atchison, Topeka & Santa Fe Ry. to Santa Rita,
thence west along highway to Hanover.

	Feet.
Cobre, in front of station sign; top of rail.....	6,084.9
T. 17 S., R. 12 W., in cornerstone of secs. 26, 27, 34, and 35, 450 feet northeast of Santa Rita Church, 5 feet north of road; aluminum tablet..	6,332.089
Santa Rita, opposite entrance of station; rail joint.....	6,337.7

FORT BAYARD SPECIAL QUADRANGLE.

[Latitude $32^{\circ} 47' - 32^{\circ} 52'$; longitude $108^{\circ} 08' - 108^{\circ} 11'$.]

Bench marks near Fort Bayard.

Fort Bayard, on rise of ground 150 feet west of south end of driveway running back of officer's line, in stone monument; aluminum tablet (Astronomical station).....	6,165.557
Fort Bayard, 0.75 mile south of, 200 feet west of Fort Bayard-Central road, 80 feet north of small creek, 12 feet east of angle in west fence; aluminum tablet stamped "6033".....	6,033.917
Central triangulation signal, large stone at base of cairn; chisel mark.....	6,122.16
Fort Bayard, 1 mile southwest of, 300 feet west of large drain, 40 feet west of Fort Bayard-Silver City road where road enters valley, on stone; chisel mark	6,056.56
Fort Bayard, 1 mile southwest of, 200 feet east of Twin Sisters Creek, 40 feet west of Fort Bayard-Silver City road, on side of ridge, in solid rock; aluminum tablet stamped "6060".....	6,060.645
Twin Sisters Canyon, 200 feet west of, 10 feet north of old Pinos Altos-Fort Bayard road, in lane; aluminum tablet stamped "6290".....	6,290.879
Fort Bayard, 0.75 mile north of, 200 feet north of road forks, 200 feet west of Cameron Creek, 10 feet west of road up west bank of creek, in large stone; aluminum tablet stamped "6162.6".....	6,163.450
Fort Bayard, 2.5 miles north of, where lane turns west at road forks, 75 feet north of road forks, 30 feet west of gate, in base of large cedar stump; spike.....	6,416.80
Comanche Spring, in abutment of reservoir; aluminum tablet stamped "6807.6".....	6,808.387
Fort Bayard, 3 miles north of, 400 feet north of where road turns off to Cornell's ranch, 50 feet west of Cameron Creek, 50 feet south of signboard, 2 feet west of road to Cornell ranch; aluminum tablet stamped "6389" ..	6,389.562
Forest nursery, 75 feet southwest of house, in large stone; aluminum tablet stamped "6473.5"	6,474.158

Alum Mountain, Duncan, Mogollon, Morenci, and Steeplerock quadrangles.

GRANT AND SOCORRO COUNTIES.

The elevations in the following list were originally based on an aluminum tablet marked "1090" in the north front of the Maricopa County courthouse at Phoenix, Ariz., and the permanent bench marks are therefore stamped "Phnx". Later leveling by the United States Geological Survey and 1912 adjustment elevations by the United States Coast and Geodetic Survey have enabled a connection to be made with mean sea datum, and the elevations listed herein have been reduced to that datum.

The leveling was done in 1902 and 1903 by Chester Irvine.

MOGOLLON QUADRANGLE.

[Latitude $33^{\circ}33'30''$; longitude $108^{\circ}30'109''$.]

From point 11.5 miles north of Steeplerock along highway via Pina Cienaga northwest
6.6 miles, then southwest to Big Lue ranch.

Steeplerock, 11.5 miles north of, 50 feet southeast of ranch house, on stone; chiseled square.....	Feet. 6,309.89
Pina Cienaga, 1.3 miles south of, summit of divide, west side of road; in root of oak tree; nail.....	6,518.25
Pina Cienaga, south end of, 100 feet north of northwest corner of Pitt ranch fence, 400 feet northwest of house and of forks of road; iron post stamped "6254 Phnx".....	6,253.973
Pina Cienaga, 1 mile northwest of, at road crossing; summit of divide.....	6,307
Pina Cienaga, 1.3 miles northwest of, 50 feet northeast of forks of road at old ranch, in juniper stump; wire nail.....	6,267.04
Pina Cienaga, 3.6 miles northwest of, 10 feet south of road, at bend in mill creek; iron post stamped "5936 Phnx".....	5,935.955
Pina Cienaga, 5.1 miles northwest of, west side of road, 200 feet southeast of frame house, on boulder; chisel mark.....	5,805.04
Pina Cienaga, 6.6 miles northwest of, 40 feet north of road, on divide; iron post stamped "6199 Phnx".....	6,198.581
Big Lue ranch, 9.8 miles northeast of, west side of road, foot of long hill, on boulder; chiseled square.....	5,723.55
Big Lue ranch, 8.7 miles northeast of, 10 feet west of road, at junction of creeks; iron post stamped "5720 Phnx".....	5,719.908
Big Lue ranch, 6.9 miles northeast of, west side of road, on divide, in stump; nail.....	6,137.37
Big Lue ranch, 5.2 miles northeast of, 100 feet north of old sawmill, 4 feet east of road, at junction of creeks; aluminum tablet stamped "5806 Phnx".....	5,805.753
Big Lue ranch, 1.9 miles northeast of, west side of road, foot of hill, on boulder; chiseled square.....	5,793.87
Welch ranch, 11.1 miles east of, 100 feet south of old cabin, 100 feet north of road, in sycamore tree; nail.....	4,250.81
Welch ranch, 12.6 miles east of, 150 feet north of river, 100 feet north of road, one-fourth mile west of deserted ranch, under small cliff; iron post stamped "4289 Phnx".....	4,289.001
Mule Creek, 1 mile west of mouth of, 30 feet west of river, 20 feet west of road, in root of leaning sycamore tree; nail.....	4,319.16
Mule Creek, 0.3 mile east of, 200 feet south of San Francisco River, 30 feet south of road; aluminum tablet stamped "4347 Phnx".....	4,347.375
Mule Creek, 2.3 miles east of, 100 feet north of river, 10 feet south of road, boulder; chiseled square.....	4,389.06
Mule Creek, 3.3 miles east of, 100 feet north of river, 30 feet north of road; aluminum tablet stamped "4411 Phnx".....	4,410.830
Mule Creek, 5 miles east of, 100 feet south of river, on south side of road, boulder; chiseled square.....	4,449.12
Big Dry Creek, 1.5 miles west of, 100 feet north of road, 150 feet north of river, under cliff, 40 feet high; iron post stamped "4483 Phnx".....	4,482.841
Big Dry Creek, mouth of, 40 feet east of road, in root of sycamore tree; nail.....	4,515.41
Pleasanton, 2.3 miles south of, 200 feet east of river, 30 feet east of road, 60 feet west of cliff, detached boulder; aluminum tablet stamped "4545 Phnx".....	4,545.180
Pleasanton, 0.5 mile south of, 30 feet east of road, in root of cottonwood tree; nail.....	4,568.67
Pleasanton, 150 feet east of Goddard house, 10 feet west of road; iron post stamped "4635 Phnx".....	4,634.863

From Pleasanton north to Graham and return.

Graham, 0.3 mile south of, 200 feet southwest of Johnson house, 30 feet east of road; iron post stamped "5102 Phnx".....	Feet. 5, 101. 973
Graham, 4 miles south of, at intersection of Alma and Graham roads; aluminum tablet stamped "4746 Phnx".....	4, 745. 968

From Pleasanton south via Meader and Wilson ranches to Pina Cienaga.

Pleasanton, 3.2 miles south of, on divide between Pleasanton and Big Dry creeks, 30 feet north of road; iron post stamped "5052 Phnx".....	5, 051. 856
Wilson ranch, 1 mile northwest of, 60 feet north of old road, on flat, in root of lone tree; spike.....	4, 979. 50
Meader ranch, 30 feet northeast of house; aluminum tablet stamped "4884 Phnx".....	4, 883. 480
Meader ranch, 3.2 miles south of, 40 feet north of road, in saddle; iron post stamped "5235 Phnx".....	5, 235. 045
Meader ranch, 6.3 miles south of, on divide, 30 feet north of road; iron post stamped "5289 Phnx".....	5, 288. 773
L. C. tank, 0.5 mile southwest of, 0.5 mile southwest of junction of Pina Cienaga-Graham road, 300 feet south of old rock house on hill; bronze tablet stamped "5148 Phnx".....	5, 147. 676
L. C. tank, 2 miles southwest of, 140 feet east of road, in root of oak tree; nail.....	5, 318. 01
L. C. tank, 3 miles southwest of, 10 feet east of forks of road, at monument on flat, on stone; chiseled square.....	5, 432. 46
High Lonesome ranch, southeast corner of house; aluminum tablet stamped "5513 Phnx".....	5, 513. 390
High Lonesome ranch, 1 mile south of, 300 feet south of gate, boulder; chisel mark.....	5, 546. 15
High Lonesome ranch, 3.6 miles southwest of, east bank of Cienaga Creek, 50 feet west of road; aluminum tablet stamped "5337 Phnx".....	5, 336. 945
Wilson ranch in Mill Creek, 100 feet north of house, in stump; nail.....	5, 420. 23
Wilson ranch, 1.9 miles south of, 50 feet south of road, on divide; bronze tablet stamped "5747 Phnx".....	5, 747. 255
Wilson ranch, 3.5 miles southeast of, 40 feet south of fence corner, 3 feet west of road, on boulder; chiseled square.....	5, 910. 24
Pina Cienaga, 2.5 miles north of, 20 feet east of road, on stone; chisel mark.	6, 353. 04
Pina Cienaga, 2 miles north of junction of Graham-Silver City roads; bronze tablet stamped "6365 Phnx".....	6, 365. 390

From Alexander ranch east along highway via Raines ranch to Howard Cienaga, thence northwest along stage road via White House to L. C. tank.

Oldham ranch, 300 feet south of, 30 feet north of gate in yard; chisel mark.	5, 728. 45
Oldham ranch, 1.6 miles east of, at foot of big hill, and at forks of road, on boulder; chisel mark.....	5, 608. 40
Oldham ranch, 2.6 miles east of, 10 feet north of road on ridge, beside monument of stone 3 feet high; aluminum tablet stamped "6107 Phnx".....	6, 107. 040
Oldham ranch, 4.9 miles northeast of, 20 feet east of road on summit of divide; aluminum tablet stamped "6411 Phnx".....	6, 411. 187
Raines ranch, 0.3 mile east of, on small hill in basin, 300 feet north of road, black stone monument; aluminum tablet stamped "5914 Phnx".....	5, 914. 254
Raines ranch, 2.5 miles east of, hillside 50 feet east of road, on boulder; chisel mark.....	6, 111. 93
Raines ranch, 5 miles east of, 10 feet east of road, on summit of ridge; iron post stamped "6310 Phnx".....	6, 310. 397

Raines ranch, 9 miles east of, 30 feet west of road at point where it begins steep descent, boulder; chiseled square.....	Feet.
	6, 185. 63
White House, about 3 miles south of, 20 feet south of road, at rocky point, 0.25 mile east of foot of big hill; bronze tablet stamped "5000 Phnx".....	5, 000. 413
Cliff, 3 miles northwest of, Howard Cienaga, junction of Graham and Blue Creek roads; iron post stamped "4596 Phnx".....	4, 596. 130
Cliff, 6 miles northwest of, 30 feet north of road on rocky point alongside stone monument, on embedded boulder; chiseled square.....	4, 755. 13
White House, 1 mile east of, 30 feet south of fence corner, on north side of road, in root of juniper tree; nail.....	4, 663. 00
White House, 100 feet northwest of, at fence corner, on top of embedded boulder; bronze tablet stamped "4716 Phnx".....	4, 715. 461
White House, 4 miles west of, 40 feet west of road, boulder beside stone monument; chiseled square.....	4, 882. 95
White House, 6.5 miles west of, 12 feet south of road, at rocky point, in top of boulder; aluminum tablet stamped "4981 Phnx".....	4, 981. 076

At Howard ranch.

Howard ranch, 2 miles north of, end of concrete ridge, 40 feet east of road, east side of Gila River; bronze tablet stamped "4700 Phnx 1903".....	4, 699. 719
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From Howard Cienaga southeast to Cliff, thence north and west up Gila River and Mogollon Creek via Box N and Rice ranches and L. C. pasture to Graham road, 3 miles northwest of L. C. tank.

Bell ranch, 100 yards south of, on edge of mesa, at forks of road; aluminum tablet stamped "4626 Phux".....	4, 626. 119
Doyle farm, 60 feet west of house, in root of tree; nail.....	4, 577. 98
Winkler ranch, 1,000 feet west of, 40 feet northwest of fence corner; 10 feet north of road; aluminum tablet stamped "4611 Phnx".....	4, 611. 233
Mogollon Creek, mouth of, 5 feet east of Russell cabin, on north bank; aluminum tablet stamped "4650 Phnx".....	4, 650. 255
Russell ranch, 3 miles west of, 20 feet north of road in Mogollon Creek, alongside stone monument; aluminum tablet stamped "4806 Phnx".....	4, 806. 341
Shelly ranch, 200 feet north of house, in stump; nail.....	5, 001. 08
Box N ranch, 900 feet south of, south bank of Mogollon Creek, 40 feet above creek bed, 30 feet east of road; aluminum tablet stamped "5099 Phnx".....	5, 099. 425
Box N ranch, 3 miles west of, 30 feet north of road, beside stone monument; aluminum tablet stamped "5722 Phnx".....	5, 722. 240
Rice ranch, 1.8 miles east of, at northwest corner of Bell's pasture fence, 5 feet north of junction of roads; aluminum tablet stamped "6041 Phnx".....	6, 041. 182
Rice ranch, 1.4 miles west of, at junction of roads, 300 feet east of gate to Lyon & Campbell's pasture; aluminum tablet marked "5847 Phnx".....	5, 847. 331
Rice ranch, 4.4 miles west of, south side of road, at west gate to Lyon & Campbell's pasture; aluminum tablet stamped "5697 Phnx".....	5, 697. 087

MORENCI QUADRANGLE.

[Latitude 33°-33° 30'; longitude 109°-109° 30'.]

From Big Lue ranch along highways up San Francisco River to Pleasanton.

Big Lue ranch, 0.5 mile northeast of, on divide, at intersection of roads; iron post stamped "6101 Phnx".....	6, 100. 441
Welch ranch, 8.3 miles north of, 80 feet south of river, 20 feet east of road, in root of cottonwood tree; wire nail.....	4, 183. 23
Welch ranch, 9.1 miles northeast of, 200 feet south of river, 40 feet south of road, 3 feet south of large boulder under cliff; iron post stamped "4213 Phnx".....	4, 212. 878

STEEPLEROCK QUADRANGLE.

[Latitude $32^{\circ} 30' - 33^{\circ}$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From point 3.3 miles southwest of Steeplerock northeast along highway via Steeplerock and Alexander ranch.

Steeplerock, 3.3 miles southwest of, 550 feet southwest of Imperial mine, 12 feet south of ruins of rock house, 30 feet east of road, 10 feet above creek bed; aluminum tablet stamped "4714 Phnx"	Feet.
	4, 713. 670
Steeplerock, 2 miles south of, third post south of gate to Powell cabin, at junction of drains; spike driven close to ground.....	4, 838. 5
Steeplerock, northwest corner of store building; aluminum tablet stamped "5133 Phnx".....	5, 133. 114
Steeplerock, 0.3 mile east of, 20 feet east of stamp mill, in southwest corner of crown plate of air shaft; spike.....	5, 239. 08
Steeplerock, 2.2 miles north of, foot of round-topped mountain, west bank of creek, west of and 3 feet above wagon road; aluminum tablet stamped "5439 Phnx".....	5, 439. 111
Steeplerock, 3.9 miles north of, summit of Cherry Mountains, west side of road, on rock; chiseled square.....	5, 876. 91
Steeplerock, 4.3 miles north of, junction of drains, boulder at angle of road; chiseled square.....	5, 683. 29
Steeplerock, 5.1 miles north of, southeast of ruins of old house, 20 feet south of road; iron post stamped "5787 Phnx".....	5, 786. 851
Steeplerock, 6.1 miles north of, 1.5 miles south of Alexander ranch, summit of Bluewater Mountains, at road crossing, stone 4 feet west of road; chiseled square.....	6, 185. 18
Steeplerock, 7.4 miles north of, 900 feet south of Alexander ranch house, at intersection of wagon roads; iron post stamped "5868 Phnx".....	5, 868. 274
Steeplerock, 11 miles north of, 0.8 mile east of Deer Lick Cienaga, 500 feet west of forks of road, on summit of ridge; iron post stamped "6339 Phnx".....	6, 339. 188

From Mangas Valley west along highway to Duncan.

Foraker ranch, 3 miles south of, 30 feet west of road, on divide of Burro Mountains; bronze tablet stamped "6350 Phnx 1902"	6, 350. 866
Knox ranch, 30 feet south of fence corner, on boulder; chiseled square....	5, 947. 184
Knox ranch, 2 miles south of, 100 feet east of road at rocky point; bronze tablet marked "5608 Phnx 1902"	5, 608. 684
Brock ranch, 2.8 miles west of, 40 feet east of junction of Gila River and Duncan roads; aluminum tablet stamped "5376 Phnx 1902".....	5, 376. 612
Brock ranch, 5.5 miles west of, 5 feet north of road crossing; bronze tablet stamped "5006 Phnx 1902"	5, 006. 604
Brock ranch, 8.8 miles west of, 10 feet west of road, at trail crossing; aluminum tablet stamped "4698 Phnx 1902"	4, 698. 750
Brock ranch, 12.3 miles west of, at road crossing; iron post stamped "4424 Phnx 1902"	4, 424. 595
Brock ranch, 15.2 miles west of, junction of old and new Silver City-Duncan roads; iron post stamped "4382 Phnx"	4, 382. 366
24 ranch, 7 miles east of, on south bank of drain, 20 feet south of road; iron post stamped "4149 Phnx"	4, 149. 084
24 ranch, 4.2 miles east of, 0.3 mile south of two black buttes, on summit of divide, 10 feet south of road; iron post stamped "4130 Phnx"	4, 130. 100
24 ranch, 2.5 miles east of, at junction of Lordsburg and Silver City roads, in drain; iron post stamped "4011 Phnx"	4, 011. 734

Duncan, 12 miles east of, 40 feet southwest of Catholic Church, 15 feet east of road; iron post stamped "3800 Phnx 1902"	Feet.
Wilson ranch, 200 yards south of, end of gravel ridge, 30 feet east of road; iron post stamped "3765 Phnx"	3,800. 574
	3,765. 265

From Howard Cienaga southeast to Cliff, thence northeast up Gila River.

Cliff, 1.5 miles north of, 30 feet east of road; at Warm Springs, in root of willow tree; nail	4, 540. 93
Cliff, 0.3 mile north of post office, 30 feet west of forks of road, beside stone monument, on top of embedded boulder; bronze tablet stamped "4522 Phnx"	4, 521. 437
Bell ranch, 100 yards south of, on edge of mesa, at forks of road; aluminum tablet stamped "4626 Phnx"	4, 626. 119

From Cliff southeast along stage road toward Silver City.

Gila Hotel, 400 feet south of, at gate, west side of road; iron post stamped "4470 Phnx"	4, 469. 843
Gila Hotel, 1 mile south of, at forks of road, boulder; chiseled square	4, 458. 80
Gila Hotel, 2.5 miles east of, forks of Red Barn and Cliff roads, 15 feet north of road, on side of ridge; iron post stamped "4554 Phnx"	4, 453. 889
Jones ranch, 600 feet north of house, boulder; chisel mark	4, 692. 83
Metcalf ranch, 3 miles north of, on summit of divide, 15 feet west of road; iron post stamped "4901 Phnx"	4, 900. 838
Menton house, 1,000 feet northwest of, 100 feet south of road; iron post stamped "4771 Phnx"	4, 762. 893

ALUM MOUNTAIN QUADRANGLE.

[Latitude 33°-33° 30'; longitude 108°-108° 30'.]

From Sapello northwest to Gila Forks, thence down Gila River to Mogollon Creek.

Sapello Creek, north bank of, 40 feet south of lower G. O. S. ranch; iron post stamped "5834 Phnx"	5, 833. 734
Brannen ranch, southeast corner of house, south side of Sapello Creek; iron post stamped "5993 Phnx"	5, 992. 684
Hill ranch, on Sapello Creek, 300 yards north of, 10 feet east of road to Hot Springs; iron post stamped "6126 Phnx 1903"	6, 125. 561
Hill ranch, 3 miles north of, 10 feet east of road, near saddle on ridge, beside stone monument; aluminum tablet stamped "7487 Phnx 1903"	7, 486. 909
Hill ranch, 6 miles northwest of, 10 feet south of road, in saddle of ridge; bronze tablet stamped "7382 Phnx 1903"	7, 381. 493
Hill ranch, 10 miles north of, forks of wagon road, north side of saddle; aluminum tablet stamped "7390 Phnx 1903"	7, 389. 815
Gila Hot Springs, 2.5 miles south of, 15 feet east of road on round knob, 60 feet east of section corner marked 111 on east 1111 on west; aluminum tablet stamped "6484 Phnx 1903"	6, 483. 269
Gila River, forks of, 50 feet west of road on hillside, south bank of east fork; aluminum tablet stamped "5567 Phnx 1903"	5, 566. 165
Gila Forks, 3.25 miles south of, yellow sandstone ledge on west bank of Gila River opposite deserted ranch house; aluminum tablet stamped "5466 Phnx 1903"	5, 465. 228
Gila Forks, 6.58 miles south of, projection of ledge 30 feet south of road, west side of Gila River; aluminum tablet stamped "5386 Phnx 1903"	5, 385. 378
Gila Forks, 9.39 miles south of, projection of ledge 40 feet north of corral, 50 feet south of road, on east bank of Gila River; bronze tablet stamped "5312 Phnx 1903"	5, 311. 546

Gila Forks, 12.62 miles south of, 250 feet east of log cabin on flat, east side of Gila River; aluminum tablet stamped "5225 Phnx 1903".....	Feet.	5, 224. 584
Sapello Creek, 1 mile west of, detached boulder at foot of hill, 30 feet west of road, west side of Gila River; aluminum tablet stamped "5149 Phnx 1903".....	5, 148. 781	
Sapello Creek, 4 miles west of, 10 feet south of group of detached boulders, 40 feet east of road on east side of Gila River; bronze tablet stamped "5086 Phnx 1903".....	5, 085. 409	
Sapello Creek, 8 miles south of, 40 feet east of road, east side of Gila River, large white sandstone boulder; bronze tablet stamped "4991 Phnx 1903".....	4, 990. 347	
Sapello Creek, 11 miles south of, large sandstone boulder at foot of cliff, north side of road, west side of Gila River; bronze tablet stamped "4914 Phnx 1903".....	4, 913. 545	
Sapello Creek, 14 miles south of, bench 4 feet above ground, on stone bluff, 30 feet north of road, west side of Gila River; bronze tablet stamped "4835 Phnx 1903".....	4, 834. 346	
Turkey Creek, 0.25 mile south of, 40 feet west of road, near rock bluff, west side of Gila River; bronze tablet stamped "4770 Phnx 1903".....	4, 769. 675	

Chiricahua and San Simon quadrangles.

GRANT COUNTY.

The elevations in the following list are based upon the precise-level line along the Southern Pacific Railroad. For additional elevations on these quadrangles refer to level lists for Arizona, Bulletin 573.

The leveling was done in 1907 by T. A. Green.

SAN SIMON QUADRANGLE.

[Latitude 32°-32° 30'; longitude 109°-109° 30'.]

From Cienaga north to Paramores ranch.

Cienaga, 250 feet west of, in southeast corner of pasture lot of J. A. Cheno-weth's ranch, just northwest of crossroads, in large rock; aluminum tablet stamped "3911 1907".....	Feet.	3, 922. 732
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From Cienaga south 5 miles.

Rodeo, 13 miles north of, 0.54 mile north of Ed Hill ranch, 10 feet west of road; iron post stamped "3935 1907".....	3, 946. 700
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CHIRICAHUA QUADRANGLE.

[Latitude 31° 30'-32°; longitude 109°-109° 30'.]

From Rodeo north 9.7 miles to bench mark 5 miles south of Cienaga.

Rodeo, 200 feet southeast of station, 230 feet south of track, west side of store and post office kept by A. D. Wallace; iron post stamped "4115 1907".....	4, 127. 201
Rodeo, 3.77 miles north of, in southeast corner of fence around windmill and water tank; iron post stamped "4052 1907".....	4, 064. 402
Rodeo, 6.13 miles north of, 40 feet west of road, midway between two trees; iron post stamped "4042 1907".....	4, 053. 456
Cienaga, 5 miles south of, east side of road, 50 feet west of house occupied by G. W. Shipman, 8 feet west of fence; iron post stamped "4004 1907".....	4, 015. 964

Alamogordo, Avis, Las Cruces, and Orogrande quadrangles.

DONA ANA AND OTERO COUNTIES.

The elevations in the following list were determined by primary leveling extended from El Paso, Tex., based on an elevation determined by precise leveling. The elevations on line from a point near Newman ranch to Anthony, in the Orogrande and Las Cruces quadrangles, part of a closed circuit, are adjusted. The line along the El Paso & Southwestern Railroad to Alamogordo and along highway 10 miles east of Alamogordo in the Alamogordo and Orogrande quadrangles is a single uncheckecl line. A circuit was extended from the latter point to Pinon, but on account of an excessive closure error it has not been adjusted. Additional elevations in the Las Cruces quadrangle are given in a list for precise leveling.

The leveling in the Orogrande and Las Cruces quadrangles was done in 1907 by Fred McLaughlin, and that in the Alamogordo, Avis, and Orogrande quadrangles in 1909 by K. W. Trimble.

OROGRANDE QUADRANGLE.

[Latitude 32°-32° 30'; longitude 106°-106° 30'.]

From State line northeast along El Paso & Southwestern R. R. to point 3.8 miles northeast of Turquoise (part of a single line from El Paso, Tex., via Alamogordo to point 10 miles southeast of Alamogordo).

	Feet.
Texas-New Mexico boundary line; top of rail opposite line post.....	4,000. 9
Newman, in south side of concrete base of water tank; chisel mark marked "3997.95 B. M.".....	3,999. 13
Newman, 2 miles northeast of, at milepost 21, 50 feet west of railroad; iron post stamped "3981".....	3,981. 880
Hueco, 0.8 mile southwest of, at milepost 24, 50 feet west of railroad; iron post stamped "4053".....	4,053. 736
Hueco, opposite stock pens; top of rail.....	4,073. 7
Hueco, 2.2 miles northeast of, at milepost 27, 50 feet west of railroad; iron post stamped "4101".....	4,102. 151
Alvarado, opposite signboard; top of rail.....	4,101. 7
Alvarado, 0.5 mile northeast of, at milepost 30, 50 feet west of railroad; iron post stamped "4099".....	4,099. 952
Desert, 2.5 miles southwest of, at milepost 33, 50 feet west of railroad; iron post stamped "4078".....	4,078. 950
Desert, opposite signboard; top of rail.....	4,086. 1
Desert, 0.7 mile northeast of, at milepost 36, 50 feet west of railroad; iron post stamped "4077".....	4,077. 997
Desert, 3.7 miles northeast of, at milepost 39, 50 feet west of railroad; iron post stamped "4085".....	4,085. 833
Elwood, 0.5 mile southwest of, at milepost 42, 50 feet west of railroad; iron post stamped "4089".....	4,089. 420
Orogrande, 3.2 miles southwest of, at milepost 45, 50 feet west of railroad; iron post stamped "4104".....	4,104. 729
Orogrande, in front of station; top of rail.....	4,179. 7
Orogrande, 200 feet west of station; iron post stamped "4180".....	4,180. 230
Orogrande, 2.8 miles northeast of, at milepost 51, 50 feet west of railroad; iron post stamped "4173".....	4,173. 943

Orogrande, 5.8 miles northeast of, at milepost 54, 50 feet west of railroad; iron post stamped "4119".....	Feet.
	4,119. 936
Turquoise, 2.8 miles northeast of, at milepost 57, 50 feet west of railroad; iron post stamped "4058".....	
	4,058. 481

From Newman ranch northwest along highway to Anthony Pass.

Newman ranch, 1.8 miles west of, 15 feet west of road forks; iron post stamped "4092".....	4, 104. 437
Newman ranch, 4.8 miles west of, 10 feet south of road; iron post stamped "4301".....	4, 314. 353

LAS CRUCES QUADRANGLE.

[Latitude 32° 32' 30"; longitude 106° 30'-107°.]

From Anthony Gap west along highways to La Tuna (Anthony post office).

Anthony, 3.7 miles east of, 10 feet north of road, 30 feet north of creek; iron post stamped "4155".....	4, 167. 783
La Tuna (Anthony post office), 33 feet west of track, 4 feet north of Texas-New Mexico line; iron post stamped "3780".....	3, 792. 926

ALAMOGORDO QUADRANGLE.

[Latitude 32° 30'-33°; longitude 105° 30'-106°.]

From point 4 miles northeast of Escondido northeast along El Paso & Southwestern R. R. to Alamogordo (part of a single line from El Paso, Tex., via Alamogordo to point 10 miles southeast of Alamogordo).¹

Dog Canyon, 3.2 miles southwest of, at milepost 72, 50 feet west of railroad; iron post stamped "4004".....	4, 004. 371
Dog Canyon, in front of station; top of rail.....	4, 035. 8
Dog Canyon, 150 feet west of station; iron post stamped "4034".....	4, 033. 788
Dog Canyon, 1.7 miles northeast of, at milepost 78, 50 feet west of railroad; iron post stamped "4072".....	4, 072. 329
Omlee, opposite signboard; top of rail.....	4, 184. 9
Omlee, 50 feet west of signboard; iron post stamped "4183".....	4, 183. 026
Alamogordo, 2 miles southwest of, at milepost 84, 50 feet west of railroad; iron post stamped "4295".....	4, 295. 474
Alamogordo, in front of station; top of rail.....	4, 333. 9
Alamogordo, courthouse, south end of lower stone step of west approach to south entrance; aluminum tablet stamped "4342".....	4, 341. 810

Near Alamogordo.

Alamogordo, 1 mile north of, on west end of top stone step of south approach to east entrance of basement of Institute for the Blind; chisel mark.....	4, 363. 61
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From Alamogordo southeast via Woods and Atkinson ranches to Alamo lumber camp on Penasco Creek (single unchecked line).

Alamogordo, 3.5 miles southeast of, on Alamo Canyon road, 50 feet south east of road fork, on limestone rock; chisel mark marked "4744.78".....	4, 744. 78
Alamogordo, 3.7 miles southeast of, at mouth of Alamo Canyon, in north end of east concrete abutment of Alamo Creek conduit; aluminum tablet stamped "4805".....	4, 805. 522
Alamogordo, 4.7 miles east of, 20 feet south of Alamo Canyon trail, on limestone ledge; chisel mark marked "5008 B. M."	5, 008. 02

¹ For additional elevations in this quadrangle see pp. 35-36.

Alamogordo, 5.6 miles east of, 50 feet east of junction of Alamo and Cabel-	Feet.
ero canyons, on limestone ledge; chisel mark marked "5200.73 B. M." ..	5,200.73
Alamogordo, 7 miles east of, 10 feet south of Alamo Creek, in Alamo Canyon, in limestone ledge; aluminum tablet stamped "5592"	5,591.735
Alamogordo, 9 miles east of, 3 feet east of Alamo trail, at junction of Gordon Gulch and Alamo Canyon, in limestone ledge; chisel mark marked "6210.36 B. M."	6,210.36
Alamogordo, 10.2 miles east of, 100 feet north of Woods ranch house, in sandstone rock; aluminum tablet stamped "7050"	7,049.680
Alamogordo, 11.1 miles east of, south side of Woods-Atkinson trail, in root of pine tree; nail marked "7397.8 B. M."	7,397.82
Atkinson ranch, 0.5 mile west of, on Woods-Atkinson trail, at summit of Sacramento Mountain, in root of pine tree; nail marked "8995.56"	8,995.56
Alamo Lumber Co. camp on Penasco Creek, 75 feet southeast of stables, in limestone ledge; aluminum tablet stamped "8786"	8,787.099

From Alamo Lumber Co. camp southeast via Rice Canyon, Sacramento River road,
and Carissa ranger station to Stephens Lake.

NOTE.—Part of this circuit has an error of 1.9feet, which has not been
adjusted.

Rice Canyon, 1 mile west of mouth of, on Rice Canyon road, 15 feet north of road fork, on sandstone rock; chisel mark marked "8845.65 B. M." ..	8,846.65
Alamo Lumber Co. camp, 4 miles southeast of, at summit of mountain, 20 feet south of fork of Sacramento River road, in limestone rock; alum- num tablet stamped "9498"	9,497.523
Verdon ranch house, 3.2 miles northwest of, 10 feet north of Sacramento River road, in root of aspen tree; nail marked "8891.8 B. M."	8,891.84
Verdon ranch house, 0.4 mile west of, 60 feet northeast of junction of Sacra- mento River and Wills Canyon roads, in limestone ledge; aluminum tablet stamped "8432"	8,431.749
Bishop ranch house, 1.1 miles northwest of, 10 feet south of Sacramento River road, in sandstone rock; chisel mark marked "8089.3 B. M." ..	8,090.31
Bishop ranch house, 50 feet west of, 10 feet north of Sacramento River road, in limestone ledge; aluminum tablet stamped "7934"	7,934.745
Spiller ranch house, 0.2 mile east of, 15 feet north of Sacramento River road, in sandstone rock; aluminum tablet stamped "7426"	7,426.149
O. M. Lee ranch house, 0.5 mile east of, 100 feet west of mouth of Grave- yard Canyon, 20 feet north of Sacramento River road, in sandstone rock; aluminum tablet stamped "7071"	7,071.138
Key ranch house, 600 feet northeast of, 30 feet north of Sacramento River road, in limestone ledge; chisel mark marked "6816.45 B. M." ..	6,816.45
Carissa ranger station, 200 feet west of, 25 feet south of Sacramento River bed, in limestone ledge; aluminum tablet stamped "6685"	6,685.268
Fleming ranch house, 0.2 mile east of, 10 feet north of Sacramento River bed, in root of blazed pine tree; nail marked "6578 B. M." ..	6,577.85
Fleming ranch house, 2.5 miles east of, 10 feet south of Sacramento River bed, in limestone ledge; aluminum tablet stamped "6359"	6,358.901
Fleming ranch house, 4.6 miles east of, on south side of Sacramento River road, 5 feet south of Sacramento River bed, in limestone; chisel mark marked "6164.3 B. M."	6,164.25
Daugherty ranch house, 0.6 mile north of, 100 feet north of Sacramento River road and 150 feet north of Daugherty's tank, in limestone ledge; aluminum tablet stamped "6039"	6,038.909

Stephens Lake, 3.2 miles west of, 25 feet north of Surveyor Canyon road, in sandstone; chisel mark marked "6194.2 B. M."	Feet. 6, 194. 16
Stephens Lake, 2.1 miles west of, 70 feet south of Surveyor Canyon road, 25 feet south of Surveyor Canyon Creek, in limestone ledge; aluminum tablet stamped "6352".....	6, 352. 108
Stephens Lake, 0.8 mile west of, 60 feet south of Surveyor Canyon road, in root of blazed pine tree; nail marked "6518 O. B. M."	6, 518. 05
From Weed west along highway to Alamo Lumber Co. camp on Penasco Creek.	
Note.—Part of the circuit has an error of 1.9 feet, which has not been adjusted.	
Weed, 4.2 miles west of, 600 feet northwest of junction of Aqua Chiquita and Cloudcroft roads, 20 feet east of Cloudcroft road, in limestone ledge; aluminum tablet stamped "7391".....	7, 390. 541
Weed, 6.6 miles northwest of, 15 feet north of Weed-Cloudcroft road, on sandstone rock; chisel mark marked "7857.3 B. M."	7, 857. 30
Weed, 7.2 miles northwest of, summit between Aqua Chiquita and Bear canyons, 50 feet west of Weed-Cloudcroft road, in limestone ledge; aluminum tablet stamped "8162"	8, 161. 880
Weem's ranch house, 200 feet north of Bear Canyon, 15 feet east of Weed-Cloudcroft road, in root of blazed oak tree; nail marked "7623 B. M."	7, 622. 99
Weed, 9.2 miles northwest of, top of divide between Bear Canyon and Penasco Creek, 25 feet east of Weed-Cloudcroft road; chisel mark on limestone rock; blazed pine tree marked "7868.3"	7, 868. 313
Cox Canyon, 0.2 mile west of mouth of, 5 feet north of Penasco Creek road, in limestone ledge; aluminum tablet stamped "7135"	7, 135. 286
Alamo Lumber Co. camp, 8.1 miles east of, 15 feet north of Penasco Creek road, in limestone ledge; aluminum tablet stamped "7639".....	7, 638. 979
Alamo Lumber Co. camp, 8.1 miles east of, 15 feet north of Penasco Creek road, in root of blazed pine tree; nail marked "7786 B. M."	7, 787. 02
Alamo Lumber Co. camp, 3.9 miles east of, 20 feet north of Penasco Creek road, in limestone ledge; aluminum tablet stamped "8104".....	8, 103. 534
Alamo Lumber Co. camp, on Penasco Creek, 75 feet southeast of stables, in limestone ledge; aluminum tablet stamped "8786"	8, 788. 043
Elevation from northwest.....	8, 786. 099
Closure error.....	1. 944

AVIS QUADRANGLE.[Latitude $32^{\circ} 30' - 33^{\circ}$; longitude $105^{\circ} - 105^{\circ} 30'$.]**From Stephens Lake northeast along highway to Pinon, thence northwest to Weed.**

Worthington ranch house, 0.3 mile southeast of, 50 feet south of Sacramento-Pinon road, in limestone ledge; aluminum tablet stamped "6520".....	6, 519. 707
McElrath ranch, 0.5 mile west of, 10 feet south of Sacramento-Pinon road, in root of blazed pinon tree; nail marked "6471.7 B. M."	6, 471. 74
McElrath ranch house, 1 mile east of, 30 feet south of Sacramento-Pinon road, in root of blazed pinon tree; nail marked "6273.1 B. M."	6, 273. 11
Wright's ranch house, 300 feet west of, 50 feet south of Sacramento-Pinon road, in limestone rock; aluminum tablet stamped "6164"	6, 163. 944
Pinon, 0.9 mile west of, 25 feet north of Sacramento-Pinon road, in limestone rock; chisel mark marked "6031.6 B. M."	6, 031. 57
Pinon, 1.4 miles north of, 50 feet east of Pinon-Weed road, in limestone rock; aluminum tablet stamped "6102"	6, 101. 856

Pinon, 3.6 miles north of, 5 feet west of Pinon-Weed road, on limestone ledge; chisel mark marked "6460.5 B. M."	6,460.48
Pinon, 4.6 miles north of, 10 feet south of Pinon-Weed road, in limestone rock; aluminum tablet stamped "6664"	6,664.157
Avis, 1.2 miles east of, 15 feet north of Pinon-Weed road, on limestone rock; chisel mark marked "6684 B. M."	6,684.07
Avis, 0.2 mile east of, 40 feet north of Pinon-Weed road, in limestone ledge; aluminum tablet stamped "6767"	6,766.697
Avis, 1.3 miles northwest of, 20 feet south of Pinon-Weed road, in limestone ledge; aluminum tablet stamped "6937"	6,937.085
Avis, 2.9 miles northwest of, 10 feet east of Pinon-Weed road, on limestone ledge; chisel mark marked "6870.3 B. M."	6,870.31
Avis, 3.6 miles northwest of, 20 feet west of Blue Water Canyon road fork, on limestone rock; chisel mark marked "6814.5 B. M."	6,814.46
Avis, 5.5 miles northwest of, 40 feet south of Pinon-Weed road, at top of divide between Blue Water and Perk canyons, in limestone ledge; aluminum tablet stamped "7290"	7,290.186
Weed, 3.6 miles southeast of, 30 feet west of Pinon-Weed road, in root of oak tree; nail marked "6980.1 B. M."	6,980.10
Weed, 300 feet northeast of post office, 30 feet east of road, in limestone ledge; aluminum tablet stamped "7043"	7,042.601

Alamogordo, Ozanne, Point of Sands, Soudders, Tonouco, and Tularosa quadrangles.

[Latitude 32° 30'-33°; longitude 106°-106° 30'.]

DONA ANA, OTERO, SIERRA, AND SOCORRO COUNTIES.

The elevations in the following list were determined by primary leveling and accord with the 1912 adjustment. Rod and orthometric corrections have been applied. An excessive closure error was adjusted between El Paso and Cutter via Alamogordo. The 1909 line from El Paso to Alamogordo, published on pages 33 and 34, Bulletin 464, is subject to +1.3 feet correction at El Paso and 0.0 foot at Alamogordo to accord with these data.

The leveling was done in Point of Sands quadrangle in 1909 by K. W. Trimble, in 1914 by C. C. Holder, and in 1915 by R. W. Burchard, and in Alamogordo and Ozanne quadrangles in 1914, in Soudders quadrangle in 1915, and in Tonouco and Tularosa quadrangles in 1914 and 1915 by Burchard.

ALAMOGORDO QUADRANGLE.

[Latitude 32° 30'-33°; longitude 105° 30'-106°.]

From Alamogordo northwest along El Paso & Southwestern R. R. 7.6 miles.

Alamogordo, 1.4 miles northwest of, at road crossing; top of east rail painted "4365.7"	Feet. 4,364.7
Alamogordo, 2.9 miles northwest of, in base of telephone pole opposite mile-post 88; spike painted "4405.4"	4,404.42
Alamogordo, 3.8 miles northwest of, on bridge; top of east rail	4,454.6
Alamogordo, 3.9 miles northwest of, on west side of right of way, opposite milepost 89; iron bench-mark post stamped "4452"	4,450.660

Alamogordo, 4.9 miles northwest of, in base of milepost 90; spike painted "4493.7".....	Feet.
	4,492.66
Alamogordo, 5.1 miles northwest of, at road crossing; top of east rail.....	4,492.9
Alamogordo, 5.5 miles northwest of, 7.88 miles south of Tularosa, in base of milepost 91; spike painted "4482".....	4,481.45
Alamogordo, 5.9 miles northwest of, at road crossing; top of east rail.....	4,475.4
Tularosa, 6.87 miles south of, at Kearney station, opposite milepost 92 on west right of way line; iron bench-mark post stamped "4461".....	4,460.065
Tularosa, 6.2 miles south of, at road crossing; top of east rail.....	4,447.8
Tularosa, 5.86 miles south of, in base of milepost 93; spike painted "4444".....	4,443.05
Tularosa, 5.67 miles south of, at road crossing; top of east rail.....	4,440.5

OZANNE QUADRANGLE.

[Latitude 33° 30'-34°; longitude 106°-106° 30'.]

Along highways near south border of quadrangle (part of line from point north of Alamogordo via Oscuro to Henderson ranch).

Oscuro, 5.08 miles west of, at T road south along east side of Malpais, in base of telephone pole 2471; spike painted "4567.7".....	4,566.44
Oscuro, 6.58 miles west of, west of road and 30 feet north of telephone pole 2418, on top of large lava slab at west entrance to lower crossing; bronze tablet stamped "4549".....	4,547.937
Oscuro, 8.21 miles west of, in top of mesquite stump north of road; copper nail and washer.....	4,545.81
Oscuro, 10.49 miles west of, in 2 by 4 inch stake 10 feet south of road; copper nail and washer painted "4580.5".....	4,579.19
Oscuro, 11.9 miles west of, at summit of small gravel ridge, 2.4 miles east of lone red butte, 30 feet north of road; iron post stamped "4611".....	4,609.794
Oscuro, 19.82 miles west of, at summit of ridge, 15 feet north of road, in top of 2 by 4 inch stake; copper nail and washer.....	4,634.50

SOUDERS QUADRANGLE.

[Latitude 33°-33° 30'; longitude 106° 30'-107°.]

From point near Henderson ranch south along highway to point 2.6 miles south of Ritch tank.

Henderson ranch, 3.4 miles south of, 20 feet west of road, in top of cedar stake; copper nail and washer painted "4018".....	4,016.97
Hunter (Mark) ranch, 0.8 mile north of, 50 feet east of road, in top of cedar post; iron nail and copper washer painted "4013.5".....	4,012.27
Hunter (Mark) ranch, 30 feet southeast of house; iron post stamped "4022".....	4,020.422
Hunter (William) ranch, 1.5 miles south of Mark Hunter ranch, in base of northwest corner upright of windmill; copper nail and washer painted "4006.1".....	4,004.85
Hunter (William) ranch, 1.25 miles south of, at east and west fence, 2,000 feet west of wire gate, in base of fence post; copper nail and washer painted "3969.5".....	3,968.22
Ritch tank, 25 feet north of road and 150 feet southwest of tank; iron post stamped "3941".....	3,939.742
Ritch tank, 2 miles south of, at forks of road; point on ground.....	3,916.0
Ritch tank, 2.63 miles south of, 20 feet west of road at point of ridge, in top of 2 by 4 inch stake; copper nail and washer painted "3918.3".....	3,916.89

From Ritch tank west road to along Cutter.

Ritch tank, 1.75 miles west of, in stake at northeast corner of Ritch north windmill; copper nail and washer painted "3973.3"	Feet. 3,971.93
Ritch tank, 3.6 miles west of, at road forks, 30 feet west of road; iron post stamped "4146"	4,145.077
Ritch tank, 5 miles west of, 15 feet west of Sulphur Canyon road, on black boulder; painted cross painted "4329.1"	4,327.76
Ritch tank, 7.9 miles west of, 25 feet south of road, on top of prominent square boulder; painted circle painted "4792.2"	4,790.79
Ritch tank, 9.4 miles west of, 30 feet east of gate in drift fence, 20 feet south of road, on top of limestone outcrop; bronze tablet stamped "4969"	4,967.934
Ritch tank, 10.7 miles west of, 100 feet west of old rock house, 20 feet south of road, in center of stream bed at spring, on large prominent boulder; painted circle painted "5133.7"	5,132.32
Ritch tank, 12.65 miles west of, at head of sulphur springs, 25 feet north of road, 100 feet west of old rock house; iron post stamped "5447"	5,445.973
Sulphur Pass, summit of, 20 feet west of road; iron post stamped "5919"	5,917.155
Sulphur Pass, 1.5 miles west of summit of, 10 feet north of road, on slight ridge, in top of 2 by 4 inch stake; copper nail and washer	5,671.03
Sulphur Pass, 2.6 miles west of summit of, 20 feet north of road, on prominent ridge; iron post stamped "5581"	5,579.220
Sulphur Pass, 4.9 miles west of summit of, on top of ridge, in top of 2 by 4 inch stake; copper nail and washer	5,397.76
Sulphur Pass, 6.5 miles west of summit of, 30 feet north of road, on slight ridge; iron post stamped "5304"	5,302.287
Sulphur Pass, 8.9 miles west of summit of, 1,200 feet east of fords of Engle-Cutter roads, 20 feet north of road, in top of 2 by 4 inch stake; copper nail and washer painted "5125.5"	5,123.97
Cutter, 6.6 miles east of, at deserted adobe house and windmill, in northeast corner of fence inclosing dirt tank; iron post stamped "4836"	4,834.692
Cutter, 4.9 miles east of, 20 feet north of road, in top of cedar stake; copper nail and washer painted "4714.8"	4,713.19
Cutter, 2.1 miles east of, 20 feet north of road on ridge; iron post stamped "4705"	4,702.955
Cutter, on Atchison, Topeka & Santa Fe Ry., at signboard; top of rail	4,710.9
Cutter, 0.9 mile south of, at milepost 1052; iron post	4,715.575

TONUCO QUADRANGLE.

[Latitude 32° 30'-33°; longitude 106° 30'-107°.]

From point 2.6 miles south of Ritch tank south along highway to Bairds north wells.

Ritch tank, 4.8 miles south of, 25 feet north of road on ridge 300 feet east of fence; iron post stamped "3939"	3,937.748
Ritch tank, 5.7 miles south of, 20 feet west of road, in top of mesquite stake; copper nail and washer painted "3968.3"	3,966.95
Ritch tank, 8.7 miles south of, 20 feet west of road on ridge, in top of mesquite stake; copper nail and washer painted "3914.1"	3,912.75
Ritch tank, 9.7 miles south of, 3 miles north of Bairds north wells, 50 feet west of road (west edge of large alkali lake), on spur opposite mineral spring; iron post stamped "3917"	3,915.931

POINT OF SANDS QUADRANGLE.

[Latitude 32° 30'-33°; longitude 106°-106° 30'.]

From point 3.8 miles northeast of Turquoise northeast along El Paso & Southwestern R. R. to point 4 miles northeast of Escondido (part of a single checked line from El Paso, Tex., via Alamogordo, to point 10 miles southeast of Alamogordo). (Taken from Bull. 464, p. 34, corrected.)

Turquoise, 5.8 miles northeast of, at milepost 60, 50 feet west of El Paso & Southwestern R. R.; iron post stamped "4018".....	Feet.
.....	4, 017. 967
Escondido, 2 miles southwest of, at milepost 63, 50 feet west of railroad; iron post stamped "4034".....	4, 034. 389
Escondido, 1 mile northeast of, at milepost 66, 50 feet west of railroad; iron post stamped "4020".....	4, 020. 146
Escondido, 4 miles northeast of, at milepost 69, 50 feet west of railroad; iron post stamped "4004".....	4, 004. 498

From Alamogordo along highway west and southwest to Pelman ranch, thence east to Dog Canyon.

Alamogordo, 2.3 miles west of, 100 feet southeast of house, 50 feet west of road fork west and north, in corner post; spike painted "4265".....	4, 264. 18
Alamogordo, 5 miles west of, 80 feet northwest of section corner to secs. 28, 29, 32, and 33, T. 16 S., R. 10 E., 40 feet north of road; iron post stamped "4194".....	4, 193. 441
Alamogordo, 6.3 miles west of, 100 feet south of road, 200 feet east of house, in corner fence post; spike painted "4169".....	4, 168. 07
Alamogordo, 10.1 miles west of, 50 feet west of road forks; standard iron post stamped "4085".....	4, 083. 501
Pelman ranch, 12.6 miles northeast of, 50 feet east of road, 2 feet west of stone and dirt monument, in top of pipe 2 feet long driven level with ground; bronze tablet stamped "4067".....	4, 065. 955
Pelman ranch, 8.7 miles northeast of, 50 feet west of road, 1,400 feet north of windmill; iron post stamped "4004".....	4, 002. 998
Pelman ranch, 6 miles northeast of, 50 feet north of road forks; iron post stamped "3977".....	3, 976. 025
Pelman ranch, 5.1 miles northeast of, 50 feet north of road, in base of windmill; spike painted "3974".....	3, 972. 59
Pelman ranch, 2.8 miles north of, 50 feet north of road forks; iron post stamped "3965".....	3, 963. 877
Pelman ranch, in base of windmill; spike painted "3955".....	3, 953. 41
Pelman ranch, 1.4 miles east of, 20 feet north of road, on top of north and south ridge; iron post stamped "3982".....	3, 981. 712
Pelman ranch, 4.1 miles east of, 40 feet north of road, in root of mesquite tree; spike.....	3, 984. 40
Two Buttes triangulation station, 2 miles west of, 10 feet north of road; iron post stamped "3986".....	3, 985. 13
Dog Canyon, 8.7 miles west of, 5 feet north of road, in ground; top of pipe.....	3, 988. 3
Dog Canyon, 5.1 miles west of, 10 feet south of road, on top of low north and south ridge; iron post stamped "4004".....	4, 002. 413
Dog Canyon, 2.8 miles west of, quarter section corner between secs. 21 and 28, 20 feet south of road; top of section-corner rock painted "4005".....	4, 004. 00
Dog Canyon, 1.4 miles west of, 100 feet south of road forks, in road; top of rock.....	4, 022. 43

From Pelman ranch west along highway to South Lucero ranch, thence southeast to Leatherman ranch, thence northeast to McNew ranch and Pelman ranch.

	Feet.
McNew ranch house, 70 feet northwest of; iron post stamped "3966".....	3,965.179
McNew ranch, 4.2 miles west of, 50 feet north of road; iron post stamped "3961".....	3,959.537
South Lucero ranch house, 70 feet north of, 10 feet north of fence corner; iron post stamped "4047".....	4,046.095
South Lucero ranch, 1 mile south of, 5 feet east of road; top of rock.....	4,022.073
Woods ranch house, 70 feet southwest of, 20 feet east of road, at fence corner; iron post stamped "3941".....	3,939.939
Leatherman ranch house, 100 feet west of, 10 feet east of road; iron post stamped "3974".....	3,973.186
Leatherman ranch, 3.1 miles northeast of, 60 feet west of road forks; iron post stamped "3957".....	3,956.246
McNew ranch, 8 miles south of, 10 feet west of road, 2 feet east of dirt monument, level with ground; top of iron rod 2 feet long, 2 inches in diameter, stamped "3990".....	3,988.970
McNew ranch, 6.9 miles south of, 60 feet west of road forks; iron post stamped "3985".....	3,983.719
McNew ranch, 3 miles south of, 10 feet west of road on east and west ridge, in 5-inch pipe, 2 feet long, level with ground; bench-mark tablet stamped "3965".....	3,963.361

From Bairds north wells south along highways to south Lucero ranch.

Bairds north wells, 5.2 miles north of Baird ranch, at fence corner, 50 feet west of two windmills; iron post stamped "3982".....	3,980.961
Baird ranch, 3.3 miles north of, 20 feet west of road, in top of 2 by 4 inch stake; copper nail and washer painted "4040.4".....	4,039.00
Baird ranch, 1.1 miles north of, 20 feet west of road, in top of mesquite stake; copper nail and washer painted "4047.0".....	4,045.69
Baird ranch, in southeast corner of cattle pens, 150 feet east of house; iron post stamped "4138".....	4,136.194
Baird ranch, 1.8 miles south of, at forks of road, on top of small boulder; painted circle painted "4058.5".....	4,057.14
Baird ranch, 5 miles south of, 20 feet west of road; iron post stamped "4042".....	4,040.602
Baird ranch, 6.7 miles south of, 15 feet west of forks of road, in top of mesquite stake; copper nail and washer painted "3961.8".....	3,960.48
North Lucero ranch, 4.7 miles north of Lucero ranch, at fence corner 50 feet west of windmill and 100 feet east of house; iron post stamped "3947".....	3,945.385
Lucero ranch, 2.4 miles north of, 20 feet west of road, in top of mesquite stake; copper nail and washer painted "4034.9".....	4,033.50
Lucero ranch house, 70 feet north of, 10 feet north of fence corner; iron post stamped "4047" (set by C. C. Holder).....	4,046.095

TULAROSA QUADRANGLE.

[Latitude 33°-33° 30'; longitude 106°-106° 31'.]

From point north of Alamogordo north along El Paso & Southwestern R. R. to Oscuro, thence along highways west and south to Henderson ranch (part of line).

Tularosa, 5.1 miles south of, at road crossing; top of east rail.....	4,430.3
Tularosa, 4.8 miles south of, in base of milepost 94; spike painted "4425".....	4,424.10
Tularosa, 4.1 miles south of, at road crossing; top of east rail.....	4,416.9
Tularosa, 3.8 miles south of, on west right-of-way line; iron post stamped "4414".....	4,413.211

	Feet.
Tularosa, 2.8 miles south of, in base of milepost 96; spike painted "4407" ..	4, 405. 85
Tularosa, 1.8 miles south of, in base of milepost 97; spike painted "4408" ..	4, 406. 89
Tularosa, 0.8 mile south of, in base of milepost 98; spike painted "4430.3" ..	4, 429. 18
Tularosa, at road crossing just south of station; top of east rail ..	4, 442. 2
Tularosa, 100 feet west of station; iron post stamped "4449" ..	4, 447. 623
Tularosa, on north end of top step of west approach to First State Bank; bronze tablet stamped "4515" ..	4, 514. 413
Tularosa, 0.8 mile north of; crossing just south of bridge 998 ..	4, 456. 6
Tularosa, 1.2 miles north of, in south side of milepost 100; spike painted "4455.2" ..	4, 454. 16
Tularosa, 2.3 miles north of, in base of milepost 101; spike painted "4460.2" ..	4, 459. 02
Tularosa, 2.4 miles north of, at road crossing north of milepost 101; top of east rail ..	4, 458. 57
Tularosa, 3.3 miles north of, in base of milepost 102; spike painted "4460.4" ..	4, 459. 33
Tularosa, 4.3 miles north of, on west right of way line, opposite milepost 103; iron post stamped "4462" ..	4, 460. 807
Tularosa, 5.35 miles north of, in base of milepost 104; spike painted "4459.9" ..	4, 458. 81
Tularosa, 6.38 miles north of, in base of milepost 105; spike painted "4490.4" ..	4, 489. 23
Tularosa, 7.67 miles north of, at Temporal station, on west right of way line, 100 feet south of section house; iron post stamped "4520" ..	4, 518. 846
Tularosa, 8.37 miles north of, in base of milepost 107; spike painted "4519.6" ..	4, 518. 432
Tularosa, 9.4 miles north of, 8.68 miles south of Three Rivers, in base of milepost 108; spike painted "4504.6" ..	4, 503. 46
Three Rivers, 7.64 miles south of, in base of milepost 109; spike painted "4478.1" ..	4, 476. 95
Three Rivers, 6.66 miles south of, in top of milepost 110; copper nail and washer painted "4480.3" ..	4, 479. 11
Three Rivers, 6.27 miles south of, at Salinas station, on west right of way line opposite signboard; iron post stamped "4471" ..	4, 469. 548
Three Rivers, 5.6 miles south of, in base of milepost 111; spike painted "4474.3" ..	4, 473. 15
Three Rivers, 4.61 miles south of, in base of milepost 112; spike painted "4488.1" ..	4, 486. 97
Three Rivers, 3.49 miles south of, on west side of right of way and about 200 feet south of milepost 113; iron post stamped "4500" ..	4, 499. 097
Three Rivers, 2.39 miles south of, in base of milepost 114; spike painted "4529.4" ..	4, 528. 25
Three Rivers, 1.39 miles south of, in base of milepost 115; spike painted "4539.5" ..	4, 538. 29
Three Rivers, 0.2 mile south of, at road crossing; top of east rail ..	4, 569. 6
Three Rivers, 100 feet south of station and 5 feet south of telephone pole, on west side of railroad; iron post stamped "4570" ..	4, 568. 345
Three Rivers, 400 feet west of station, in north side of step at east entrance to schoolhouse; chiseled cross ..	4, 563. 88
Three Rivers, 0.5 mile north of, in base of milepost 117; spike painted "4570.5" ..	4, 569. 33
Three Rivers, 1.5 miles north of, 100 feet south of milepost 118, in top of north post of rail rack; copper nail and washer painted "4608.7" ..	4, 607. 45
Three Rivers, 3 miles north of, on west right of way line on north side of road, at road crossing; iron post stamped "4669" ..	4, 667. 502

Three Rivers, 3.6 miles north of, in top of milepost 120; copper nail and washer painted "4702.2".....	Feet.
	4,700.97
Three Rivers, 4.6 miles north of, in base of milepost 121; spike painted "4750.2".....	4,749.00
North station, in front of signboard; top of east rail.....	4,786.03
North station, 2,000 feet north of, on west side of track, in top of north end of concrete culvert; bronze tablet stamped "4801".....	4,800.151
Oscuro, 5.82 miles south of, in base of milepost 123; spike painted "4854.5".....	4,853.31
Oscuro, 4.75 miles south of, in top of milepost 124; copper nail and washer painted "4912.3".....	4,911.14
Oscuro, 3.2 miles south of, 1,000 feet south of milepost 125, on southwest corner of concrete culvert; bronze tablet stamped "4933".....	4,932.135
Oscuro, 2.79 miles south of, in base of milepost 126; spike painted "4977.5".....	4,976.35
Oscuro, 1.77 miles south of, in base of milepost 127; spike painted "5018.7".....	5,017.49
Oscuro, 500 feet south of station, on west side of track, on north side of road; iron post stamped "5024".....	5,023.111
Oscuro, in front of station; top of east rail.....	5,025.6
Oscuro, 0.81 mile west of, on south side of road, in top of corner fence post; copper nail and washer painted "4941.0".....	4,939.80
Oscuro, 1.78 miles west of, on south side of road, in corner fence post; copper nail and washer painted "4855.5".....	4,854.26
Oscuro, 2.58 miles west of, 50 feet south of watering trough at Phillips Spring; iron post stamped "4761".....	4,759.393
Oscuro, 3.36 miles west of, 25 feet southwest of road, in base of telephone pole 2531; spike painted "4728.3".....	4,727.05
Oscuro, 13.66 miles west of, on summit of ridge, 0.5 mile east of lone red butte, 15 feet south of road, in top of 2 by 4 inch stake; copper nail and washer painted "4679.7".....	4,678.47
Oscuro, 14.9 miles west of, at crossroads, in base of telephone pole 2135; railroad spike painted "4705.5".....	4,704.19
Oscuro, 17.47 miles west of, 30 feet north of crossroads; iron post stamped "4633".....	4,631.447
Oscuro, 20.41 miles west of, 6.5 miles north of Gilliland ranch, in northeast angle of crossroads, in top of 2 by 4 inch stake; copper nail and washer painted "4643.5".....	4,642.24
Gilliland ranch, 4.62 miles north of, in southwest angle of dim road northwest, in top of granite boulder sunk 2 feet in ground; bronze tablet stamped "4513".....	4,511.584
Gilliland ranch, 3.19 miles north of, 30 feet west of road, in top of 2 by 4 inch stake; copper nail and washer painted "4406.7".....	4,405.39
Gilliland ranch, 1.31 miles north of, in southwest angle of crossroads, on slight raise clear of brush; iron post stamped "4330".....	4,328.492
Gilliland ranch, 10 feet east of east entrance to front yard, in base of cedar post; railroad spike painted "4248.2".....	4,246.85
Gilliland ranch, 2 miles south of, 15 feet west of road on small rise, in top of 2 by 4 inch stake; copper nail and washer painted "4274.00".....	4,272.67
Gilliland ranch, 4.5 miles south of, in northeast corner of front yard of Gilliland south ranch; iron post stamped "4186".....	4,184.331
Gilliland south ranch, 2.9 miles south of, 0.25 mile west of Salt Creek, about 0.25 mile south of road forks and 30 feet west of road, on slight ridge; iron post stamped "4069".....	4,067.979
Gilliland south ranch, 5 miles south of, 0.5 mile west of Salt Creek, 20 feet west of road, in top of cedar stake; copper nail and washer painted "4054.8".....	4,053.48

Jackson ranch, 1.25 miles northwest of, 20 feet north of road, in top of 2 by 4 inch stake; copper nail and washer painted "4091.6".....	Feet.
..... 4, 090. 34	
Jackson ranch, 100 feet east of ranch house; iron post stamped "4118".....	4, 116. 728
Jackson ranch, 1.25 miles south of, at fence corner, in base of post; railroad spike painted "4080.9".....	4, 079. 59
Jackson ranch, 3 miles south of, 15 feet west of road, in top of 2 by 4 inch stake; copper nail and washer painted "4042.2".....	4, 040. 89
Henderson ranch, 100 feet east of house, in fence corner; iron post stamped "4032".....	4, 030. 737
Henderson ranch, 1.9 miles south of, 30 feet north of crossroads, in base of mesquite tree; copper nail and washer painted "4045".....	4, 043. 78

From point 3 miles north of Three Rivers west toward Malpais (single spur line).

Three Rivers, 3 miles north and 0.5 mile west of, in base of corner fence post; copper spike and washer.....	4, 622. 90
Three Rivers, 3 miles north and 2.6 miles west of, in stump of lone mesquite tree 0.5 mile from foothills; copper nail.....	4, 430. 28
Three Rivers, 5 miles northwest of, 1,000 feet east of Malpais, 0.6 mile north of junction of Three Rivers-Malpais road, 15 feet east of road; iron post stamped "4362".....	4, 360. 633

From Tularosa west along highway to Ritch tank.

Tularosa, 0.92 mile west of station, in base of corner fence post; spike and washer painted "4413.2".....	4, 412. 12
Tularosa, 1.9 miles west of, on south side of road, in base of corner fence post; nail and washer painted "4357.9".....	4, 356. 79
Tularosa, 3.4 miles west of, 200 feet north of Purdy's ranch house, in top of front gate post; copper nail and washer painted "4302.9".....	4, 301. 80
Tularosa, 5.3 miles west of, 1,000 feet west of old camp in arroyo, 20 feet south of road on mesa; iron post stamped "4221".....	4, 219. 655
Tularosa, 6.6 miles west of, 100 feet south of road forks, in top of mesquite stump; spike painted "4161.6".....	4, 160. 455
Tularosa, 8.1 miles west of, at road forks at east edge of Brazos Arroyo, in top of stake; copper nail and washer painted "4100.1".....	4, 098. 93
Tularosa, 9.9 miles west of, 20 feet south of road, about 0.25 mile west of the east edge of "The Sands"; iron post stamped "4093".....	4, 092. 262
Tularosa, 12.2 miles west of, 20 feet south of road, in top of mesquite stake; copper nail and washer.....	4, 035. 65
Tularosa, 14.47 miles west of, 15.1 miles east of Ritch tank, 25 feet north of forks of road to Henderson ranch; iron post stamped "4004".....	4, 002. 374
Ritch tank, 13.1 miles east of, 20 feet south of road, in top of mesquite stake; copper nail and washer painted "3996.9".....	3, 995. 68
Ritch tank, 11.3 miles east of, 20 feet south of road on slight ridge, in top of mesquite stake; copper nail and washer painted "3985.8".....	3, 984. 58
Ritch tank, 9.3 miles east of, 25 feet north of road, on slight ridge; iron post stamped "3981".....	3, 980. 013
Ritch tank, 7.4 miles east of, on ridge 30 feet north of road, in top of pine stake; copper nail and washer painted "3963.2".....	3, 961. 87
Ritch tank, 6.2 miles east of, 20 feet north of forks of road to Hunter ranch, in top of mesquite stake; copper nail and washer painted "3955.9".....	3, 954. 62
Hunter ranch, 4.8 miles east of, 25 feet north of gate; iron post stamped "3971".....	3, 969. 341
Ritch tank, 2.5 miles east of, 20 feet north of road, on summit of ridge, in 2 by 4 inch stake; copper nail and washer painted "3990.7".....	3, 989. 40

Magdalena, San Marcial, and Socorro quadrangles.

SOCORRO COUNTY.

The elevations in this list are determined by primary leveling connected with the precise-level line over the Atchison, Topeka & Santa Fe Railway, which crosses the San Marcial and Socorro quadrangles.

Leveling in all three quadrangles was done by Chester Irvine in 1904. Additional leveling was done in the Magdalena quadrangle by F. A. Nussle and in the San Marcial quadrangle by B. D. Stewart in 1905.

SAN MARCIAL QUADRANGLE.

[Latitude $33^{\circ} 30' - 34^{\circ}$; longitude $106^{\circ} 30' - 107^{\circ}$.]

Near Socorro.

Luis Lopez, 4.5 miles south of Socorro, at southwest corner of church; iron post stamped "4575 Socr 1904"..... 4, 581. 127

SOCORRO QUADRANGLE.

[Latitude $34^{\circ} - 34^{\circ} 15'$; longitude $106^{\circ} 45' - 107^{\circ}$.]

From Socorro north over Atchison, Topeka & Santa Fe Ry. to Lemitar.

Socorro, 2 miles south of, 40 feet southwest of railroad crossing; iron post stamped "4568 Socr 1904"..... 4, 574. 151
 Socorro, in front of station; top of rail..... 4, 588. 2
 Socorro, 3 miles north of, 90 feet east of Escondido Church; iron post stamped "4624 Socr 1904"..... 4, 630. 164
 Lemitar, 50 feet southeast of signboard at station; iron post stamped "4618 Socr 1904"..... 4, 624. 577
 Lemitar, 3 miles north of, 40 feet east of railroad crossing; iron post stamped "4636 Socr 1904"..... 4, 641. 946

From Luis Lopez northwest along road to Socorro Canyon.

Luis Lopez, 1.6 miles northwest of, 5 feet from road, on end of ridge, north side of drain; aluminum tablet stamped "4820 Socr"..... 4, 826. 314

From Socorro south and west via Magdalena Branch.

Socorro, 3.5 miles southwest of, 50 feet west of road crossing, near dam in arroyo; iron post stamped "4919 Socr 1904"..... 4, 923. 666
 Socorro, 5 miles southwest of, at southeast corner of old section house; iron post stamped "5159 Socr 1904"..... 5, 165. 323
 Socorro, 7.8 miles southwest of, 30 feet north of railroad, on flat bench; iron post stamped "5497 Socr 1904"..... 5, 503. 423

From Socorro north and west along road toward Snake ranch.

Socorro, in northwest corner of courthouse; aluminum tablet stamped "4610 Socr 1904"..... 4, 616. 379
 New Mexico School of Mines, southeast corner of building; aluminum tablet stamped "4616 Socr 1904"..... 4, 622. 434
 New Mexico School of Mines, 3.5 miles north of, 5 feet south of road, south bank of Nogah Canyon; iron post stamped "4806 Socr 1904"..... 4, 811. 427
 New Mexico School of Mines, 6 miles northwest of, 10 feet south of road on end of ridge; iron post stamped "5115 Socr 1904"..... 5, 121. 335

From Lemitar west along road toward Polvadera Mountain.

Lemitar, 3 miles west of, 20 feet north of road, 0.8 mile east of foot of mountain; iron post stamped "5101 Socr 1904" 5, 107. 229

From Escondido east to Ojo de la Parida, thence north 9 miles, thence west to Almillo.

Publito, 2 miles east of, 10 feet north of wagon road, 150 feet north of drain; iron post stamped "4878 Socr 1904" 4, 884. 276

Ojo de la Parida ranch, 1.5 miles west of, 120 feet east of road forks, end of high ridge; iron post stamped "5188 Socr 1904" 5, 194. 237

Ojo de la Parida, 2.5 miles north of, 50 feet west of road, by mesquite tree on flat; iron post stamped "5118 Socr 1904" 5, 124. 464

Ojo de la Parida, 6 miles northeast of, 10 feet east of ranch, 0.5 mile east of middle one of three hills on flat; iron post stamped "5116 Socr 1904" 5, 122. 413

Ojo de la Parida, 8.5 miles northwest of, 40 feet north of trail, in saddle, south foot of rock butte; aluminum tablet stamped "5184 Socr 1904" 5, 190. 414

Almillo, 3.5 miles northeast of, beside blazed cedar tree, on sand mesa; aluminum tablet stamped "4972 Socr 1904" 4, 978. 184

From Polvadera northwest to San Lorenzo Arroyo.

Polvadera, 2.2 miles northwest of, 20 feet south of point where road crosses divide to San Lorenzo Arroyo; iron post stamped "4926 Socr 1905" 4, 932. 027

From Jaral Largo east to Ojo de las Canas, thence north to Ojo de la Parida.

Jaral Largo, 0.7 mile northeast of, 150 feet north of Arroyo de las Canas at road crossing of arroyo, about 17 feet above arroyo bed, on point of hill; iron post stamped "4650 Socr 1905" 4, 656. 300

Ojo de las Canas, 150 feet northwest of spring, 5 feet east of small rock house, in large limestone boulder; aluminum tablet stamped "5050 Socr 1905" 5, 056. 870

Ojo de las Canas, 4.8 miles north of, 100 feet northeast of township corner T. 2 S., R. 1 E., in rock outcrop; aluminum tablet stamped "5190 Socr 1905" 5, 196. 855

MAGDALENA QUADRANGLE.

[Latitude $34^{\circ} 30' - 35^{\circ}$; longitude $107^{\circ} - 107^{\circ} 30'$.]

From Magdalena Branch of Atchison, Topeka & Santa Fe Ry. to Snake ranch.¹

Cactus Flat ranch, 2.5 miles west of, 40 feet south of railroad, west foot of small white hill; iron post stamped "5762 Socr 1904" 5, 768. 497

Snake ranch, 800 feet west of, 10 feet south of road from ranch to Magdalena; iron post stamped "5747 Socr 1904" 5, 753. 511

From Socorro north and west to Snake ranch.

Snake ranch, 1.6 miles northeast of, 50 feet north of road, summit of high ridge, north foot of Strawberry Peak; aluminum tablet stamped "5921 Socr 1904" 5, 926. 751

Up San Lorenzo Arroyo to San Lorenzo Spring.

San Lorenzo Spring, 100 feet west of, 10 feet above bottom of wash, 6.1 feet north of northwest corner of adobe ruin; iron post stamped "5438 Socr 1905" 5, 443. 717

¹ For additional elevations in Magdalena quadrangle see pp. 72.

From San Lorenzo Spring south along road to Snake ranch.

San Lorenzo Spring, 3.7 miles southwest of, 20 feet east of road, on summit of low ridge; aluminum tablet stamped "5905 Socr 1905".....	Feet.
Snake ranch, 4.4 miles west of north of, 10 feet east of road, on top of low ridge; iron post stamped "6067 Socr 1905".....	5, 911. 295
	6, 072. 718

From forks of road 1 mile south of San Lorenzo Spring south toward Snake ranch.

San Lorenzo Spring, 4 miles southwest of, 20 feet south of road, top of main divide, 500 feet south of southeast corner of Sander's fence; iron post stamped "5949 Socr 1905".....	5, 954. 997
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From Cactus Flat ranch northwest along railroad to Magdalena, thence southeast via smelter railroad and wagon road to Kelly.

Cactus Flat ranch, 2.5 miles west of, 40 feet south of railroad, about 300 feet north of wagon road, west foot of small white hill; iron post stamped "5762 Socr 1904".....	5, 768. 497
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Cactus Flat ranch, 6.8 miles west of, at southwest corner of section-house fence, 50 feet north of track; iron post stamped "6004 Socr".....	6, 010. 187
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Water Canyon, 1.8 miles west of, 50 feet north of wagon road, at milepost 995; iron post stamped "5982 Socr".....	5, 989. 075
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Water Canyon, 4.7 miles west of, at first telegraph pole east of milepost 998, 200 feet north of wagon road; iron post stamped "6034 Socr".....	6, 040. 310
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Water Canyon, 7.8 miles west of, at crossing of road to Sanders ranch and to Polvadera, near warning post, 1,500 feet north of main road, 6-inch telegraph pole west of milepost 1001; iron post stamped "6267 Socr".....	6, 273. 381
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NOTE.—The remainder of this line is a spur run direct and reverse.

Magdalena, at road crossing, set near first telegraph pole east of station; iron post stamped "6556 Socr".....	6, 562. 182
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Magdalena, 2 miles south of, 1,000 feet north of smelter, near telephone pole, 70 feet east of railroad, 70 feet north of wagon road, near road crossing; iron post stamped "6883 Socr".....	6, 888. 899
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Kelly, 60 feet north of road, at right turn in road at west side of town, 100 feet west of shed at fence corner, in flat limestone rock 15 feet west of juniper tree; aluminum tablet stamped "7437 Socr".....	7, 443. 400
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Kelly mine (Tri-Bullion Mining & Development Co.), 300 feet north of office building, 250 feet northwest of mouth of mine, on bank of arroyo near path, in gray porphyry rock ledge; aluminum tablet stamped "7688 Socr".....	7, 694. 214
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From bench mark at road crossing northeast 7.7 miles to La Gencia triangulation station, near Sanders ranch, thence to bench mark on divide on Magdalena-Polvadera road.

Sanders ranch, 3 miles north of road crossing, at gate to Sanders pasture, 10 feet east of gate; iron post stamped "6014".....	6, 020. 662
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Sanders ranch, about 0.5 mile east of, 8 miles north of road crossing, La Gencia triangulation station, at foot of juniper tree, in rock; aluminum tablet stamped "5785 Socr".....	5, 791. 561
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Sanders ranch, about 4 miles east of, at gate on Water Canyon road, 10 feet north of gate; iron post stamped "5843 Socr".....	5, 849. 157
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San Lorenzo Spring, 4 miles southwest of, top of main divide, 500 feet south of northeast corner of Sanders ranch fence; iron post stamped "5949 Socr 1905 No. 3".....	5, 954. 997
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Gallina and Jemez quadrangles.

RIO ARRIBA AND SANDOVAL COUNTIES.

The leveling in the Jemez quadrangle was done by M. S. Bright in 1905. That in the Gallina quadrangle was done by Bright in 1905, by A. R. Carver in 1906, and by F. A. Nussle in 1907.

JEMEZ QUADRANGLE.

[Latitude $35^{\circ} 30' - 36^{\circ}$; longitude $106^{\circ} 30' - 107^{\circ}$.]

From the Divide southwest via Senorito post office to point 2.5 miles southeast of Cuba.

The Divide, 2 miles southwest of, west side of stream, 80 feet east of corral, 8 feet west of road, in outcrop of limestone rock; aluminum tablet stamped "147".....	Feet.
	8,481.461
The Divide, 3 miles southwest of, 6 feet west of road summit, in south root of 28-inch pine tree; nail.....	8,463.06
The Divide, 4 miles southwest of, in south root of 26-inch pine tree; nail.....	8,369.67
The Divide, 5.25 miles southwest of, about 100 feet south of road, 250 feet north of creek, 25 feet north of old road, in granite outcrop; aluminum tablet stamped "150".....	8,168.293
The Divide, 7.25 miles southwest of, 50 feet north of road, in south root of 28-inch leaning pine tree; nail.....	8,469.30
Copper City Gap, 8 feet south of road summit, in north root of 14-inch cottonwood tree; nail.....	8,734.77
Copper City Gap, 0.25 mile west of, in canyon, 4 feet south of road, in sandstone outcrop; aluminum tablet stamped "154".....	8,665.739
Copper City Gap, 2.8 miles southwest of, west side of canyon, 8 feet east of road, in west root of 50-inch pine tree; nail.....	7,584.70
Senorito post office (Copper City), 25 feet north of north edge of road, in sandstone outcrop; aluminum tablet stamped "157".....	7,318.910
Copper City, 2.5 miles west of, at top of ridge, 150 feet west of road forks; iron post stamped "159".....	7,211.156

GALLINA QUADRANGLE.

[Latitude $36^{\circ} - 36^{\circ} 30'$; longitude $106^{\circ} 30' - 107^{\circ}$.]

From Cuba southeast 2.5 miles.

Cuba, northeast corner of yard fence around E. A. Miera's residence; iron post stamped "100".....	6,899.011
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From Cuba north to Gallina, thence southeast 7 miles, thence south to the divide near Penas Negras.

Cuba, 3.25 miles north of, about 0.25 mile north of road on hillside, south side of ridge, 120 feet east of road, in sandstone outcrop; aluminum tablet stamped "103".....	7,164.110
La Jara, 0.25 mile west of, 150 feet north of lake, at top of slight ridge, 30 feet south of road; iron post stamped "106".....	7,120.123
La Jara, 2.25 miles northwest of, on ridge 10 feet west of road summit, in east root of 28-inch pine tree; nail.....	7,234.560
La Jara, 3.25 miles north of, about 700 feet south of road forks, on north slope of hill, 8 feet east of road; iron post stamped "109".....	7,221.673
La Jara, 4.5 miles north of, 25 feet east of road forks, in west side of 30-inch pine tree; nail.....	7,258.02

La Jara, 7 miles north of, on spur of ridge 10 feet west of road, 200 feet south of road forks; iron post stamped "112".....	Feet.
	7,428.506
La Jara, 9.25 miles north of, at top of divide, 15 feet east of road, in west root of 22-inch pinon tree; nail.....	7,566.77
La Jara, 10.8 miles north of, on ridge, east side of road forks at summit; iron post stamped "115".....	7,560.059
Gallina, 2.3 miles west of, sec. 7, T. 23 N., R. 1 E., on ridge 6 feet south of summit; iron post stamped "118".....	7,415.586
Gallina, 1.2 miles west of, 60 feet southeast of road forks, at south edge of bottom, in north root of 15-inch dead pinon tree; nail.....	7,292.33
Gallina, 1 mile east of, sec. 15, T. 23 N., R. 1 E., in lane, 700 feet north of ranch house, 50 feet north of road fork, 8 feet south of fence, in sandstone outcrop; aluminum tablet stamped "121".....	7,582.37
Gallina, 2.25 miles east of, 20 feet north of road, 400 feet west of house, south side of canyon, in north root of 24-inch pine tree; nail.....	7,618.75
Gallina, 3.25 miles east of, 300 feet east of road forks, 10 feet south of road, in north side of 30-inch dead pine tree; nail.....	7,709.11
Gallina, 4.5 miles east of, at a point where road enters timber, 110 feet east of road forks, 18 feet south of road, in sandstone boulder; aluminum tablet stamped "124".....	7,835.989
Gallina, 7.5 miles east of, in road fork, in sandstone outcrop; aluminum tablet stamped "127".....	7,767.794
Agua Sacra, 1.8 miles south of, 16 feet east of road, north side of canyon, in west root of 24-inch pine tree; nail.....	8,017.58
T. 22 N., R. 2 E., sec. 9, 2.5 miles south of Agua Sacra, 430 feet north of canyon, 40-feet west of road, in sandstone outcrop; aluminum tablet stamped "130".....	8,151.174
Rio Paleo Ford, 300 feet east of, in road forks, in east root of 36-inch pine tree; nail.....	7,971.58
T. 22 N., R. 2 E., sec. 22, 1.25 miles south of Rio Paleo, 6 feet west of road summit, in gap, set in sandstone rock; aluminum tablet stamped "133".....	8,398.256
Rio Puerco Ford, 1 mile east of, on west side of canyon, 4 feet west of road on south side of river, in east root of 30-inch pine tree; nail.....	8,184.85
T. 22 N., R. 2 E., south side of sec. 35, 2 miles southeast of Rio Puerco Ford, west side of Bonito Canyon, 10 feet west of road, in sandstone outcrop; aluminum tablet stamped "136".....	8,183.314
T. 21 N., R. 2 E., sec. 13, 6 miles south of Rio Puerco Ford, west side of draw, 35 feet west of road at foot of sandstone bluff, 600 feet north of hay field, in sandstone outcrop; aluminum tablet stamped "140".....	8,596.776
Rio Puerco Ford, 7.8 miles south of, in gap on west side of road summit, in east root of 38-inch pine tree; nail.....	8,955.65
T. 21 N., R. 2 E., sec. 27, 160 feet east of Penas Negras ranch house, 10 feet west of road, in west side of canyon, in limestone outcrop; aluminum tablet stamped "143".....	8,703.146
The Divide, in gap at top of, 45 feet west of road summit, at base of 30-inch pine tree, on limestone boulder; center of paint circle.....	9,028.16
From Gallina north to point 3 miles north of Ferran ranch, thence east to mouth of Rio Puerco, thence southeast and southwest to Coyote, thence west to point 7.5 miles east of Gallina.	
Rock Hut, 150 feet west of, 35 feet west of road, 160 feet north of forks, 200 feet east of river, on granite boulder; center of paint circle.....	7,220.00
Leon Belarde ranch house, 1 mile northeast of, 900 feet north of road forks, east toe of hill, 10 feet west of road; iron post stamped "165".....	7,162.189

Ferran ranch house, 0.25 mile south of, west toe of hill, north side of road, 165 feet north of forks, set in sandstone outcrop; aluminum tablet stamped "168".....	Feet.	6,981. 359
Ferran ranch, 3 miles north of, on west side of river in road forks; iron post stamped "171".....	6,884. 284	
Head of canyon on Gallina River, 1 mile east of, on south side of canyon 60 feet south of river, in willow grove; iron post stamped "174".....	6,782. 974	
Head of canyon on Gallina River, 2.8 miles east of, 60 feet north of road, on north side of river, about 0.5 mile west of ranch house, in east side of 14-inch leaning cottonwood tree; nail.....	6,741. 74	
Chupadero ranch, 1.25 miles east of, about 200 feet north of wall of canyon, 70 feet south of river, between two cottonwood trees; iron post stamped "177".....	6,645. 953	
Chupadero ranch, 4.25 miles east of, about 500 feet east of old gate and fence, 150 feet west of Sagebrush Flat, 300 feet south of river, 5 feet north of 14-inch leaning pinon tree, 6 feet south of road; iron post stamped "180".....	6,500. 529	
Mouth of Gallina River, 1.25 miles southeast of, 60 feet east of road, 75 feet east of pole hut on west bank of Chama River, in west root of 14-inch double post-oak tree; nail.....	6,420. 27	
Mouth of Gallina River, 1.8 miles southeast of, in timber on hillside 60 feet south of edge of bluff, 10 feet south of road; iron post stamped "183".....	6,450. 618	
Burns ranch, 0.6 mile west of, 5 miles east of mouth of Gallina River, 125 feet south of flume, 50 feet south of road, 8 feet north of wire fence, on east bank of wash, on sandstone; center of cross.....	6,393. 76	
Burns ranch, 0.6 mile west of, 5 miles east of mouth of Gallina River, 125 feet south of flume, 50 feet south of road, 9 feet north of wire fence, in east bank of wash, in sandstone, 6 inches east of cross; aluminum tablet stamped "187½".....	6,393. 878	
Burns ranch house, 0.8 mile southeast of, 20 feet east of gate at south entrance to farm, in west root of 24-inch cottonwood tree; nail.....	6,304. 84	
Burns ranch, 2.8 miles east of, 200 feet north of river, 75 feet north of road, at foot of hills, in limestone rock 6 inches west of painted circle; aluminum tablet stamped "190½".....	6,270. 250	
Burns ranch, 7 miles southeast of, 250 feet east of cut, on south edge of railroad grade, in sandstone outcrop at foot of bluffs, 6 inches south of painted circle; aluminum tablet stamped "194½".....	6,176. 685	
Mouth of Rio Puerco, 0.8 mile south of, east of river, 60 feet south of old house, in sandstone outcrop 6 inches west of painted circle; aluminum tablet stamped "196½".....	6,209. 743	
Gallegos ranch, about 4.5 miles southeast of, northeast side of crossroads, mound on north and pit on east, in sandstone; aluminum tablet stamped "198½".....	6,529. 679	
Gallegos ranch, 7.8 miles southeast of, in forks of Coyote-Abiquiu and Coyote-Amarilla roads, in volcanic rock 2 inches west of paint circle; aluminum tablet stamped "201½".....	6,848. 603	
Rito, 0.8 mile southwest of, 200 feet south of road, 100 feet west of stream, in east root of 14-inch post-oak tree; nail.....	6,713. 25	
Rito, 2 miles southwest of, 40 feet west of road, west side of ridge, in sandstone boulder, 12 feet north of volcanic boulder; aluminum tablet stamped "204½".....	6,653. 937	
Coyote, 1.25 miles southwest of, 25 feet north of road, in sandstone outcrop 1 foot north of paint circle; aluminum tablet stamped "207½".....	6,772. 906	

Coyote, 4.8 miles west of, south edge of road, 12 feet northeast of leaning pinon tree 14 inches in diameter; in sandstone boulder; aluminum tablet stamped "210½".....	Feet.
	7, 291. 355
Coyote, 6.8 miles west of, 30 feet north of road, in west root of 18-inch pinon tree; nail.....	7, 761. 50

From point 3 miles north of Ferran ranch north 9 miles along Elvado road.

Ferran ranch, 3 miles north of, in road forks; iron post.....	6, 884. 284
Ferran ranch, 5.7 miles north of, 300 feet east of Little Gallina Arroyo, in road forks west of point of ridge; iron post stamped "6941".....	6, 951. 078
Ferran ranch, 8.4 miles north of, 500 feet east of sandstone bluff, 75 feet south of summit, in road forks; iron post stamped "7289".....	7, 299. 280
Ferran ranch, 11.2 miles north of, 10 feet east of road, 20 feet southwest of blazed pinon tree, on top of ridge; iron post stamped "9".....	7, 154. 107

From point 3 miles north of Ferran ranch north 10 miles along Stinking Lakes road.

Ferran ranch, 5.6 miles north of, 20 feet east of road, 30 feet southeast of blazed cedar tree, in top of sandstone outcrop; aluminum tablet stamped "114".....	7, 036. 607
Ferran ranch, 8.1 miles north of, 100 feet east of road, on top of ridge, 20 feet east of blazed cedar tree, in top of sandstone boulder; aluminum tablet stamped "112".....	7, 160. 674
Ferran ranch, 11 miles north of, 10 feet west of road, on top of ridge, 30 feet southwest of blazed pinon tree, in top of limestone outcrop; aluminum tablet stamped "109".....	7, 319. 110

Dulce, Flora Vista, Monero, Stony Butte, and Turley quadrangles.

RIO ARRIBA AND SAN JUAN COUNTIES.

The initial elevation for the following list is an elevation at Cuba determined by precise leveling. Several yard errors occurred during the progress of this work, most of which have been rectified upon final computation and by the rerunning of certain portions by Nussle, but there still remains an uncertainty of 3 feet in the elevations given in part of this list, which can not be corrected unless further field work is done.

Most of the leveling was done in 1906 by A. R. Carver. A part of that in the Monero and Dulce quadrangles was done in 1907 by Fred A. Nussle.

MONERO QUADRANGLE.

[Latitude 36° 30'-37°; longitude 106° 30'-107°.]

From point 12 miles north of Ferran ranch north to Elvado, thence west around Middle Stinking Lake and south to point 11 miles north of Ferran ranch.

Ferran ranch, 15.3 miles north of, 10 feet east of road on top of small summit, 500 feet east of sandstone bluff; iron post.....	Feet.
	6, 936. 818
Elvado, 3.1 miles south of, 10 feet east of road on top of ridge, 20 feet west of dead pinon tree; iron post.....	7, 249. 501
Elvado, railroad crossing; top of east rail.....	6, 795. 58
Elvado, Burns & Biggs Lumber Co.'s store, at northwest corner; iron post.....	6, 808. 565
Horse Lake Junction, 3.6 miles south of, 60 feet east of track, 75 feet south of arroyo; iron post stamped "86".....	6, 858. 602

Ferran ranch, 28 miles north of, 75 feet north of road, 75 feet south of foot of sandstone bluff; iron post stamped "B. M. 90"	Feet. 7,069.767
Middle Stinking Lake; surface of water, Aug. 26, 1906	7,094
Stinking Lake, 1,000 feet west of, at foot of sandstone bluff, 5 feet east of road, in top of sandstone boulder; aluminum tablet stamped "93"	7,121.650
Stinking Lake, 3 miles west of, 15 feet north of road, top of ridge, in top of sandstone boulder; aluminum tablet stamped "96"	7,138.001
Stinking Lake, 5 miles west of, 10 feet west of road, on top of ridge; nail in east root of 18-inch cedar tree, marked "B. M.-98"	7,171.56
Stinking Lake, 6 miles west of, 75 feet north of road, on side of ridge, in top of granite boulder; aluminum tablet stamped "99½"	7,162.300
Stinking Lake, 7 miles southwest of, 10 feet east of road; nail in east root of 12-inch pine tree, marked "B. M. 100"	7,231.95
Stinking Lake, 9 miles southwest of, 60 feet west of road, at southeast end of ridge, in base of large sandstone boulder; aluminum tablet stamped "102"	7,118.630
Stinking Lake, 12 miles southwest of, 12 feet west of road, 100 feet west of corral, 100 feet north of ridge, in top of sandstone outcrop; aluminum tablet stamped "106"	7,003.787
Stinking Lake, 3.1 miles west of, 100 feet north of road, on side of hill, in top of sandstone boulder; aluminum tablet stamped "119"	7,202.796

From Elvado north to Lumberton, thence northwest to Dulce, thence south to Elvado.

Gurule ranch, 1.2 miles north of, 9 feet west of road, 15 feet south of bridge over arroyo, on top of small hill; iron post stamped "22"	6,919.729
Gurule ranch, 2.8 miles north of, 10 feet north of road at summit, 5 feet south of blazed pinon tree, 0.8 mile west of road forks; top of stake	7,043.89
Gurule ranch, 4.4 miles north of, 12 feet west of road, 10 feet east of arroyo, 1 mile north of railroad; iron post stamped "25"	7,051.802
Gurule ranch, 7.5 miles north of, 42 feet east of railroad track, 10 feet east of road; iron post	7,289.172
Gurule ranch, 10.7 miles north of, at summit, 10 feet west of road, in east root of 22-inch pine stump; nail	7,460.76
Gurule ranch, 11.3 miles north of, 12 feet east of road, 21 feet south of scrub white oaks, 100 feet west of black butte; iron post	7,544.073
Gurule ranch, 13.3 miles north of, 6 feet east of road on side of small ridge, in west root of 22-inch dead pine tree; nail	7,626.82
Horse Lake, 500 feet south of, in road forks; iron post stamped "35"	7,685.833
Horse Lake; surface of water, Aug. 11, 1906	7,670.26
Horse Lake, 2.4 miles north of, at summit, 12 feet east of road; iron post stamped "38"	7,632.659
Horse Lake, 3.4 miles north of, 30 feet east of road, on side of ridge, in west root of 22-inch pine tree; nail	7,599.53
Horse Lake, 4.4 miles north of, 50 feet east of road, 300 feet east of log cabin, 50 feet west of corral, in east root of 22-inch pine tree; nail	7,524.54
Horse Lake, 5.3 miles north of, in road forks, at summit; iron post stamped "41"	7,700.876
Monero, 66 feet west of Denver & Rio Grande R. R. track, 15 feet east of Rio Arriba Coal Co.'s store, 6 feet northeast of steps; iron post stamped "44"	7,247.766
Monero, in front of station; top of rail	7,245.93
Monero, 3.4 miles northwest of, 0.1 mile south of milepost D-367, opposite Amargo signboard, 75 feet west of track, in line of telegraph poles; iron post stamped "48"	7,000.955
Amargo, in front of signboard; top of rail	7,004.10

	Feet.
Lumberton, in front of station; top of rail.....	6,850.05
Lumberton, at northwest corner of Archuleta Mercantile Co.'s store; iron post stamped "51".....	6,848.002
Lumberton, 50 feet north of station; United States Geological Survey astronomical station; bronze tablet stamped "L 36-55.48, L 106-56-15, 1897".....	6,850.817
Lumberton, 0.4 mile west of, United States Geological Survey triangulation station west base, 60 feet south of track; iron post.....	6,841.611
Dulce, 3.5 miles southeast of, at summit, 10 feet east of road, 30 feet northwest of pine tree; iron post stamped "59".....	7,199.790
Dulce, 4.5 miles southeast of, 6 feet east of road, in flat draw, in top of 10-inch pine stump; nail.....	7,206.09
Dulce, 6.7 miles southeast of, 30 feet east of road, 60 feet east of Burns-Biggs Lumber Co.'s track, on side of knoll; iron post.....	7,278.777
Dulce, 10 miles southeast of, 50 feet east of track, 25 feet east of trail, on side of ridge; iron post stamped "65".....	7,604.712
Dulce, 12.9 miles southeast of, 30 feet west of track, at summit; iron post stamped "68".....	7,672.846
Dulce, 16 miles southeast of, 50 feet east of track, on side of ridge; iron post stamped "71".....	7,578.600
Dulce, 19.2 miles southeast of, 50 feet east of track, 1,000 feet south of sandstone bluff, on grade; iron post stamped "74".....	7,263.677
Dulce, 23.4 miles south of, 50 feet east of track, 10 feet south of arroyo at summit; iron post stamped "78".....	7,150.705
Horse Lake Junction, 75 feet west of track, 30 feet east of road; iron post stamped "82".....	6,990.554

From Lumberton north to Edith.

Edith, northwest corner of New Mexico Lumber Co.'s commissary building, in top of sandstone post; aluminum tablet stamped "314".....	7,038.356
Edith, 3.8 miles south of, in road forks, 75 feet west of track, in top of sandstone post; tablet stamped "317".....	6,967.314

DULCE QUADRANGLE.

[Latitude 36° 30'-37°; longitude 107°-107° 30'.]

From Dulce northwest along railroad to Colorado line.

Dulce, at northwest corner of Jicarilla Apache Indian agency; iron post...	6,769.986
Navajo River; surface of water, July 19, 1907.....	6,571
Navajo, pump house, 150 feet north of track, 50 feet north of road; 125 feet northwest of signboard "Navajo," in sandstone boulder; aluminum tablet.....	6,583.709
Milepost 384, 250 feet southeast of, 30 feet north of track, in sandstone boulder; aluminum tablet.....	6,415.715

From point 4 miles west of Stinking Lakes west along road to point 40 miles west of Stinking Lakes.

Stinking Lakes, 5 miles west of, 100 feet south of road, in north root of 20-inch pine tree; nail marked "B. M. 121".....	7,304.44
Stinking Lakes, 5.8 miles west of, 75 feet north of road, in top of sandstone boulder; aluminum tablet stamped "122".....	7,338.434
Stinking Lakes, 7 miles west of, 10 feet south of road, near top of Continental Divide, in root of 36-inch pine tree; nail marked "B. M. 123"....	7,482.67

	Feet.
Stinking Lakes, 9 miles west of, 15 feet south of road, on side of hill, in top of sandstone outcrop; aluminum tablet stamped "125"	7, 249. 425
Stinking Lakes, 12 miles west of, 15 feet south of road, on top of ridge, 30 feet northeast of dead pine tree, in top of sandstone outcrop; aluminum tablet stamped "128"	7, 133. 537
Stinking Lakes, 15.8 miles west of, 18 feet north of road, in gap, in top of sandstone outcrop; aluminum tablet stamped "131"	7, 063. 647
Stinking Lakes, 17.8 miles west of, 30 feet north of road, 0.5 mile west of top of divide, in root of 16-inch pine tree; nail marked "B. M. 133"	7, 267. 99
Stinking Lakes, 18.8 miles west of, 75 feet north of road, on side of hill, 1,000 feet west of road forks, in top of sandstone boulder; aluminum tablet stamped "134"	7, 198. 970
Stinking Lakes, 19.9 miles west of, 30 feet south of road; in base of 16-inch pine tree; spike marked "B. M. 135"	7, 239. 24
Stinking Lakes, 20.2 miles west of, 15 feet south of road, 200 feet west of road forks, 30 feet northeast of blazed pine tree, in top of sandstone outcrop; aluminum tablet stamped "136"	7, 225. 599
Stinking Lakes, 21.2 miles west of, 15 feet south of road, in south root of 24-inch pine tree; nail marked "137"	7, 222. 90
Stinking Lakes, 23.3 miles west of, 10 feet east of road, on top of divide, in west root of 16-inch pine tree; nail marked "B. M. 139"	7, 516. 25
Stinking Lakes, 24.4 miles west of, 10 feet east of road, on side of ridge, in top of large sandstone outcrop; aluminum tablet stamped "140"	7, 497. 976
Stinking Lakes, 27.6 miles west of, 15 feet north of ridge, 30 feet north of arroyo, in Munyon's canyon, in top of sandstone boulder; aluminum tablet stamped "143"	6, 783. 654
Stinking Lakes, 30.9 miles west of, 10 feet north of road, on side of ridge, in top of large sandstone outcrop; aluminum tablet stamped "146"	6, 781. 731
Stinking Lakes, 34.6 miles west of, 30 feet north of road, 80 feet north of small lake, in top of sandstone outcrop; aluminum tablet stamped "150"	6, 480. 042
Stinking Lakes, 38.2 miles west of, 15 feet south of road, on toe of ridge, in top of sandstone boulder; aluminum tablet stamped "153"	6, 349. 256
Stinking Lakes, 40.5 miles west of, 30 feet south of road, at base of sandstone bluff, in top of sandstone outcrop; aluminum tablet stamped "156"	6, 273. 142

TURLEY QUADRANGLE.

[Latitude $36^{\circ} 30' - 37^{\circ}$; longitude $107^{\circ} - 107^{\circ} 30'$.]

From point 44 miles west of Stinking Lakes northwest to Archulite ranch, thence southwest to point 7 miles southwest of Blanco, thence north via Aztec to Colorado line.

Stinking Lakes, 43.7 miles west of, 10 feet north of road forks at base of sandstone cliff, in top of sandstone boulder; aluminum tablet stamped "159"	6, 219. 269
Lake Gomez, 90 feet east of, 50 feet east of road, 90 feet west of corral, 150 feet west of hut, in top of sandstone boulder; aluminum tablet stamped "162"	6, 115. 713
NOTE.—Arbitrary adjustment of 3 feet was placed here on account of color discrepancy in rod reading.	
Lake Gomez, 3 miles west of, 75 feet north of road, at base of sandstone cliff, where road comes out of arroyo, in top of sandstone boulder; aluminum tablet stamped "164"	5, 967. 409
Lake Gomez, 6 miles west of, 10 feet south of road, on top of ridge, in top of sandstone outcrop; aluminum tablet stamped "167"	5, 849. 064
Archulite ranch, 150 feet east of house, 200 feet south of corral, on small knoll, in top of sandstone outcrop; aluminum tablet stamped "169"	5, 668. 469

Archulite ranch, 2.9 miles west of, top of mesa, in top of sandstone outcrop; aluminum tablet stamped "171".....	5,716.248
Adobe house, 600 feet west of, in road forks, in top of sandstone outcrop; aluminum tablet stamped "174".....	5,632.194
Blanco, at southeast corner of F. T. Amiot's store, in top of sandstone outcrop; aluminum tablet stamped "178".....	5,561.800
Blanco, 3.1 miles south of, 20 feet north of road, on west bank of arroyo, in top of large sandstone boulder; aluminum tablet stamped "181".....	5,552.824
Blanco, 6.9 miles southwest of, in crossroads, 100 feet south of old foundation, in top of sandstone outcrop; aluminum tablet stamped "184".....	5,511.273
Aztec, 5.5 miles south of, 10 feet north of road, 75 feet east of arroyo, in top of sandstone outcrop; aluminum tablet stamped "188".....	5,699.334
Aztec, 5.8 miles northeast of, in road forks, 100 feet west of milepost D-476; iron post stamped "199".....	5,787.739
Aztec, 8.8 miles northeast of, 50 feet west of milepost D-473, in line of telegraph poles; iron post stamped "202".....	5,832.433
Aztec, 11.9 miles northeast of, 6 feet south of fourth telegraph pole north of milepost D-470; aluminum tablet stamped "205".....	5,898.005

From Colorado-New Mexico line near La Boca, Colo., south to Archulite ranch.

La Boca, 2.6 miles south of, in river bottom, 15 feet east of road, in base of dead cottonwood tree; spike marked "B. M. 337".....	6,091.35
Louis F. Welmar ranch, in road forks; iron post stamped "338".....	6,063.296
Welmar ranch, 3.2 miles south of, 10 feet west of road, in base of cottonwood tree; spike marked "B. M. 340".....	5,982.22
Welmar ranch, 4.4 miles south of, 15 feet west of road, in base of cottonwood tree; spike marked "B. M. 341".....	5,950.06
Welmar ranch, 6.3 miles south of, 20 feet east of road; iron post stamped "343".....	5,902.078
Lopez ranch, 1.7 miles south of, 10 feet west of road, in top of south point of large sandstone boulder; aluminum tablet stamped "346".....	5,821.995
Pine River and San Juan River, forks of, 4 feet north of Walter Von Budenbrock ranch house; iron post stamped "348".....	5,770.455
Von Buddenbrock ranch, 3.2 miles southwest of, 20 feet north of road, at base of sandstone bluff, opposite fence corner, in top of sandstone boulder; aluminum tablet stamped "350".....	5,738.186
Von Buddenbrock ranch, 4.8 miles west of, 10 feet west of road, near top of ridge, in small pinon tree; 8-penny nail marked "B. M. 351".....	5,781.36
Von Buddenbrock ranch, 6.1 miles west of, at base of hill at fence corner, in top of large sandstone boulder; aluminum tablet stamped "352".....	5,725.435

FLORA VISTA QUADRANGLE.

[Latitude 36° 30'-37°; longitude 108°-108° 30'.]

From point 2.2 miles south of Aztec north via Aztec to point 3.4 miles northeast of Aztec.

Aztec, 2.2 miles south of, 75 feet east of road forks, on side of ridge, in top of sandstone outcrop; aluminum tablet stamped "191".....	5,757.617
Blanco, 15.7 miles west of, 60 feet west of track, near road forks, in ground at base of telephone pole; hub marked "B. M. 5643.84" (railroad bench mark).....	5,635.67
Aztec, northwest corner of courthouse; iron post stamped "193".....	5,648.539
Aztec, 1.9 miles north of, on east guardrail of bridge, 500 feet north of milepost "D-480"; top of south bolthead, marked "B. M. 195".....	5,700.00
Aztec, 3.4 miles northeast of, in line of telegraph poles, 0.4 mile north of milepost D-479; iron post stamped "196".....	5,754.262

From point 7 miles southwest of Blanco west to Farmington, thence northeast to Aztec.

Bloomfield, 1 mile west of, 15 feet north of road, 50 feet north of fence corner; iron post stamped "358".....	Feet.
Bloomfield, 5.3 miles west of, 10 feet north of road, on top of ridge; iron post stamped "362".....	5, 427. 892
Farmington, 5.1 miles east of, 15 feet north of road, at base of ridge; iron post stamped "365".....	5, 576. 325
Farmington, 2.5 miles east of, in road forks, at fence corner; iron post stamped "367".....	5, 318. 738
Farmington, 0.4 mile east of, 20 feet south of railway, in base of cottonwood stump; 10-penny nail marked "5286.83" (railroad bench mark).....	5, 372. 600
Farmington, 12 feet north of city hall; iron post stamped "370".....	5, 309. 788
Farmington, in cement doorsill of the Pierce Mercantile Co.'s store; aluminum tablet stamped "371".....	5, 310. 714
Farmington, 3.1 miles north of, 20 feet west of milepost D-493, 15 feet east of wagon road; iron post stamped "374".....	5, 364. 905
Farmington, 4.1 miles north of, 10 feet west of milepost D-492, in base of telegraph pole; spike marked "5385.80" (railroad bench mark).....	5, 376. 23
Farmington, 6.1 miles north of, 75 feet west of wagon road, 50 feet east of railroad at milepost D-490; iron post stamped "377".....	5, 458. 145
Flora Vista, at northeast corner of Mullarky's general store; iron post stamped "380".....	5, 507. 899
Flora Vista, 1.5 miles north of, at milepost D-486, in base of telegraph pole; spike marked "5525.18" (railroad bench mark).....	5, 515. 50
Flora Vista, 3.5 miles north of, 15 feet west of wagon road, 50 feet east of railroad track, at fence corner; iron post stamped "384".....	5, 591. 077

From point 3 miles west of Bloomfield south to Simpson's trading station, thence southwest to triangulation station, thence north to Farmington.

Bloomfield, 3 miles west by 3 miles south of, 20 feet west of road, on top of ridge; iron post stamped "387".....	5, 494. 840
Bloomfield, 3 miles west by 7 miles south of, 15 feet east of road, on top of ridge; iron post stamped "391".....	5, 832. 670
Bloomfield, 3 miles west by 10 miles south of, 15 feet east of road, top of small ridge; iron post stamped "394".....	5, 771. 390
Simpson's trading post, 20 feet southeast of store; iron post stamped "396".....	5, 735. 288
Simpson's, 3.2 miles southwest of, 1,000 feet northeast of road forks, 20 feet north of road; iron post stamped "399".....	5, 986. 438
Simpson's 6.9 miles south of, 20 feet west of road, on small ridge; iron post stamped "402".....	6, 268. 450
Farmington, 21.53 miles south of, 20 feet east of road, at foot of large sand hill; iron post stamped "408".....	6, 268. 882
Azimuth triangulation station, 18.43 miles southwest of Farmington, 0.6 mile east of Liznizsin road, in top of sandstone boulder; aluminum tablet stamped "411".....	6, 219. 202
Farmington, 14.8 miles southwest of, 20 feet east of road, on small ridge; iron post stamped "415".....	5, 963. 522
Farmington, 11.6 miles southwest of, 20 feet east of road; iron post stamped "418".....	5, 790. 879
Dune triangulation station, 8.2 miles southwest of Farmington, 1 mile southeast of forks of Simpson and Gallup roads, 70 feet south of Simpson road; iron post stamped "421".....	6, 079. 697
Farmington, 7.2 miles southwest of, in forks of Simpson and Gallup roads; iron post stamped "422".....	5, 983. 542

Farmington, 6 miles southwest of, top of long hill, 10 feet south of road, in top of rim rock; aluminum tablet stamped "423"	Feet.
Farmington, 2.7 miles west of, at road forks, 30 feet west of fence; iron post stamped "426"	5, 764. 750
Farmington, 2.5 miles west of, 60 feet south of road, near forks of La Plata and Gallup roads, in stump of cottonwood tree; spike marked "5265.06" (old railroad bench mark)	5, 245. 098
Farmington, 9.9 miles south of Simpson's, 150 feet north of road, on edge of high mesa; iron post stamped "405"	5, 269. 11

STONY BUTTE QUADRANGLE.

[Latitude 36°-36° 30'; longitude 108°-108° 30'.]

Bench mark near Simpson triangulation station (part of circuit—Bloomfield to Farmington).

Simpson triangulation station, 9.9 miles south of Simpson's, 150 feet north of road, on edge of high mesa; iron post stamped "405"

6, 583. 6

Koehler, Raton, Springer, and Ute Creek quadrangles.

COLFAX COUNTY.

The elevations in the following list were determined by primary leveling extended from Thatcher, Colo. They accord with the 1912 adjustment and with the elevations in Bulletin 486 corrected by the addition of 0.56 foot. Orthometric and rod corrections have been applied.

The leveling was done in Raton quadrangle in 1911 by C. P. Gross and in 1912 by C. C. Holder, and in Brilliant and Koehler quadrangles in 1912 and 1914 by C. C. Holder.

KOEHLER QUADRANGLE. (The northeast quarter of this quadrangle is Brilliant quadrangle, the northwest quarter is Catskill, the southwest quarter is Dawson, and the southeast quarter is Koehler 15' quadrangle.)

[Latitude 36° 30'-37°; longitude 104° 30'-105°.]

From Dillon west up Red River, thence northwest up Jones Canyon, thence east and southeast down Dillon Creek to point 6 miles northwest of Raton.

Dillon, 3.4 miles west of, near pile of rocks on west end of knoll, 450 feet south of road, in sandstone 24 by 18 by 10 inches; aluminum tablet stamped "6597"	Feet.
Dillon, 3.7 miles west of; spike in floor of bridge, marked "6600"	6, 597. 514
Dillon, 5.2 miles west of, 6 feet south of road, 200 feet south of Red River, 1,200 feet east of deserted cabin, at mouth of Coal Canyon, 550 feet east of corner of Tps. 30 and 31, Rs. 22 and 23, in solid sandstone; aluminum tablet stamped "6641"	6, 600. 70
Dillon, 6.2 miles west of, 6 feet west of road; on top of sandstone boulder; marked "6690"	6, 641. 633
Dillon, 6.9 miles west of, 20 feet west of Red River, 300 feet east of Bartlene's cabin; copper nail in root of cottonwood tree, marked "6717"	6, 690. 72
Dillon, 8.1 miles west of, 100 feet south of Red River; spike in north gate post at ground, marked "6794"	6, 718. 40
Dillon, 8.1 miles west of, 200 feet south of Red River, in sandstone boulder; bronze tablet stamped "6801"	6, 795. 12
Dillon, 9.2 miles west of, 200 feet northeast of mouth of Potatoe Canyon, 60 feet north of road; chiseled square on sandstone boulder, marked "6859"	6, 801. 391

Dillon, 10.2 miles west of, 300 feet southwest of road, 350 feet southwest of Red River, 5 feet above ground, in sandstone boulder; aluminum tablet stamped "6915"	Feet.
	6, 915. 531
Dillon, 10.8 miles west of, 10 feet south of road, 200 feet north of Red River, drain from northwest; spike in root of 14-inch cottonwood tree, marked "6949"	6, 950. 16
Jones Creek, 0.8 mile above mouth, 6 feet north of Jones Creek, canyon from north; highest point on sandstone boulder, marked "7045"	7, 046. 59
Jones Creek, 2.4 miles above mouth, 200 feet northeast of creek at mouth of canyon, 200 feet south of coal mine; copper nail in post at ground, marked "7220"	7, 221. 36
Jones Creek, 3.7 miles above mouth, 400 feet northeast of mouth of Piper Canyon, 800 feet south of mouth of Jenkins Canyon, 100 feet east of old logging road, 70 feet east of creek, in sandstone firmly set in ground, level with ground; aluminum tablet stamped "7349"	7, 349. 809
Jones Creek, 5.2 miles above mouth, 10 feet north of Jones Creek, 20 feet north of old logging road; highest point on sandstone, marked "7597"	7, 599. 47
Jones Creek, 5.7 miles above mouth, 100 feet west of fork of canyon, 80 feet north of old logging road; chiseled square on highest point of sandstone boulder, marked "7693"	7, 694. 69
Brilliant, 4.9 miles northwest of, 60 feet east of fork of roads, 5 feet south of east fork, at top of ridge, in sandstone rock; aluminum tablet stamped "7888"	7, 889. 281
Brilliant, 4.2 miles northwest of, at road forks, roads west and south, in small canyon; chiseled square on highest point of solid sandstone rock, level with ground, marked "7774"	7, 775. 40
Brilliant, 3.6 miles northwest of, 5 feet north of road forks, roads north and west, 1,000 feet north of Smith's house; in pile of rock; highest point on sandstone rock 24 by 18 by 6 inches, marked "7662"	7, 662. 79
Brilliant, 3.4 miles northwest of, 40 feet east of Smith's barn, 10 feet east of road; copper nail in root of 18-inch pine tree, at ground, marked "7639"	7, 640. 39
Brilliant, 3.1 miles northwest of, 40 feet south of creek; copper nail in north gate post, at ground, marked "7516"	7, 517. 39
Brilliant, 2.1 miles northwest of, 80 feet north of creek; copper nail in north gate post at ground, marked "7417"	7, 418. 22
Brilliant, 1.7 miles northwest of, 5 feet west of road, 400 feet southeast of old sawmill, 60 feet east of creek; highest point on sandstone boulder, marked "7366"	7, 367. 37
Brilliant, 1 mile north of, 500 feet south of fork of canyon, 20 feet south of creek, 5 feet west of road, in top of sandstone boulder; aluminum tablet stamped "7294"	7, 295. 064
North Brilliant, spike in floor of bridge, marked "7187"	7, 188. 31
Brilliant, 0.2 mile south of, 60 feet east of creek, 5 feet west of road; highest point on sandstone boulder, marked "7118"	7, 120. 29
Brilliant, 1.2 miles southeast of, 20 feet east of road, 50 feet east of railroad track; highest point on sandstone boulder, marked "7065"	7, 066. 81
Brilliant, 1.6 miles southeast of, 50 feet south of road; top of bolt in north end of railroad bridge 15, marked "7021"	7, 023. 09
Brilliant, 2.3 miles southeast of, top of south rail at road crossing	6, 972. 58
Brilliant, 3.9 miles southeast of, at mouth of Coal Canyon, 300 feet southeast of deserted house, 40 feet east of railroad, 70 feet east of road, 100 feet east of Dillon Creek, 60 feet west of Coal Creek, in northwest corner of old stone wall, 3 inches above ground; aluminum tablet stamped "6829"	6, 830. 950

Brilliant, 5.1 miles southeast of, 60 feet east of Coal Creek, at mouth of canyon from west, in Coal Canyon; on top of sandstone boulder, marked "6971"..... 6, 972. 88

Brilliant, 5.7 miles southeast of, 80 feet east of creek, 100 feet south of canyon from west; top of rock 3 inches above ground..... 7, 050. 28

Brilliant, 6.4 miles southeast of, 5 feet west of Scenic Highway, hub cut in pine tree, marked "U. S. 7456"..... 7, 457. 67

From point 3.1 miles west of Clifton House southwest to point 2.8 miles southwest of Preston.

Preston, 2.8 miles northeast of, north side of track; top of bolt on west end of railroad bridge 47, marked "6482"..... 6, 482. 95

Preston, 1.5 miles northeast of, on small ridge 0.5 mile northeast of Preston, at head of second drain east of Preston; top of sandstone boulder, marked "6612"..... 6, 612. 91

Preston, 0.8 mile northeast of, top of ridge; spike in root of lone pine tree, marked "6598"..... 6, 599. 02

Preston, 60 feet west of station on St. Louis, Rocky Mountain & Pacific Ry. track; spike in crossing sign, marked "6484"..... 6, 484. 35

Preston, opposite 1-mile signpost west of Preston, top of east rail of St. Louis, Rocky Mountain & Pacific Ry., marked "6345"..... 6, 445. 38

Preston, 1.9 miles southwest of, 50 feet north of railroad track; in south gatepost 3 inches above ground; spike marked "6407"..... 6, 407. 52

From Koehler north along Crow Creek east to mouth of Jones Canyon.

Koehler, 1.9 miles northwest of, 30 feet west of Crow Creek, 20 feet east of road; point on sandstone boulder, marked "6534"..... 6, 534. 65

Koehler, 2.4 miles northwest of, 60 feet south of gate; top of rock, marked "6569"..... 6, 569. 31

Koehler, 2.9 miles northwest of, 250 feet west of Crow Creek, opposite large canyon from east, 60 feet west of road, in sandstone boulder; bronze tablet..... 6, 609. 524

Koehler, 3.4 miles northwest of, 100 feet north of road, 150 feet north of Crow Creek; top of big boulder, marked "6638"..... 6, 638. 26

Koehler, 4.8 miles northwest of, 50 feet north of road, 20 feet south of Crow Creek, 40 feet south of cut bank; top of sandstone boulder, marked "6747"..... 6, 748. 61

Koehler, 5.2 miles northwest of, 120 feet north of road, 30 feet south of Crow Creek, 400 feet east of fork of canyon; top of sandstone boulder, marked "6781"..... 6, 781. 64

Koehler, 5.7 miles northwest of, 60 feet east of Crow Creek, 100 feet south of dim road; top of rock, marked "6824"..... 6, 824. 12

Koehler, 6.1 miles northwest of, 150 feet north of Crow Creek, opposite mouth of canyon from south, on end of ridge from north, 5 feet south of old road, in solid sandstone; bronze tablet..... 6, 903. 792

Koehler, 7.1 miles northwest of, 12 feet above Crow Creek and 20 feet north of it; top of solid sandstone ledge, marked "6983"..... 6, 983. 65

Koehler, 7.8 miles northwest of, 10 feet north of road, 80 feet east of Crow Creek; top of sandstone boulder, marked "7056"..... 7, 056. 46

Koehler, 9.1 miles northwest of, 10 feet east of Crow Creek; 20 feet west of road, 2 feet above ground; top of sandstone rock, marked "7187"..... 7, 187. 15

Koehler, 9.1 miles northwest of, 20 feet east of Crow Creek, 30 feet east of road, in sandstone boulder; bronze tablet stamped "7192"..... 7, 192. 059

Koehler, 9.4 miles northwest of, 60 feet east of dim road, 100 feet east of Crow Creek; top of solid rock, marked "7220".....	Feet.
Koehler, 10.9 miles northwest of, top of southwest corner stone of cabin, marked "7372".....	7,220.58
Koehler, 12 miles northwest of, 100 feet west of Crow Creek, 40 feet west of dim road, 2 feet above ground, in top of sandstone boulder; bronze tablet.....	7,372.45
Koehler, 12 miles northwest of, 100 feet west of Crow Creek, 40 feet west of dim road, 2 feet above ground; top of sandstone boulder, marked "7495".....	7,495.570
Koehler, 12.9 miles northwest of, 50 feet east of Crow Creek, dim road in creek bed; top of boulder, marked "7592".....	7,495.74
Koehler, 13.8 miles northwest of, at spring house, 100 feet northeast of Doyle's ranch house; top of sandstone boulder, marked "7699".....	7,592.53
Koehler, 15 miles northwest of, north side of canyon; point chiseled on sandstone boulder, marked "7955".....	7,699.98
Koehler, 15.3 miles northwest of, on west slope of ridge, 160 feet south of temporary bench mark boulder, in solid sandstone, level with ground; bronze tablet, stamped "8060".....	7,955.31
Koehler, 15.3 miles northwest of, on ridge, 6 inches above ground; top of sandstone boulder, marked "8066".....	8,059.945
Koehler, 16.9 miles northwest of, on highest point on divide between Red River and Crow Creek, in sandstone boulder; aluminum tablet stamped "8068".....	8,066.95
Dillon, 18.8 miles west of, 150 feet west of logging road; highest point on sandstone boulder, marked "8008".....	8,068.998
Dillon, 17.7 miles west of, 100 feet west of Sheep Springs Creek, 80 feet west of old logging road, 200 feet north of fork of canyon, in pile of rocks; high- est point on sandstone boulder, marked "7678".....	8,009.04
Dillon, 17.3 miles northwest of, 250 feet south of creek; spike in 12-inch pine tree, marked "7637," at ground.....	7,678.92
Dillon, 17.1 miles west of, 60 feet south of creek, 100 feet north of old log- ging road; in root of 10-inch pine tree, copper nail marked "7567".....	7,637.64
Dillon, 16.6 miles west of, 30 feet east of old road, 60 feet west of mouth of canyon from east; highest point on solid sandstone, marked "7441".....	7,568.44
Dillon, 14.9 miles west of, 30 feet northeast of old well, 100 feet south of deserted cabin, 200 feet northeast of junction of Sheep Springs Canyon with Red River; highest point on sandstone; aluminum tablet stamped "7206".....	7,441.86
Dillon, 14.5 miles west of, 30 feet south of Red River, 80 feet south of road; copper nail in root of cottonwood tree, marked "7177".....	7,206.285
Dillon, 13.2 miles west of, 80 feet south of Red River, 150 feet south of road, 2.5 feet above ground; in sandstone boulder; aluminum tablet stamped "7095".....	7,177.81
Dillon, 12.9 miles west of, 40 feet north of road, 200 feet north of Red River; copper nail in corner fence post at ground, marked "7080".....	7,096.138
Dillon, 12.2 miles west of, 6 feet north of road, 60 feet north of Red River; copper nail in root of 20-inch cottonwood tree, marked "7029".....	7,081.20
Dillon, 11.4 miles northwest of, 190 feet south of Red River, about 400 feet southwest of Jones Canyon, on point of hill 60 feet west of road, in solid rock; bronze tablet stamped "6998".....	7,030.11
Dillon, 11.4 miles west of, 40 feet south of Red River, 250 feet southwest of Jones Canyon; spike in south gatepost at ground, marked "6988".....	6,998.490
	6,988.81

From point 2.8 miles southwest of Preston west to Koehler.

Preston, 2.8 miles west of, 10 feet north of road, 600 feet north of St. Louis, Rocky Mountain & Pacific Ry., 2 feet east of mound of stone, in solid sandstone level with ground; aluminum tablet stamped "6386".....	6,386.867
Koehler, 3.4 miles east of, 500 feet east of road crossing, west end of bridge 52 B on St. Louis, Rocky Mountain & Pacific Ry., marked "6368"; top of bolt.....	6,368.11
Koehler, 2.1 miles east of, in center of road crossing, roads east and west and northwest and southeast; turning point marked "6441".....	6,441.69
Koehler, 1.6 miles east of, 30 feet west of road, 100 feet west of fence corner; top of sandstone, marked "6397".....	6,397.94
Koehler, 1.4 miles east of, 40 feet east of road, 60 feet west of wire fence; copper nail in root of cedar stump, marked "6392".....	6,392.55
Koehler, 0.9 mile southeast of, 350 feet east of road, on west slope; spike in root of lone pine tree, marked "6401".....	6,401.95
Koehler, 0.5 mile south of, south end of bridge OA across Crow Creek, east side of track; top of bolt, marked "6381".....	6,380.42
Koehler, 0.2 mile south of, 15 feet west of road forks; turning point on rail of switch to pump house, marked "6393".....	6,394.00
Koehler, 0.2 mile east of, 150 feet south of C. S. ranch house, 40 feet east of road leading up Crow Creek, in solid sandstone 10 inches above ground; aluminum tablet stamped "6415".....	6,415.261

From bench mark 15 miles northwest of Dillon northwest up Red River to point 9.3 miles north of Vermejo Park.

Dillon, 17.6 miles northwest of, 60 feet south of road, 60 feet north of Red River, in root of 20-inch cottonwood tree; copper nail marked "7256" ..	7,255.81
Dillon, 18.3 miles northwest of, 100 feet north of Red River, 3 feet north of road; point on solid sandstone, marked "7312".....	7,311.81
Dillon, 19.1 miles northwest of, 250 feet south of road at old log railroad cut, 200 feet north of canyon from south, 150 feet north of Red River; top of rock, marked "7368".....	7,367.96
Dillon, 19.2 miles northwest of, 600 feet north of mouth of canyon from south, 300 feet north of Red River on top of low ridge, 3 feet north of road, in solid sandstone, set level with ground; bronze tablet stamped "7395" ..	7,394.792
Dillon, 19.9 miles northwest of, 2,000 feet east of old cabin, 140 feet north of Red River, 30 feet south of road; top of rock boulder, marked "7422" ..	7,421.80
Dillon, 20.7 miles northwest of, 100 feet north of Red River, east end of old logging road, 4 feet north of road; point on solid rock, marked "7479" ..	7,479.36
Dillon, 21.7 miles northwest of, 150 feet south of a good spring, 100 feet north of road crossing of Red River, in sandstone boulder; bronze tablet stamped "7558" ..	7,557.737
Dillon, 22.4 miles northwest of, 25 feet east of road, 60 feet east of Red River, in root of 20-inch pine tree; copper nail marked "7603" ..	7,603.23
Dillon, 23.2 miles northwest of, 100 feet north of Red River, 50 feet east of canyon from north, 50 feet east of canyon, 10 feet north of road; top of sandstone boulder, marked "7652" ..	7,652.45
Dillon, 24.2 miles northwest of, in south gate post; railroad spike marked "7726" ..	7,726.02
Dillon, 24.6 miles northwest of, 200 feet east of road crossing creek from south, 10 feet south of road, in root of pine tree; copper nail marked "7781" ..	7,780.76
Dillon, 24.6 miles northwest of, 200 feet south of Red River, 100 feet east of old cabin, 250 feet southwest of old charcoal kilns, 120 feet north of road, 10 feet north of creek, in solid sandstone; bronze tablet stamped "7775" ..	7,775.051

Dillon, 25 miles northwest of, 150 feet south of Red River, 20 feet south of road, in root of 24-inch pine tree; copper nail marked "7817".....	Feet.	7, 817. 52
Dillon, 25.8 miles northwest of, in south gate post; railroad spike marked "7835".....	7, 834. 88	
Dillon, 26.2 miles northwest of, 1,000 feet east of Katskill, in south gate post; railroad spike marked "7871".....	7, 871. 26	
Dillon, 27.1 miles northwest of, 5 feet north of road; top of solid rock, marked "7901".....	7, 901. 54	
Dillon, 27.6 miles northwest of, 30 feet south of road, in root of 14-inch pine tree; copper nail marked "7936".....	7, 936. 54	
Dillon, 27.7 miles northwest of, 20 feet north of road, 30 feet south of wire fence, 1 foot south of monument of stone, in solid sandstone, level with ground; bronze tablet stamped "7939".....	7, 939. 145	
Dillon, 28.5 miles northwest of, 200 feet south of Red River, 20 feet south of road, in root of 14-inch pine tree; copper nail marked "7972".....	7, 972. 31	
Dillon, 29 miles northwest of, 250 feet east of charcoal kilns, 100 feet south of road, in root of 30-inch pine tree; copper nail marked "7988".....	7, 988. 20	
Dillon, 29.7 miles northwest of, 100 feet east of Dawson's ranch house, 20 feet east of road; top of sandstone boulder, painted "8013".....	8, 013. 09	
Dillon, 30.6 miles northwest of, 150 feet north of Red River, 100 feet north of road, in sandstone boulder; bronze tablet stamped "8053".....	8, 053. 471	
Dillon, 31.7 miles northwest of, 100 feet north of road, 200 feet south of Red River; in root of 20-inch pine tree; copper nail.....	8, 104. 66	
Dillon, 32.5 miles northwest of, 300 feet north of Red River, 15 feet north of road; top of sandstone boulder, marked "8136".....	8, 136. 02	
Dillon, 33.7 miles northwest of, $\frac{1}{4}$ mile east of a good spring, 300 feet east of old double log cabins, 250 feet north of Red River, 100 feet north of road, in sandstone boulder; bronze tablet stamped "8223".....	8, 222. 855	
Dillon, 34.7 miles northwest of, 150 feet south of Red River, in root of 20-inch pine tree at gate; copper nail marked "8300".....	8, 300. 37	
Dillon, 36 miles northwest of, 300 feet north of Red River, 50 feet north of road, in root of 24-inch pine tree; copper nail marked "8399".....	8, 399. 69	
Dillon, 36.9 miles northwest of, opposite mouth of canyon, 80 feet north of Red River, 10 feet north of road, in sandstone boulder; bronze tablet stamped "8484".....	8, 483. 894	
Dillon, 38.3 miles northwest of, 100 feet north of mouth of canyon from south, 50 feet north of Red River, 5 feet south of road; top of sandstone boulder, marked "8617".....	8, 617. 59	
Dillon, 39.1 miles northwest of, 250 feet north of Red River, in south gate post; railroad spike marked "8712".....	8, 712. 19	
Dillon, 40.4 miles northwest of, 200 feet west of a spring, 150 feet west of road, 50 feet west of Red River, 1 foot east of monument of stone, in sandstone ledge; bronze tablet stamped "8816".....	8, 816. 607	
Boundary monument 221, Colorado and New Mexico boundary, 20 feet north of Red River; iron post marked "221 M" and stamped by level-man "8952".....	8, 952. 987	

From Koehler southwest along St. Louis, Rocky Mountain & Pacific Ry. and highway to Colfax, thence northwest along El Paso & Southwestern R. R. and highway to Vermejo Park.

Koehler, 0.2 mile east of, 150 feet south of C. S. ranch house, 40 feet east of road up Crow Creek, in solid sandstone, 10 inches above ground; aluminum tablet stamped "6415".....	6, 415. 261
Koehler, 1.6 miles southwest of, in southwest corner of platform of C. S. packing ice plant; copper nail marked "6327".....	6, 327. 47

	Feet.
Koehler, 2.5 miles southwest of, in south end of railroad bridge 57; top of bolt, marked "6300"	6, 299. 92
Koehler, 3.4 miles southwest of, 600 feet north of milepost 57, opposite curve, 100 feet east of railroad, 10 feet east of road; standard post marked "6296"	6, 295. 490
Koehler, 4.2 miles southwest of, east side of track, in railroad bridge 58A; top of bolt	6, 291. 14
Koehler, 5.3 miles southwest of, 150 feet north of milepost 60, east side of track, top of railroad bridge 59B; spike marked "6301"	6, 301. 42
Koehler, 6.2 miles southwest of, 500 feet north of milepost 61, 2 feet west of monument stone, 100 feet east of railroad, 10 feet east of road; standard post stamped "6337"	6, 336. 776
Vermejo siding; top of rail	6, 333. 7
Colfax, 5.2 miles east of, at crossing of old Santa Fe Trail highway, in road-crossing sign; railroad spike marked "6300"	6, 300. 02
Colfax, 4 miles east of, 1,000 feet north of reservoir, 10 feet west of highway, 2 feet east of monument stone; standard post stamped "6302"	6, 302. 28
Colfax, 3.2 miles east of, 20 feet east of highway, level with the ground; top of sandstone boulder, marked "6345"	6, 345. 32
Colfax, 2.2 miles east of, 10 feet east of highway, level with ground; top of sandstone boulder, marked "6352"	6, 352. 23
Colfax, 1.7 miles east of, 60 feet north of highway, 5 feet east of southeast corner of Stag Canyon Fuel property, which is a concrete post at fence corner; standard iron post stamped "6315"	6, 314. 526
Colfax, 1 mile east of, 10 feet north of highway, in fence post at corner; spike marked "6234"	6, 233. 91
Colfax, 0.5 mile east of, 160 feet west of road forks, 10 feet south of road, in juniper tree; spike marked "6194"	6, 193. 78
Colfax, 600 feet north of depot, in highway bridge across Rio Vermejo, in south end of concrete east side of road; bronze tablet stamped "6164"	6, 164. 109
Colfax, 0.8 mile north of, east side of track, railroad bridge 1276 D; top of concrete, marked "6186"	6, 186. 23
Colfax, 2 miles north of, 50 feet east of road, in north end of railroad bridge 1287 D; top of bolt, marked "6227"	6, 226. 81
Colfax, 2.9 miles north of, 100 feet east of road, 270 feet north of yard limit sign, in concrete at railroad bridge 1296 D; bronze tablet stamped "6248"	6, 248. 365
Dawson, 200 feet south of depot, north end of railroad bridge 1318 D; top of bolt, marked "6328"	6, 328. 04
Dawson, east side of depot; top of rail	6, 329. 3
Dawson, 0.9 mile north of, 30 feet east of road, west side of track, in stone railroad bridge; bronze tablet stamped "6355"	6, 354. 502
Dawson, 1.6 miles north of, north pier of wagon bridge across Rio Vermejo south of Lauretta mine camp; top of concrete, marked "6377"	6, 376. 51
Dawson, 2.7 miles north of, 500 feet north of pump station, 10 feet west of road, in root of cottonwood tree; spike marked "6426"	6, 425. 71
Dawson, 3.3 miles northwest of, 150 feet west of junction of Stag Canyon Creek with Rio Vermejo, 600 feet southwest of Dawson Dairy, 40 feet north of old road, in solid sandstone; bronze tablet stamped "6449"	6, 448. 509
Dawson, 4.8 miles northwest of, 80 feet north of Rio Vermejo, 30 feet south of road, in cottonwood tree; spike marked "6495"	6, 494. 98
Dawson, 5.4 miles northwest of, 50 feet north of road crossing Rio Vermejo, in root of cottonwood tree; spike marked "6526"	6, 526. 12
Dawson, 6.7 miles northwest of, 100 feet west of road, 100 feet east of Rio Vermejo; top of sandstone boulder, marked "6584"	6, 583. 81

		Feet.
Dawson, 7.6 miles northwest of, 30 feet north of road, on divide in ridge at horseshoe bend of Rio Vermejo; in solid sandstone; bronze tablet stamped "6732".....	6,731.482	
Dawson, 8.8 miles northwest of, 50 feet east of old cabin, 200 feet south of road crossing Caliente Creek, 100 feet east of Rio Vermejo; spike at ground in cottonwood tree, marked "6741".....	6,740.88	
Dawson, 9.9 miles northwest of, 300 feet north of a gate, 80 feet north of Rio Vermejo, 50 feet north of road; spike in root of 20-inch pine tree, marked "6786".....	6,785.48	
Dawson, 10.6 miles northwest of, 60 feet south of junction of two canyons from west with Rio Vermejo, 150 feet east of road, in solid sandstone ledge; bronze tablet stamped "6821".....	6,820.739	
Dawson, 11.5 miles northwest of, 10 feet west of road, 5 feet east of wire fence, 200 feet east of Rio Vermejo; top of sandstone boulder, marked "6854".....	6,854.35	
Dawson, 12.3 miles northwest of, 400 feet north of ranch house, north entrance to barnyard, in west gatepost; spike marked "6893".....	6,892.64	
Dawson, 13.5 miles northwest of, 150 feet north of a gate, 200 feet northeast of road crossing Rio Vermejo, in solid sandstone ledge; bronze tablet stamped "6958".....	6,958.146	
Dawson, 14.5 miles northwest of, 200 feet west of Rio Vermejo, 100 feet north of drain, 10 feet west of road; spike in root of pine tree, marked "7007".....	7,006.86	
Dawson, 15.5 miles northwest of, 400 feet west of Rio Vermejo, 10 feet west of road; point on sandstone boulder, marked "7032".....	7,031.74	
Dawson, 16.6 miles northwest of, 8.2 miles southeast of Vermejo Park, 300 feet west of gate, 150 feet north of Rio Vermejo, on point of hill, 30 feet north of road, in sandstone boulder; bronze tablet stamped "7146".....	7,146.101	
Vermejo Park, 7.5 miles southeast of, 500 feet west of road crossing York Canyon, 5 feet south of road; top of sandstone ledge, marked "7151".....	7,151.02	
Vermejo Park, 6.4 miles southeast of, 250 feet east of house, in gatepost; spike marked "7206".....	7,206.291	
Vermejo Park, 5.2 miles southeast of, 200 feet north of M. Virgil's house, 20 feet west of drain, 5 feet north of irrigation ditch; point on sandstone ledge, marked "7222".....	7,221.98	
Vermejo Park, 4.3 miles east of, 250 feet west of mouth of canyon from north, 200 feet west of gate, 150 feet north of Vermejo River, 80 feet north of road, in sandstone; bronze tablet stamped "7294".....	7,294.653	
Vermejo Park, 2 miles east of, in floor of bridge; spike.....	7,400.75	
Dawson, 22.8 miles northwest of, 800 feet east of Bartlett Mansion, 150 feet east of fork of road, 10 feet north of road, in sandstone boulder; bronze tablet stamped "7435".....	7,434.831	
Vermejo Park, 1 mile east of, 1,000 feet east of Bartlett Mansion, north side of road, east end of bridge; top of concrete, marked "7471".....	7,471.65	
From point 2.8 miles southwest of Preston southeast along highway to Dorsey, thence southwest along Atchison, Topeka & Santa Fe Ry. to French, thence northwest along El Paso & Southwestern R. R. to Colfax. (For elevations at French see Springer quadrangle.)		
Preston, 2.8 miles west of, 600 feet north of St. Louis, Rocky Mountain & Pacific Ry., 10 feet north of road, 2 feet east of monument of stone, in solid rock level with ground; aluminum tablet.....	6,386.867	
Dorsey, 5 miles northwest of, west pier of bridge across Willow Creek on old Santa Fe Trail highway, road forks 80 feet west; top of concrete, marked "6245".....	6,244.51	

Dorsey, 3.9 miles northwest of, 70 feet east of fork of old Santa Fe Trail highway, 100 feet north of a gate, 5 feet west of wire fence; standard post, marked "6236"	Feet. 6, 236. 207
Dorsey, 2.5 miles northwest of, 200 feet north of old road; top of 2½-inch pipe firmly set in ground, painted white.	6, 191. 69
Dorsey, 80 feet west of north end of side track at, 3 feet west of Atchison, Topeka & Santa Fe Ry. right-of-way fence; standard post marked "6083"	6, 082. 589
Dorsey, 1 mile southwest of, north end of railroad bridge 676 A, west side of track; top of bolt, marked "6066"	6, 066. 22
Dorsey, 1.4 miles southwest of, at milepost 677, steel rail set in ground; top	6, 060. 48
Dorsey, 2.4 miles southwest of, at milepost 678, steel rail in ground; top	6, 043. 28
Dorsey, 3.2 miles southwest of, in top of concrete railroad bridge 678 C, west side of track; aluminum tablet.	6, 030. 163
Dorsey, 4 miles southwest of, south end of railroad bridge 680 B, west side of track; top of concrete pier, marked "5996"	5, 995. 59
Schomberg flag station, 360 feet south of, top of milepost 681; steel rail in ground.	5, 988. 82
Dorsey, 5.6 miles southwest of, in top of south pier of railroad bridge 682 A, west side of track; aluminum tablet stamped "5968"	5, 968. 361
Maxwell, 2.5 miles northeast of, north end of railroad bridge 683 A, west side of track; top of bolt.	5, 953. 48
Maxwell, 2 miles northeast of, milepost 684; top.	5, 954. 13
Maxwell, 0.5 mile northeast of, north end of railroad bridge 685 A; top of bolt.	5, 911. 87
Maxwell, 250 feet west of Santa Fe depot, in front of main entrance of Maxwell Supply Co.'s store, in base of pillar; bronze tablet stamped "5909"	5, 908. 837
Maxwell, 1 mile southwest of; top of milepost 687.	5, 884. 48
Maxwell, 1.5 miles southwest of, south end of railroad bridge 6872 A, west side of track; top of concrete marked "5874"	5, 873. 68
Maxwell, 2.9 miles southwest of, 600 feet north of milepost 689, 60 feet east of road, 3 feet west of Atchison, Topeka & Santa Fe Ry.; iron post stamped "5861"	5, 860. 858
French, 3.3 miles northwest of, 150 feet northeast of road crossing, 80 feet east of track, 2 feet west of railroad right-of-way fence; iron post stamped "5912"	5, 912. 303
French, 4.3 miles northwest of, in north end of railroad bridge 1176 D; top of bolt marked "5957"	5, 956. 47
French, 6.1 miles northwest of, 110 feet north of road crossing, 80 feet east of track, 2 feet west of railroad right-of-way fence; iron post stamped "6017"	6, 016. 920
French, 7.4 miles northwest of, road passes under railroad bridge, in north end of railroad bridge 1208 D; spike.	6, 058. 58
Colfax, 5 miles southeast of, in railroad bridge 1217 D, east side of track; top of concrete marked "6057"	6, 056. 96
Colfax, 4.3 miles southeast of, 800 feet north of road crossing, west side of track, in concrete; aluminum tablet stamped "6068"	6, 067. 467
Colfax, 3.8 miles southeast of, north end of railroad bridge 1229 D; top of bolt.	6, 069. 58
Colfax, 3.4 miles southeast of, east side of track, railroad bridge 1233 D; top of concrete marked "6075"	6, 075. 35
Colfax, 2 miles southeast of, opposite railroad crossing sign; spike in railroad tie marked "6107"	6, 106. 97

Colfax, 1.3 miles southeast of, railroad bridge 1257 D, east side of track; top of concrete marked "6129".....	Feet.
	6,128.80
Colfax, 600 feet north of depot, east side of highway bridge across Rio Vermejo, in south end of concrete; bronze tablet stamped "6164".....	6,164.109
From Colfax southwest along St. Louis, Rocky Mountain & Pacific Ry. to Cimarron, thence along highway north and east to point 3 miles north of Dawson.	
Colfax, 600 feet north of depot, in highway bridge across Rio Vermejo, east side of road, in south end of concrete; bronze tablet stamped "6164".....	6,164.109
Colfax, 0.6 mile southwest of, in railroad bridge 69; top of bolt.....	6,187.77
Colfax, 1.5 miles southwest of, railroad bridge 69 B; top of bolt.....	6,229.66
Colfax, 2.3 miles southwest of, 80 feet north of railroad track, on top of ridge between Rio Vermejo and Von Brimmer Creek, 2,000 feet east of milepost 71, in boulder 10 by 14 by 30 inches firmly set in ground; aluminum tablet stamped "6269".....	6,268.769
Colfax, 3.3 miles southwest of, north end of railroad bridge 71; top of bolt marked "6271".....	6,270.51
Colfax, 3.9 miles southwest of, 100 feet northeast of highway crossing, in telegraph pole; spike marked "6272".....	6,272.44
Colfax, 5.2 miles southwest of, west end of railroad bridge 73; top of bolt.....	6,340.84
Colfax, 5.7 miles southwest of, 90 feet north of track, 300 feet west of milepost 74, 1 foot south of monument of stone, in sandstone boulder 6 by 12 by 18 inches; aluminum tablet stamped "6358".....	6,358.377
Colfax, 6.7 miles southwest of, 50 feet north of milepost 75, in cattle guard; bolt marked "6412".....	6,412.40
Colfax, 7.5 miles southwest of, west end of railroad bridge 75; top of bolt marked "6400".....	6,400.05
Colfax, 8.4 miles southwest of, 80 feet north of road crossing railroad at Ceresoso flag station, in sandstone boulder 12 by 14 by 24 inches, firmly set in ground; bronze tablet stamped "6396".....	6,396.050
Cimarron, 5.1 miles northeast of; spike in cattle guard marked "6423".....	6,423.40
Cimarron, 4.1 miles northeast of, 200 feet west of highway crossing, west end of railroad bridge 78 A; top of bolt marked "6455".....	6,455.14
Cimarron, 3 miles northeast of, 150 feet north of railroad track in cut, on top of north and south ridge, 1,000 feet east of milepost 80; iron post stamped "6487".....	6,486.702
Cimarron, 1.8 miles northeast of, in railroad bridge 80 B; top of bolt marked "6409".....	6,408.79
Cimarron, 1 mile northeast of, west end of railroad bridge 81 B; top of bolt marked "6395".....	6,395.04
Cimarron, entrance of First National Bank of Cimarron, in concrete; bronze tablet stamped "6427".....	6,426.823
Cimarron, 0.6 mile north of, 10 feet north of road; top of sandstone in ground marked "18" on south and cross on top.....	6,452.62
Cimarron, 1.1 miles north of, at road crossing Cimarron & Northwestern Logging R. R., in cattle guard; spike marked "6427".....	6,426.86
Cimarron, 2.5 miles north of, north of road crossing logging railroad; copper nail in cattle guard marked "6469".....	6,469.25
Cimarron, 3 miles north of, 50 feet east of road forks, 0.5 mile north of Springer's house, 1 foot west of monument of stone, in sandstone boulder level with ground; bronze tablet stamped "6520".....	6,519.766
Cimarron, 3.9 miles north of, 10 feet east of road; top of sandstone boulder marked "6553".....	6,552.74

	Feet.
Cimarron, 4.4 miles north of, 300 feet north of Chase's ranch house; spike at ground in gatepost marked "6565".....	6,564.85
Cimarron, 5.6 miles north of, 10 feet east of road; top of sandstone boulder marked "6590".....	6,589.66
Cimarron, 6.3 miles north of, 60 feet south of road, 150 feet north of Ponil Creek and 60 feet above, 200 feet north of railroad, 0.5 mile west of mouth of Chase Canyon, in sandstone ledge; bronze tablet stamped "6649"....	6,649.171
Cimarron, 7.3 miles north of, 80 feet east of Chase Creek, 60 feet east of road; top of solid sandstone marked "6679".....	6,679.41
Cimarron, 8.6 miles north of, 1,000 feet south of canyon fork, 100 feet west of Chase Creek, 50 feet east of road; top of sandstone boulder, marked "6813".....	6,813.40
Cimarron, 9.4 miles north of, 10 feet east of road, 50 feet west of Chase Creek, 300 feet north of mouth of canyon from west, in sandstone boulder; bronze tablet stamped "6874".....	6,874.265
Cimarron, 10.1 miles north of, 60 feet east of road, in root of pine tree at fork of canyon; copper nail marked "6933".....	6,933.43
Cimarron, 10.9 miles north of, in root of cottonwood tree; spike.....	7,010.51
Cimarron, 11.2 miles north of, 10 feet west of road, 250 feet west of mouth of Juan Braila Canyon, in solid sandstone; bronze tablet stamped "7042"....	7,042.390
Cimarron, 11.7 miles north of, 5 feet west of Juan Braila Creek, 2 feet east of trail; top of sandstone boulder marked "7104".....	7,104.04
Cimarron, 12.2 miles north of, 200 feet west of canyon fork, 3 feet south of trail; copper nail in root of 20-inch pine tree marked "7206".....	7,205.82
Cimarron, 13.3 miles north of, 10 feet east of Juan Braila Creek; spike in root of 16-inch pine tree marked "7412".....	7,411.96
Cimarron, 13.9 miles north of, 40 feet east of old trail, 10 feet east of creek; spike in root of 20-inch pine tree, marked "7598".....	7,598.25
Cimarron, 14.1 miles north of, in divide between head of Juan Braila Canyon and canyon to north turning west; spike in root of 14-inch pine tree, marked "7723".....	7,723.07
Cimarron, 14.3 miles north of, 5 feet west of W. S. wire fence on north and south divide between Juan Braila and Plaza canyons, in sandstone ledge; bronze tablet stamped "7721".....	7,721.042
Cimarron, 14.7 miles north of, west side of drain in Plaza Canyon; spike in root of 24-inch pine tree, marked "7484".....	7,483.64
Cimarron, 15.5 miles north of, 20 feet north of old trail, 10 feet south of Plaza Creek; spike in root of 24-inch pine tree, marked "7295".....	7,294.98
Cimarron, 16.3 miles north of, 600 feet north of junction of canyon from north with west fork of Corso Canyon, 700 feet north of corrals; spike in 24-inch pine tree, marked "7180"	7,180.08
Cimarron, 16.8 miles north of, 10 feet west of old trail, on ridge between east and west forks of Ceresoso Creek, 20 feet south of large pine tree, 1 foot east of monument of stone; aluminum tablet stamped "7431".....	7,430.954
Dawson, 18.8 miles northwest of, 10 feet east of trail; spike in root of 30-inch pine tree, marked "7305"	7,305.59
Dawson, 18 miles northwest of, 200 feet north of a new cabin, 60 feet west of old road, 100 feet west of Ceresoso Creek, 300 feet north of mouth of canyon from west; spike in 24-inch pine tree, marked "7081".....	7,080.59
Dawson, 17.1 miles northwest of, 70 feet west of old road, 100 feet west of Ceresoso Creek; spike in 18-inch pine tree, marked "7139"	7,138.75
Dawson, 15.9 miles northwest of, 60 feet east of old road, 70 feet east of drain, 0.25 mile north of junction of this canyon with Ceresoso Canyon; in solid sandstone ledge; bronze tablet stamped "7247"	7,246.977

Dawson, 15.5 miles northwest of, on top of divide between Von Brimmer and Ceresoso canyons, at gate; spike in root of 14-inch pine tree, marked "7376".....	Feet.	7,376.48
Dawson, 15 miles northwest of, 60 feet west of canyon course southeast, 150 feet west of old road; spike in root of 24-inch pine tree, marked "7205".....	7,209.15	
Dawson, 14.5 miles northwest of, 120 feet west of old road on ridge; at 20-inch pine tree; point on rock, marked "7290".....	7,290.46	
Dawson, 13.9 miles northwest of, 60 feet north of drain, 100 feet north of old road; top of sandstone boulder, marked "7084".....	7,084.39	
Dawson, 12.9 miles northwest of, 300 feet north of junction of canyon from west with Von Brimmer Creek, 300 feet southwest of old corrals, 150 feet west of old road, 1 foot east of monument of stone, on end of ridge, in solid sandstone level with ground; bronze tablet stamped "6958".....	6,957.625	
Dawson, 12.2 miles northwest of, 200 feet south of drain in canyon from west, 20 feet south of old road, 300 feet west of Von Brimmer Creek; spike in root of 20-inch pine tree, marked "6985".....	6,984.70	
Dawson, 11.7 miles northwest of, 120 feet west of Von Brimmer Creek, 60 feet west of old road, at rim rock; point on sandstone boulder, marked "7013".....	7,013.40	
Dawson, 10.6 miles northwest of, 400 feet north of junction of level line canyon with Von Brimmer Creek, on point of ridge; spike in root of 24-inch pine tree, marked "7106".....	7,106.56	
Dawson, 9.5 miles northwest of, 10 feet south of old road, 50 feet southeast of gate, on top of divide between Stag and Von Brimmer canyons, in sandstone ledge; bronze tablet stamped "7349".....	7,348.978	
Dawson, 8.8 miles northwest of, 200 feet west of fork of canyons, 50 feet north of drain, 60 feet north of old road, on solid sandstone ledge; chiseled square marked "7113".....	7,112.68	
Dawson, 8 miles northwest of, 10 feet north of old road, 20 feet north of Stag Canyon Creek; top of rock marked "7001".....	7,000.60	
Dawson, 7.5 miles northwest of, 120 feet west of old road, 50 feet south of canyon from west, in root of 30-inch pine tree; spike marked "6957".....	6,957.40	
Dawson, 7 miles northwest of, 100 feet north of creek, 150 feet north of old road, 200 feet west of junction of canyons; top of sandstone boulder marked "6902".....	6,902.01	
Dawson, 6.3 miles northwest of, 40 feet east of creek, 130 feet north of old road, at end of rim rock, in solid sandstone; bronze tablet stamped "6832".....	6,832.408	
Dawson, 5.2 miles northwest of, 120 feet south of creek, 10 feet south of old road; top of sandstone boulder marked "6694".....	6,694.11	
Dawson, 4.5 miles north of, 50 feet south of old road crossing Stag Creek; point on solid sandstone, marked "6600".....	6,600.39	

RATON QUADRANGLE.

[Latitude 36° 45'-37°; longitude 104° 15'-104° 30'.]

From Colorado-New Mexico line south along "Scenic Highway" to Raton. (Part of a double-run line from Thatcher, Colo.)

Wooten, 2 miles south of, on west side of Scenic Highway, between Raton and Trinidad, on highest point of rock; aluminum tablet stamped "7883".....	7,889.389
Raton, 6 miles north of, on west side of Scenic Highway, in top of rock; aluminum tablet stamped "7602".....	7,607.627
Raton, 5.5 miles north of, on east side of road; hub cut on root of pine tree, marked "7459".....	7,464.55
Raton, 4 miles north of, on east side of highway; nail in root of tree, marked "7397".....	7,402.86

Raton, 3 miles north of, on east side of highway, on top of rise going to north; iron post stamped "7428"	Feet. 7,433.608
Raton, 2 miles north of, on west side of highway; top of stone at base of tree, marked "7384"	7,390.09
Raton, 0.2 mile north of station, 90 feet west of railroad track, on north end of Ripley Park, near Santa Fe Trail Monument, 20 feet east of band stand; iron post stamped "6663"	6,668.100
From Raton south along Atchison, Topeka & Santa Fe Ry. 6.5 miles, thence east along St. Louis, Rocky Mountain & Pacific Ry. to Hunters Canyon.	
Raton, in front of station, top of rail	6,639.0
Raton, 1 mile south of, in northeast corner of railway bridge; top of bolt painted white, marked "6604"	6,605.361
Raton, 2 miles south of, on level with Atchison, Topeka & Santa Fe rail, at elevated crossing of that railroad track with St. Louis, Rocky Mountain & Pacific, in east post of south pier of wooden trestle; nail marked "6536"	6,537.11
Dillon, 700 feet north of station, east side of track, in line of right-of-way fence; iron post stamped "6494"	6,495.565
Dillon, 1 mile south of, 4 miles from Raton, on east side of track at post marked "Station"; top of rail, marked "6435"	6,436.06
Raton, 4.8 miles south of, in top of east side of north pier of bridge over Red River; aluminum tablet stamped "6398"	6,399.241
Raton; 6 miles south of, 0.5 mile north of crossing of Atchison, Topeka & Santa Fe Ry. with St. Louis, Rocky Mountain & Pacific Ry., in base of semaphore light signal post; bolt painted white, marked "6357"	6,358.27
Raton, 6.5 miles south of, 50 feet north of elevated crossing of two railroads; top of white rail marked "666," marked "6344"	6,345.21
Raton, 7 miles south of, at Clifton House, 2,200 feet east of crossing of railways, near south point of railroad wye, 70 feet east of St. Louis, Rocky Mountain & Pacific track; iron post stamped "6354"	6,355.370
Clifton House, 1.5 miles east of, east side of track; nail in west side of post marked "Yard Limit," marked "6384"	6,385.29
Clifton House, 2.5 miles east of, on bridge, north side of track; bolt farthest west on bridge, marked "6342"	6,343.40
Chicorica, at road crossing railroad track, on north side of track (650 feet east of trestle over Chicorica River); iron post stamped "6302"	6,303.210
Chicorica, 1 mile east of, in telephone post; nail marked "6331"	6,331.67
Chicorica, 2.5 miles east of, on railroad trestle, east of track, south end of bridge; top of bolt painted white, marked "6333"	6,334.09
Chicorica, 3.6 miles east of, at road crossing, on north side of track, 50 feet from track, 900 feet east of trestle 34 on railway; iron post stamped "6376"	6,376.800
Chicorica, 4.5 miles east of, west end of bridge, north side of rail; top of bolt painted white, marked "6395"	6,395.98
Cunningham, 0.5 mile west of junction of St. Louis, Rocky Mountain & Pacific and Santa Fe, Raton & Eastern railways at that place, north side of wooden bridge, on west end; top of bolt painted white, marked "6462"	6,463.37
Cunningham, northeast of crossing of St. Louis, Rocky Mountain & Pacific and Santa Fe, Raton & Eastern railways, at intersection of two right-of-way fences; iron post stamped "6485"	6,485.853
Cunningham, 1.2 miles east of, north side of St. Louis, Rocky Mountain & Pacific Ry., at place where road goes under railroad; top of bolt painted white on east end trestle, marked "6525"	6,525.809

	Feet.
Clifton House, 15.4 miles east of, where road crosses track, on south side of road; rail joint on west rail of railway where joint is between bars of cattle guard, marked "6565".....	6, 566. 65
Meloche ranch, northeast of red barn on, in northwest corner of railway bridge; top of bolt, marked "6593".....	6, 594. 04
Clifton House, 16.3 miles east of, north side of track, on east end of bridge; top of bolt painted white, marked "6621".....	6, 622. 30
Clifton House, 17 miles east of, 200 feet east of trestle, where road goes under railroad going up to Hunters Canyon, in cut on north side of track; iron post stamped "6665".....	6, 665. 910
From Raton northeast along Santa Fe, Raton & Eastern R. R. to Yankee, thence along highway east and south across Johnson Mesa and Hunter Canyon to St. Louis, Rocky Mountain & Pacific Ry.	
Raton, 0.5 mile east of station, west end of bridge; top of bolt farthest north, painted white, marked "6625".....	6, 625. 85
Raton, 1.7 miles east of, on north side of trestle at west end; bolt painted white, marked "6641".....	6, 642. 04
Raton, 2.5 miles east of, at place where road crosses track, east side of track, 60 feet from rails, north side of road, in fence line; iron post marked "6683".....	6, 684. 434
Carisbrook, 0.3 mile southwest of station; point on top of rail at frog, marked "6714".....	6, 714. 78
Carisbrook, 0.5 mile northeast of, on east limb of railroad wye, on north side and east end of trestle; top of bolt, marked "6717".....	6, 718. 19
Carisbrook, 1.6 miles northeast of, at road crossing, south side of road, west side of track, 1 foot from corner of right-of-way fence; iron post stamped "6811".....	6, 812. 208
Carisbrook, 2.3 miles northeast of, 250 feet north of place where road crosses Santa Fe, Raton & Eastern R. R.; on top of bolt on west side of south end of bridge, marked "6892".....	6, 893. 28
Yankee, 0.5 mile south of, on east side of road; on top of rock marked "6976".....	6, 977. 50
Yankee, east of, on west side of road; nail driven in fence post marked "7053".....	7, 054. 45
Yankee, 1.5 miles east of, on road leading up to Johnson Mesa, west side of road, in railing of concrete culvert; aluminum tablet stamped "7223".....	7, 224. 655
Yankee, 3.5 miles east of, on east side of road, 200 feet south of fork of road to east; nail in fence post marked "7760".....	7, 762. 17
"West End" Schoolhouse on Johnson Mesa, 1.5 miles southwest of, west side of road; on peg at bottom of telephone pole where telephone line crosses road, marked "8113".....	8, 114. 72
T. 31 N., R. 25 E., at northwest corner of sec. 15, at southeast corner of intersection of roads, 1 mile south of West End schoolhouse; iron post stamped "8146".....	8, 147. 635
T. 31 N., R. 25 E., at southwest corner of sec. 15, at fence corner on east side of road; on top of rock marked "8233".....	8, 235. 25
T. 31 N., R. 25 E., northwest corner of sec. 21, 2 miles south by 1 mile west of West End schoolhouse; iron post stamped "8319".....	8, 320. 448
Towndrow's house, on south side of road in hollow, 12 feet east of; on rock marked "8267".....	8, 268. 54
Towndrow's house, 1 mile south of, at curve in road through Hunters Canyon; cross painted on rock at base of large rock marked "8141".....	8, 143. 03
Cap rock, 0.5 mile south of, near outcropping of rocks on west side of creek, near head of Hunters Canyon; top of rock.....	7, 615. 32

Hunter Canyon, 100 feet west of creek, west side of old wagon trail; on top of rock painted "7320".....	Feet.
	7,321.11
Hunter Canyon, near foot of steep drop at bottom of; cross painted on rock marked "7137".....	7,138.39
St. Louis, Rocky Mountain & Pacific Ry., 2.3 miles north of, 500 feet south of W. L. Popejoy's house, 30 feet west of fence corner on west side of creek flowing from Hunters Canyon; iron post stamped "6831".....	6,832.518
St. Louis, Rocky Mountain & Pacific Ry., 1 mile north of; in top of rock painted "U. S. 6677"	6,678.49

From Dillon west along highway 2.8 miles.

Dillon, 700 feet north of, east side of railroad right of way, in line of fence; iron post stamped "6495".....	6,495.565
Dillon, 2.8 miles west of, 40 feet south of road; spike in root of 10-inch pine tree, marked "6613".....	6,613.83

From Clifton House west 3.1 miles.

Dillon, 4 miles south of, at Clifton House, 2,200 feet east of crossing of rail-ways, near south point of railroad wye, 70 feet east of St. Louis, Rocky Mountain & Pacific Ry. track; iron post stamped "6354".....	6,355.370
Clifton House, 1.5 miles west of, 1,200 feet south of yard-limit sign, south end of bridge on west side of St. Louis, Rocky Mountain & Pacific Ry. track, bridge 43 A; top of bolt marked "6366"	6,366.29
Clifton House, 3.1 miles west of, 0.5 mile west of bridge 44 C on St. Louis, Rocky Mountain & Pacific Ry., 0.8 mile south of Red River Peak, 2 feet west of mound of stone on top of ridge, in solid sandstone 8 inches above ground; aluminum tablet stamped "6516".....	6,516.688

SPRINGER QUADRANGLE.

[Latitude 36°-36° 30'; longitude 104° 30'-105°.]

Near French.

French, 1.5 miles northeast of, north end of railroad bridge 689 A across Rio Vermejo; top of concrete marked "5854".....	5,853.58
French, 1,000 feet south of depot, 80 feet west of Atchison, Topeka & Santa Fe Ry. crossing under El Paso & Southwestern R. R. west pier of El Paso & Southwestern R. R. bridge across Red River, in top of concrete; bronze tablet stamped "5846".....	5,845.918
French, 1.1 miles northwest of, west end of railroad bridge 1144 D, north side of track; top of bolt marked "5876".....	5,876.09
French, 1.6 miles northwest of, 70 feet south of road crossing, in telegraph pole; spike marked "5883".....	5,882.94
French, 2.4 miles northwest of, east side of track on railroad bridge 1158 D; top of concrete marked "5892".....	5,891.72

UTE CREEK QUADRANGLE.

[Latitude 36° 30'-37'; longitude 105°-105° 30'.]

From Vermejo Park north to State line.

Vermejo Park post office, 800 feet northeast of, on top of west pier of bridge at road forks, in sandstone; bronze tablet stamped "7522".....	7,522.090
Vermejo Park, 1.7 miles north of, 20 feet east of bridge, 10 feet north of road, in root of 16-inch pine tree; copper nail marked "7721".....	7,721.25
Vermejo Park, 2.5 miles north of, 700 feet east of coal mine, 60 feet east of creek, 10 feet east of road, in solid sandstone; bronze tablet stamped "7834".....	7,834.45

	Feet.
Vermejo Park, 3.4 miles north of, 50 feet north of creek, 20 feet north of road, in root of 14-inch willow tree; copper nail marked "7991"	7, 991.58
Vermejo Park, 4.5 miles north of, 130 feet west of road, 70 feet east of creek, 1 foot east of monument of stone, in sandstone boulder, level with the ground; bronze tablet stamped "8175"	8, 175.882
Vermejo, 4.8 miles north of, 30 feet east of creek, 20 feet east of road, in root of 18-inch pine tree; spike marked "8225"	8, 225.28
Vermejo Park, 6.1 miles north of, 20 feet east of road crossing creek at mouth of canyon from east; top of sandstone boulder marked "8453"	8, 453.03
Vermejo Park, 6.7 miles north of, 80 feet east of road crossing creek; point on rock, marked "8589"	8, 589.62
Vermejo Park, 7.5 miles north of, 150 feet east of road; top of sandstone boulder marked "8800"	8, 800.22
Vermejo Park, 8.9 miles north of, 5 feet east of road on top of hill, in root of 14-inch pine tree; copper nail marked "9116"	9, 116.77
Vermejo Park, 9.3 miles north of, 150 feet north of Red River, 120 feet north of road, 400 feet west of the Terico and Vermejo Park road crossing of Red River, 20 feet north of pine tree, in solid sandstone level with ground; bronze tablet stamped "9041"	9, 041.730

On Ponil Creek (double spur).

Cimarron, 7.2 miles northwest of, in railroad bridge 17; top of bolt marked "6671"	6, 670.91
Cimarron, 7.8 miles northwest of, in base of railroad water tank at side track; spike marked "6711"	6, 711.13
Cimarron, 9.6 miles northwest of, 200 feet east of road, 60 feet east of Ponil Creek, 50 feet west of railroad track; top of large boulder marked "6844"	6, 843.82
Cimarron, 9.8 miles northwest of, 300 feet north of Ponil Creek, 250 feet north of railroad, 600 feet west of gate, 10 feet north of road, in sandstone boulder; bronze tablet stamped "6865"	6, 865.324

Canyon Largo, Datil, Luera Spring, Magdalena, Mogollon, Nutrioso, Patterson, and Reserve quadrangles.

SOCORRO COUNTY.

The elevations in the following list were determined by primary leveling and accord with the 1912 adjustment of precise leveling.

The leveling was done in 1915 by R. W. Burchard.

CANYON LARGO QUADRANGLE.

[Latitude 34°-34° 30'; longitude 108° 30'-109°.]

Near Gallo Spring.

	Feet.
Gallo Lake, 0.5 mile east of, 13.7 miles northwest of Aragon, 25 feet south of road on steep grade, in top of detached black boulder; bronze tablet stamped "7785"	7, 786.201
Gallo Lake; surface of water Apr. 4, 1915	7, 684.6
Gallo Lake, 200 feet from lower (north) end; top of rock	7, 689.79
Gallo Lake, 1.2 miles southwest of, 50 feet south of road on summit of ridge; top of rock outcrop, painted "7897"	7, 897.77
Gallo Lake, 2.5 miles southwest of, 30 feet east of road at crossing of ravine, in top of very prominent square, detached boulder; bronze tablet stamped "7767"	7, 767.476

DATIL QUADRANGLE.

[Latitude 34° 34° 30'; longitude 107° 30'-108°.]

From point 16.8 miles southwest of Magdalena west along highway to C-N ranch.

Durfee's well, 3.6 miles northeast of, 1,200 feet west of lone windmill, 25 feet south of road in fence corner; iron post stamped "7184"	Feet: 7,184.386
Durfee's well, 2.4 miles northeast of, 20 feet south of road, in top of 2 by 2 inch pine stake; copper nail and washer painted "7276"	7,276.28
Durfee's well, 500 feet west of, ranch house 20 feet north of road, beside United States Forest Service milepost; iron post stamped "7517"	7,517.401
Durfee's well, 1.5 miles west of, 25 feet south of road, in base of United States Forest Service boundary post; copper nail and washer painted "7720"	7,720.15
Durfee's well, 2.8 miles west of, 25 feet south of road on summit of steep grade; circle painted in top of detached boulder painted "7642"	7,642.31
Durfee's well, 3.5 miles west of, 25 feet north of road at forks; iron post stamped "7411"	7,411.175
Durfee's well, 6.7 miles west of, 25 feet south of forks of Reserve and Deming roads; iron post stamped "7258"	7,258.667
Durfee's well, 8.5 miles west of, 25 feet north of road, in top of 2 by 2 inch pine stake; copper nail and washer, painted "7079"	7,079.64
Durfee's well, 2.9 miles west of, 25 feet north of road on point of slight ridge, in top of 2 by 2 inch pine stake; copper nail and washer, painted "6977"	6,977.52
C-N ranch, 3.1 miles east of, 11.5 miles west of Durfee's well, 25 feet north of road on edge of salt flats; iron post stamped "6926"	6,926.124
C-N ranch, 2.1 miles east of, south side of road, C-N ranch east fence line, in base of gatepost; nail and washer, painted "6909"	6,909.15
C-N ranch, 50 feet west of, ranch house at fence; iron post stamped "6897"	6,897.004

LUERA SPRING QUADRANGLE.

[Latitude 33° 30'-34°; longitude 107° 30'-108°.]

From C-N ranch southwest along highway 9 miles.

C-N ranch, 1.1 miles west of, 50 feet north of road, in base of piñon tree; nail and washer, painted "6940"	6,940.45
C-N ranch, 2 miles west of, 50 feet north of road at summit of low divide, in base of piñon tree; copper nail and washer, painted "7002"	7,002.28
C-N ranch, 3.7 miles west of, 30 feet north of road forks; iron post stamped "6898"	6,898.066
C-N ranch, 5.6 miles west of, 30 feet north of road opposite windmill and tank, in top of stake; nail and washer, painted "6873"	6,873.42
C-N ranch, 7.4 miles west of, 25 feet north of road; iron post stamped "6876"	6,876.886
C-N ranch, 9 miles west of, 30 feet north of road, in top of pine stake; copper nail and washer, painted "6891"	6,891.47

From sec. 29, T. 5 S., R. 11 W., northeast along highway to Reserve-Magdalena road near Granger Spring.

Fullerton's ranch, 9.40 miles east of, 15 feet south of road in top of cedar stake; copper nail and washer, painted "6901"	6,901.09
Fullerton's ranch, 11.20 miles east of, east side of road in southwest corner of inclosure about old windmill tower; iron post stamped "6854"	6,854.003
Fullerton's ranch, 12.40 miles east of, 15 feet southeast of road on slight ridge, in top of cedar stake; copper nail and washer, painted "6884"	6,884.25

Fullerton's ranch, 13.40 miles east of, 15 feet west of road at forks, in top of cedar stake; copper nail and washer, painted "6870"	Feet. 6,869.75
Fullerton's ranch, 14.40 miles east of, 20 feet west of road on summit of slim ridge extending into plains; iron post stamped "6933"	6,933.284
Fullerton's ranch, 17.20 miles east of, 15 feet southeast of road, in top of cedar stake; copper nail and washer, painted "6916"	6,915.79
Fullerton's ranch, 19.90 miles east of, at forks of road and Reserve and Magdalena roads, 30 feet north of; iron post stamped "6898" (previously established)	6,898.066

From point near Garcia's ranch along dim road northeast and north 7.4 miles.

Garcia's ranch, 1.90 miles northeast of, east side of canyon beside road; top of rock outcrop, painted "7410"	7,409.92
Garcia's ranch, 3.90 miles northeast of, 25 feet west of road on point of slight ridge; top of rock outcrop, painted "7446"	7,445.52
Garcia's ranch, 5.40 miles northeast of, Torke Springs ranch, at foot of hill in front of deserted cabin, 30 feet east of road crossing of stream, top of rock outcrop; bronze tablet stamped "7457"	7,457.033
Garcia's ranch, 6.40 miles northeast of, east side of canyon; top of rock outcrop, painted "7495"	7,495.07
Garcia's ranch, 7.40 miles northeast of, 30 feet south of Shaw Canyon road; iron post stamped "7527"	7,526.905

MAGDALENA QUADRANGLE.

[Latitude 34°-34° 30'; longitude 107°-107° 30'.]

From Magdalena southwest along highways 16.8 miles.¹

Magdalena, 25 feet south of railroad, 500 feet west of station; iron post stamped "6556 Socr" (previously established)	6,562.182
Magdalena, 1.2 miles southwest of; ground at road forks	6,537.2
Magdalena, 2.56 miles southwest of, 100 feet south of road at point of ridge, in corner fence post; nail and washer, painted "6587"	6,587.32
Magdalena, 3.48 miles southwest of, 20 feet north of road at forks, 100 feet east of dry wash; iron post stamped "6628"	6,628.343
Magdalena, 4.48 miles southwest of, 10 feet north of road, in base of cedar tree; copper nail and washer, painted "6698"	6,698.08
Magdalena, 7.8 miles southwest of, 20 feet south of road; iron post stamped "6940"	6,939.647
Magdalena, 9.5 miles southwest of, 10 feet north of road, 100 feet east of crossroads in saddle, in base of cedar tree; copper nail and washer, painted "7158"	7,158.59
Magdalena, 10.4 miles southwest of, 50 feet north of road on summit of ridge; iron post stamped "7238"	7,238.436
Magdalena, 11.6 miles southwest of, 50 feet south of road, in top of cedar stump; copper nail and washer, painted "7126"	7,125.83
Magdalena, 12.8 miles southwest of, 50 feet north of forks of Reserve-Trans-continental highways; iron post stamped "7040"	7,040.462
Magdalena, 14.7 miles southwest of, 20 feet north of road, in base of corner fence post of Cox's ranch; copper washer and nail, painted "7014"	7,014.65
Magdalena, 16.8 miles southwest of, 20 feet north of road, in top of 2 by 2 inch pine stake; copper nail and washer, painted "7065"	7,064.78

¹ For additional elevations in Magdalena quadrangle see p. 44-45.

MOGOLLON QUADRANGLE.

[Latitude $33^{\circ} 33' 30''$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From point 12.5 miles south of Stephens sawmill south along highways to Glenwood.

	Feet.
Alma, 10.9 miles north of, 50 feet north of road, summit of flat ridge, in base of lone cedar snag; copper nail and washer painted "5567"	5, 567. 63
Alma, 9.5 miles north of, 25 feet east of road on summit of slim ridge, in top of rock outcrop; bronze tablet stamped "5423"	5, 423. 852
Alma, 7.7 miles north of, 20 feet west of road, in top of pine stake; copper nail and washer, painted "5298"	5, 299. 52
Alma, 5.9 miles north of, 20 feet south of road, west bank of San Francisco River at crossing, in top of large square boulder; bronze tablet stamped "4998"	4, 999. 040
San Francisco River; water level at crossing Mar. 23, 1915.....	4, 981. 1
Alma, 4.5 miles north of, 2 feet east of road, 100 feet north of log cabin; top of rock outcrop, painted "4955"	4, 955. 66
Alma, 3 miles north of, 200 feet west of road, on south rim of Keller Canyon; top of rock, painted "5018"	5, 018. 65
Alma, 1 mile northwest of, 10 feet south of road, at foot of steep grade, in top of cedar stump; copper nail and washer, painted "4915"	4, 915. 90
San Francisco River; water level at crossing Mar. 24, 1915.....	4, 863. 8
Alma, south side of Jones's store; iron post stamped "4870" (previously established).....	4, 870. 844
Glenwood, at crossroads, Graham-Alma roads, in rock outcrop; bronze tablet stamped "4746," previously established (1912 adjustment equals Bull. 464 plus 0.8 foot).....	4, 745. 968

NUTRIOSA QUADRANGLE.

[Latitude $33^{\circ} 30' - 34^{\circ}$; longitude $109^{\circ} - 109^{\circ} 30'$.]Southwest of Luna.¹

Luna, 6.3 miles south of, north side of road, at foot of grade, in base of large pine tree; copper nail and washer, painted "6944"	6, 945. 44
Luna, 7.1 miles south of, junction of Dry Blue, at road crossing; top of detached boulder, "6795" painted on cottonwood tree.....	6, 796. 22
Luna, 8.6 miles south of, 30 feet east of road, at point of ridge opposite and 500 feet northeast of junction of Pace and Blue creeks, in top of rock outcrop; bronze tablet stamped "6621"	6, 622. 062
Luna, 9.9 miles south of, 50 feet east of road, in creek, in base of cottonwood tree; copper nail and washer, painted "6518"	6, 519. 51

PATTERSON QUADRANGLE.

[Latitude $33^{\circ} 30' - 34^{\circ}$; longitude $108^{\circ} - 108^{\circ} 30'$.]

From point 9 miles west of C-N ranch west along highways to point 3.2 miles north-east of Aragon.

Guittaras ranch, 7.4 miles east of, 25 feet north of road on flat ridge; iron post stamped "6922"	6, 922. 507
Guittaras ranch, 6.4 miles east of, 20 feet north of road, in top of pine stake; copper nail and washer, painted "6919"	6, 919. 33
Guittaras ranch, 3.6 miles east of, 25 feet north of road forks, on slight ridge; iron post stamped "6903"	6, 903. 283
Guittaras ranch, 1.8 miles east of, 25 feet north of road, in top of cedar stake; copper nail and washer, painted "6875"	6, 874. 86
Guittaras ranch, 60 feet east of store; iron post stamped "6839"	6, 839. 299

¹ For elevations in Arizona in this quadrangle see U. S. Geol. Survey Bull. 573, pp. 101-102, 1915.

Guiterras ranch, 1.6 miles west of, 50 feet south of road, in top of pine stake	Feet.
copper nail and washer, painted "6887"	6, 887. 62
Guiterras ranch, 3.4 miles of, 15 feet south of road; prominent black boulder	6, 935. 84
Guiterras ranch, 5.9 miles west of, 20 feet south of road, in top of pine stake;	
copper nail and washer, painted "6993"	6, 993. 54
Horse Springs, 250 feet north of ranch house, 20 feet east of gate; iron post	
stamped "7070"	7, 070. 54
Horse Springs, 1.5 miles west of, 25 feet north of road, on summit of divide,	
in base of large juniper tree; copper nail and washer, painted "7273" ..	7, 274. 18
Horse Springs, 3 miles west of, 30 feet north of road, on edge of mesa; top of	
rock outcrop painted "7054"	7, 054. 35
Horse Springs, 4.2 miles west of, 60 feet north of road, at Mayberry's mail	
box, in top of rock outcrop; bronze tablet stamped "7018"	7, 018. 824
Horse Springs, 6.3 miles west of, 30 feet north of road, on top of ridge, in top	
of pine stake; copper nail and washer, painted "6997"	6, 997. 22
Horse Springs, 7.6 miles west of, 100 feet south of road, in base of lone cedar	
tree; copper washer and nail, painted "7033"	7, 033. 56
Horse Springs, 9.5 miles west of, 20 feet south of road, in base of U. S. Forest	
Service boundary post; nail and copper washer, painted "7163"	7, 164. 09
Horse Springs, 10.8 miles west of, 2,000 feet east of Continental Divide, 100	
feet east of road, in top of prominent limestone outcrop; bronze tablet	
stamped "7311"	7, 312. 154
Horse Springs, 13 miles west of, 250 feet north of road, in head of Tularosa	
Creek, in base of lone pine tree; copper nail and washer, painted "7041".	7, 041. 57
Aragon, 3.2 miles northeast of, 16.8 miles west of Horse Springs, 20 feet	
south of road, at forks of canyon, 500 feet west of forks of Reserve and	
Sand Flats roads, in top of large square boulder; bronze tablet stamped	
"6852"	6, 853. 176

From point near Patterson (Mayberry ranch) along highways south to Hubbles
ranch, thence northeast to sec. 29, T. 5 S., R. 11 W.

Mayberry's ranch, 1.80 miles north of, 50 feet north of Reserve-Magdalena	
road at Mayberry's mail box, on top of rock outcrop; bronze tablet	
stamped "7018"	7, 018. 824
Mayberry's ranch, 0.6 mile north of, in base of corner fence post, south side	
of road; iron nail painted "6896"	6, 895. 80
Mayberry's ranch, on northwest corner of road surrounding house; iron	
post stamped "6866"	6, 866. 240
Mayberry's ranch, 1.20 miles south of, 20 feet west of road on slight ridge;	
top of rock outcrop, painted "6867"	6, 867. 19
Mayberry's ranch, 3.20 miles south of, 15 feet west of road at gate in fence;	
iron post stamped "6796"	6, 795. 545
Mayberry's ranch, 4.70 miles south of, 30 feet west of road, in base of cedar	
tree; copper nail and washer, painted "6805"	6, 804. 76
Mayberry's ranch, 6.70 miles south of, 15 feet west of road, cedar stake;	
copper nail and washer, painted "6793"	6, 792. 88
Mayberry's ranch, 8.20 miles south of, 15 feet west of gate in drift fence;	
iron post stamped "6806"	6, 806. 163
Hubbles ranch, 4.5 miles north of, 15 feet west of road, top of cedar stake;	
copper nail and washer, painted "6804"	6, 804. 45
Hubbles ranch, 3.5 miles north of, at old deserted ranch house, in northeast	
corner of house; iron spike painted "6796"	6, 796. 01
Hubbles ranch, 2.5 miles north of, 11.70 miles south of, 30 feet west of road;	
iron post stamped "6849"	6, 849. 501

	Feet.
Hubbles ranch, 2 miles north of, west side of road in base of gate post; iron nail and washer, painted on gate "6902".....	6, 901. 70
Hubbles ranch, 1 mile north of, 10 feet west of road; top of detached boulder painted "6925".....	6, 925. 02
T. 7 S., R. 14 W., near quarter corner between secs. 16 and 17, Hubbles ranch headquarters, 20 feet north of main building in fence corner; iron post stamped "6921".....	6, 921. 531
Hubbles ranch, 1 mile east of, 15 feet south of road, in top of cedar stake; copper nail and washer, painted "6874".....	6, 874. 21
Hubbles ranch, 2 miles east of, east side of road, northwest corner of wind-mill tower; copper nail and washer painted on tower "6859".....	6, 858. 66
Hubbles ranch, 2.8 miles east of, 25 feet west of gate on fence line; iron post stamped "6840".....	6, 840. 897
Hubbles ranch, 4.8 miles east of, 15 feet south of road, in top of cedar stake; copper nail and washer painted "6804".....	6, 804. 34
Hubbles ranch, 6 miles east of, 30 feet north of road; iron post stamped "6790".....	6, 789. 663
Hubbles ranch, 7 miles east of, 15 feet south of road; cedar stake; copper nail and washer, painted "6784".....	6, 784. 29
Hubbles ranch, 8 miles east of, at "Bat Cave" wells, in southwest corner post of South Mill; copper nail and washer, painted "6783".....	6, 782. 85
Hubbles ranch, 9.8 miles east of, 20 feet south of road on slight ridge; iron post stamped "6805".....	6, 804. 820
Hubbles ranch, 11 miles east of, 100 feet south of road, in base of fence post; iron spike painted "6820".....	6, 819. 91
Fullerton's ranch, 500 feet west of ranch house in fence corner beside gate; iron post stamped "6801".....	6, 801. 436
Fullerton's ranch, 1.40 miles east of, 20 feet south of road, in top of cedar stake; copper nail and washer, painted "6807".....	6, 806. 53
Fullerton's ranch, 2.40 miles east of, 50 feet north of road in base of corner fence post; iron spike painted "6807".....	6, 807. 06
Fullerton's ranch, 3.40 miles east of, 20 feet north of road, in top of cedar stake; copper nail and washer, painted "6809".....	6, 809. 23
Fullerton's ranch, 4.40 miles east of, at Birmingham's ranch, north side of house on fence line; iron post stamped "6812".....	6, 812. 198
Fullerton's ranch, 6 miles east of, 15 feet south of road, in base of cedar post; nail and washer, painted "6821".....	6, 820. 73
Fullerton's ranch, 6.90 miles east of, 15 feet south of road in top of cedar stake; copper nail and washer, painted "6828".....	6, 828. 24
T. 5 S., R. 11 W., 1,500 feet east by 500 feet north of southwest corner of section 29, 8.20 miles east of Fullerton's ranch, 20 feet south of road forks; iron post stamped "6845".....	6, 844. 851
From Hubbles ranch along highways southwest to Collins camp, thence east and southeast to point 3 miles north of V cross T ranch, thence northeast up Railroad Canyon to near Garcia's ranch.	
Hubbles ranch, 50 feet north of house in fence corner; iron post stamped "6921".....	6, 921. 531
T. 7 S., R. 14 W., 600 feet south and 100 feet west of corner to secs. 17, 18, 19, 20, 1.6 miles southwest of Hubbles ranch, 50 feet west of road; top of large square boulder painted "6962".....	6, 962. 39
T. 7 S., R. 15 W., about 800 feet north of quarter corner between secs. 24 and 25, 3.40 miles southwest of Hubbles ranch, 70 feet west of road, opposite water tank, in base of large pine tree on fence line; copper nail and washer; "7027" painted on tank.....	7, 027. 16

T. 7 S., R. 15 W., about 600 feet west of quarter corner between secs. 25 and 26, 4 miles southwest of Hubbles ranch, 25 feet northwest of road; iron post stamped "7071"	Feet.	7,070.786
T. 7 S., R. 15 W., near corner to secs. 27, 28, 33, and 34, 5.20 miles southwest of Hubbles ranch, 30 feet south of road, in base of large pine tree; copper nail and washer, painted "7108"	7,107.98	
T. 7 S., R. 15 W., about 600 feet southeast of quarter corner between secs. 34 and 35, 6 miles southwest of Hubbles ranch, at forks of main road and O Bar O road, west side of road at point of rock bluff; top of rock outcrop painted "7149"	7,148.76	
Tps. 7 and 8 S., R. 15 W., one-half mile southeast of corner to secs. 33, 34, 3 and 4, 7.20 miles southwest of Hubbles ranch, 7.20 miles southwest of, 20 feet north of road, north side of canyon, in top of large detached boulder; bronze tablet stamped "7227"	7,227.549	
Hubbles ranch, 8.50 miles southwest of, west side of road, east side of canyon at toe of ridge, in base of pine tree; copper nail and washer, painted "7299"	7,299.26	
Hubbles ranch, 10 miles southwest of, south side of canyon; in base of large upright rock outcrop painted "7401"	7,401.45	
T. 8 S., R. 15 W., one-half mile northeast of southwest corner of sec. 18, 11.60 miles southwest of Hubbles ranch, 20 feet west of main road, on slight ridge between forks of "Y" Creek; iron post stamped "7500"	7,500.403	
T. 8 S., R. 16 W., 1,400 feet northeast of southwest corner of sec. 24, Collins camp, east side of road at northwest corner of old log cabin; in base of large oak tree; nail and washer, painted "7653"	7,653.34	
Collins camp, 1.30 miles east of, in base of pine tree on summit of slight ridge; iron spike painted "7683"	7,683.55	
Collins camp, 2.50 miles east of, in top of large detached boulder, in open flat; bronze tablet painted "7564"	7,563.703	
Collins camp, 3.10 miles east of, 30 feet north of O Bar O Canyon road; top of rock outcrop painted "7536"	7,535.69	
Collins camp, 3.50 miles east of, 100 feet upstream from road forks, in base of pine tree; copper nail and washer, painted "7548"	7,547.84	
Collins camp, 4.70 miles east of, 30 feet south of road, in base of large pine stump; copper nail and washer, painted "7631"	7,630.77	
O Bar O upper ranch, T. 8 S., R. 15 W., about 700 feet north of corner to secs. 27, 28, 33, and 34, on Continental Divide between drainage of Y and O Bar O canyons, 50 feet west of old cabin of upper ranch, 10 feet south of gate in fence inclosing pasture; iron post stamped "7684"	7,684.042	
O Bar O upper ranch, 1.50 miles east of, 10 feet south of road on slight ridge, in base of pine tree on slight ridge; copper nail and washer, painted "7636"	7,636.48	
O Bar O main ranch, T. 9 S., R. 15 W., 2,000 feet southwest of northeast corner of sec. 3, northeast corner of old log cabin, in top of floor joist; iron spike painted "7630"	7,630.20	
O Bar O ranch, 1 mile east of, 200 feet south of road, south side of stream at forks with stream from south, in base of pine tree; copper nail and washer, painted "7512"	7,511.70	
T. 9 S., Rs. 14 and 15 W., 2,000 feet northeast of southwest corner of sec. 6, 2.50 miles east of O Bar O ranch, 25 feet south of road at junction of main stream and one from south; iron post stamped "7454"	7,454.231	
O Bar O ranch, 3.50 miles east of, 100 feet south of road, north side of creek, in base of large pine tree; copper nail and washer painted "7372"	7,371.75	

O Bar O ranch, 5 miles east of, 300 feet south of road on south bank of stream, in base of pine tree; copper nail and washer, painted "7296"	Feet.	7, 296. 20
T. 9 S., R. 14 W., 2,000 feet southwest of northeast corner to sec. 11, 7 miles east of O Bar O ranch, 20 feet south of road at point where canyon narrows, in top of rock outcrop; bronze tablet stamped "7179"	7, 179. 074	
O Bar O ranch, 8 miles east of, 50 feet north of road on north side of canyon, on top of rock outcrop beside lone cedar tree; chiseled cross painted "7117"	7, 116. 89	
O Bar O ranch, 9 miles east of, 25 feet south of road at point where canyon narrows south side of stream in base of rock outcrop; chiseled cross painted "7061"	7, 060. 73	
O Bar O ranch, 11.10 miles east of, 300 feet north of rock east end of prominent sandstone bluff, in top of large detached boulder; bronze tablet stamped "6976"	6, 975. 816	
O Bar O ranch, 12.50 miles east of, 20 feet north of road, in top of cedar stake; copper nail and washer, painted "6927"	6, 927. 12	
V cross T headquarters, 3 miles north of, 20 feet east of road at forks of O Bar O and railroad canyons; iron post stamped "6901"	6, 900. 726	
V cross T ranch, 5 miles north of, 20 feet west of road, west side of canyon at foot of rock bluff; top of detached boulder, painted on bluff "6963" ..	6, 962. 72	
T. 9 S., R. 12 W., 2,000 feet southeast of northwest corner of sec. 6, 8 miles north of V cross T ranch, 20 feet south of road, 100 feet below entrance of canyon from south, in top of large square detached boulder; bronze tablet stamped "7059"	7, 058. 666	
V cross T ranch, 9 miles north of, west side of road in middle of canyon at Charis's tank; top of detached boulder painted "7103"	7, 102. 88	
V cross T ranch, 10 miles north of, 50 feet west of road in middle of canyon; top of detached square boulder, painted on rock wall "7193"	7, 192. 86	
V cross T ranch, 10.60 miles north of, west side of road in middle of canyon, north end of narrow gorge, in top of large, square, detached boulder; bronze tablet stamped "7201"	7, 201. 220	
V cross T ranch, 12 miles north of, 25 feet south of road; top of detached boulder painted "7251"	7, 250. 59	
V cross T ranch, 13.5 miles north of, east side of canyon at forks of railroad canyon road and north Star Ranges station road; top of large rock outcrop painted "7300"	7, 300. 13	
V cross T ranch, 15 miles north of, 20 feet west of road, at point of sharp jutting rock ridge; top of rock painted "7330"	7, 330. 00	
Garcia's ranch, northeast corner of house; iron post stamped "7348"	7, 347. 606	
Garcia's ranch, 0.60 mile east of, 100 feet north of road at forks, in base of large pine tree; copper nail and washer, painted "7375"	7, 374. 66	

From point 7.4 miles northeast of Garcia's ranch northwest along road down Shaw Canyon to Fullerton's ranch.

Fullerton's ranch, 12.80 miles southeast of, 20 feet south of road on south bank of drain; top of detached boulder painted "7584"	7, 583. 73
Fullerton's ranch, 11 miles southeast of, 20 feet south of road on Continental Divide where road crossed saddle dividing Railroad and Shaw canyons; top of rock outcrop painted "7669"	7, 669. 07
Fullerton's ranch, 9.50 miles southeast of, on Continental Divide, 30 feet north of road, 500 feet east of descent into Shaw Canyon; iron post stamped "7679"	7, 678. 248
Fullerton's ranch, 8.50 miles southeast of, 50 feet north of road, north side of canyon at foot of rock bluff; top of detached boulder painted "7516".	7, 515. 41

Fullerton's ranch, 7.20 miles southeast of, north side of road, on rocky point of ridge extending into canyon, in top of prominent round boulder; bronze tablet stamped "7378".....	Feet.
	7,377.578
Fullerton's ranch, 5.50 miles southeast of, 30 feet northeast of road, in base of pine tree; copper nail and washer, painted "7201".....	7,200.41
Fullerton's ranch, 4 miles southeast of, 30 feet west of road, west side of wash at mouth of canyon; iron post stamped "7050".....	7,049.777
Fullerton's ranch, 2 miles southeast of, 30 feet north of road, in top of cedar stake; copper nail and washer, painted "6880".....	6,879.44
Fullerton's ranch; iron post stamped "6801" (previously described).....	6,801.436

RESERVE QUADRANGLE.

[Latitude $33^{\circ} 30' - 34^{\circ}$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From point 3.2 miles northeast of Aragon southeast along highways to Stephens saw-mill, thence south 12.5 miles.

Aragon, 2 miles northeast of, 500 feet northeast of Romero's ranch, northwest side of road at south side ford of creek; top of detached boulder painted "6786".....	6,786.90
Aragon, 0.5 mile northeast of, Mexican section, in front of store, in top of large detached boulder; painted cross painted "6718".....	6,717.13
Aragon post office, 25 feet northwest of road, 30 feet northeast of Catholic Church; iron post stamped "6686".....	6,687.213
Aragon, 2 miles southwest of, 10 feet northwest of road, on point of ridge, in top of pine stake; copper nail and washer, painted "6600".....	6,600.07
Aragon, 3.2 miles southwest of, in fence corner at bend of road, south side of road, in base of telephone pole; copper nail and washer, painted "6538".....	6,538.90
Aragon, 4 miles southwest of, 120 feet west of fence corner at bend of road, in rock ledge; bronze tablet stamped "6521".....	6,521.601
Aragon, 5.5 miles southwest of, 200 feet north of road, 250 feet east of creek, at creek crossing, in base of corner fence post; copper nail and washer painted "6459".....	6,459.82
Tularosa Creek; water level at crossing Mar. 14, 1915.....	6,419.87
Aragon, 7 miles southwest of, 15 feet west of road, 1,000 feet north of junction of Tularosa and Apache creeks, in top of rock outcrop; bronze tablet stamped "6411".....	6,412.069
Aragon, 8.5 miles southwest of, east side of road, in base of corner fence post; copper nail and washer painted "6399".....	6,399.72
Aragon, 10.2 miles southwest of, west side of road, in base of southeast corner fence post of yard at ranch; nail and copper washer, painted "6348".....	6,349.09
Aragon, 11 miles southwest of, 200 feet west of forks of Reserve and Tularosa ranger station roads, in rock ledge; bronze tablet stamped "6336".....	6,336.841
Reserve, 7.9 miles northeast of, 10 feet south of road on ridge; top of rock outcrop painted "6431".....	6,432.01
Reserve, 6.5 miles northeast of, 10 feet west of road, at foot of steep grade, in base of telephone pole; copper nail and washer, painted "6285".....	6,286.31
Reserve, 5.4 miles northeast of, 6 feet east of road, east bank of Largo Creek at ford, in rock ledge; bronze tablet stamped "6126".....	6,127.089
Reserve, 4 miles northeast of, 20 feet west of road, at creek crossing, in base of telephone pole; copper nail and washer, painted "6039".....	6,040.23
Reserve, 3 miles northeast of, 1,000 feet east of forks of Canyon Largo, 20 feet west of road, north side of slim ridge in top of square boulder; bronze tablet stamped "5988".....	5,988.864

	Feet.
Reserve, 1.8 miles northeast of, north side of drain, 10 feet east of road, at foot of steep grade, in base of pine stump; copper nail and washer, painted "5888".....	5, 889. 52
Reserve, 1 mile northeast of, 50 feet west of road, in base of telephone pole; copper nail and washer, painted "5801".....	5, 802. 38
San Francisco River; water surface at road crossing Mar. 16, 1915.....	5, 735. 6
Reserve, 2 feet north of first door south of post office, in concrete platform in front of grocery store; bronze tablet stamped "5769".....	5, 770. 207
Reserve, 1.5 miles west of, in front of Hood ranger station, in base of pine tree; copper nail and washer, painted "5832"	5, 883. 39
Reserve, 3 miles west of, 2 feet east of road, in base of pine tree; nail and washer, painted "6001"	6, 002. 33
Reserve, 4 miles southwest of, 200 feet north of Walter Jones's stock corral, 10 feet northwest of road, on west bank of creek, in detached boulder; bronze tablet stamped "6121"	6, 121. 932
Reserve, 5.2 miles southwest of, 20 feet southeast of road, in base of pine sapling; copper nail and washer, painted "6194".....	6, 194. 86
Reserve, 6.5 miles southwest of, 20 feet southeast of road, on point of ridge; top of detached boulder in middle of pile of bowlders, painted "6306"	6, 307. 47
Stephens sawmill, 20 feet east of road in front of bunk house, in top of pine stump; copper nail and washer, painted "6254"	6, 254. 82
Stephens sawmill, 0.5 mile south of, on west side and 120 feet upstream from ford of Salisis Creek, at forks of road, in rock ledge; bronze tablet stamped "6174"	6, 175. 312
Stephens sawmill, 2 miles south of, 3 feet west of road, in base of dead pine tree; copper nail and washer, painted "6103"	6, 103. 79
Stephens sawmill, 3 miles south of, 20 feet east of road, 1,000 feet south of summit, in rock outcrop; bronze tablet stamped "6078".....	6, 078. 876
Stephens sawmill, 3.5 miles south of, 20 feet east of road, 100 feet below forks of Salisis Creek; top of detached boulder painted "5927".....	5, 927. 97
Stephens sawmill, 5.5 miles south of, west side of road, 50 feet west of creek, in large black boulder; bronze tablet stamped "5721".....	5, 722. 056
Stephens sawmill, 7 miles south of, west side of road, west bank of creek, 150 feet south of ranch house; top of detached boulder painted "5601"	5, 602. 59
Stephens sawmill, 8.8 miles south of, at southeast corner of wooden culvert across small ravine; top of boulder painted "5584".....	5, 584. 59
Stephens sawmill, 10 miles south of, 2,000 feet west of summit of Salisis Hill, 10 feet west of road, in rock ledge; bronze tablet stamped "6072"	6, 073. 223
Stephens sawmill, 10.2 miles south of, summit of Salisis Hill, in top of dead cedar stump; copper nail and washer, painted "6154"	6, 154. 97
Stephens sawmill, 11 miles south of, 10 feet north of road, on ridge, in top of boulder; copper nail painted "5966"	5, 966. 86
Stephens sawmill, 11.8 miles south of, 50 feet south of road, in dry wash; top of detached boulder painted "5553".....	5, 554. 21
Stephens sawmill, 12.5 miles south of, 28 feet northwest of road, 50 feet northeast from dry wash, in top of detached boulder; bronze tablet stamped "5471"	5, 472. 141

From Reserve south along highways 5.7 miles to Cordova ranch (spur line leveled twice).

Reserve, in front of store one door south of post office, in concrete platform; bronze tablet stamped "5769"	5, 770. 207
Reserve, 1 mile south of, east side of road at bend, in base of corner fence post; copper nail and washer, painted "5754"	5, 754. 84

Frisco, Upper Plaza, in front of M. D. Romero's store, in base of telephone pole; nail and copper washer painted "5716".....	Feet.
	5,716. 61
Keihnier's ranch, west side of road, in front of ranch house, in brace to corner fence post; copper nail and washer, painted "5687".....	5,688. 23
Keihnier's ranch, 0.8 mile south of, 1,000 feet north of junction of Tularosa and San Francisco rivers, at forks of Negrito ranger station trail, west side of road, at point of ridge; bronze tablet stamped "5652".....	5,652. 897
Frisco, Lower Plaza, east side of road, at tin-roofed house, in fence corner; copper nail and washer, painted "5649".....	5,650. 47
Frisco, Lower Plaza, 0.8 mile south of, west side of road, at north end of lane, in base of corner fence post; nail and copper washer painted "5636".....	5,636. 87
Cordova's ranch, 200 feet south of, on point of ridge, 300 feet west of river, in prominent boulder; bronze tablet stamped "5639".....	5,640. 231

From point 3.2 miles northeast of Aragon northwest along highway to point near Gallo Spring.

Aragon, 3.2 miles northeast of, 20 feet south of road, at forks of Sand Flats and Reserve roads, in top of large detached boulder; bronze tablet stamped "6852".....	6,853. 176
Aragon, 3.9 miles north of, 20 feet north of road, summit of steep grade; top of rock outcrop painted "7217".....	7,218. 28
Aragon, 4.6 miles north of, 20 feet west of road, 200 feet north of road fork; top of rock painted "7218".....	7,218. 76
Aragon, 5.5 miles north of, 120 feet north of road, south bank of creek, at Costillo's ranch, in rock ledge; bronze tablet stamped "7151".....	7,151. 845
Aragon, 6.4 miles north of, 20 feet west of road, on highest point of ridge; top of outcrop painted "7303".....	7,303. 30
Aragon, 8.2 miles north of, 50 feet west of road, at point of ridge; top of black boulder painted "7282".....	7,282. 41
Aragon, 9.7 miles north of, 100 feet north of road; top of rock outcrop painted "7377".....	7,377. 56
Aragon, 10.2 miles northwest of, east side of road, near head of Sand Flats Canyon, in rock ledge; bronze tablet stamped "7458".....	7,458. 909
Aragon, 12 miles northwest of, north side of road, on steep grade; top of detached boulder painted "7709".....	7,709. 67
Aragon, 12.4 miles northwest of, 50 feet north of road; top of rock outcrop painted "7829".....	7,829. 91

From point near Gallo Spring southwest along highways to Luna, thence southeast to Stephens sawmill.

Gallo Lake, 3.3 miles southwest of, south side of road, on slim ridge, in top of cedar stump; copper nail and washer, painted "7754".....	7,754. 60
Gallo Lake, 5 miles southwest of, 10 feet east of road; top of rock outcrop painted "7741".....	7,742. 13
Gallo Lake, 6 miles southwest of, 150 feet north of crossroads Salt Lake and Luna road, 10 feet west of road; top of rock outcrop painted "7682".....	7,682. 41
Gallo Lake, 6.5 miles southwest of, 100 feet northeast of road forks Jewett ranger station and main roads, 20 feet east of road, in top of rock outcrop; bronze tablet stamped "7621".....	7,621. 802
Gallo Lake, 7 miles southwest of, 10 feet west of road, at top of steep grade; top of rock painted "7591".....	7,592. 06
Gallo Lake, 8.5 miles southwest of, 20 feet north of road, in southwest corner sill of deserted log house; copper nail and washer, painted "7296".....	7,296. 42
Gallo Lake, 10 miles southwest of, 25 feet west of road, on point of low ridge; top of rock outcrop painted "7369".....	7,369. 52

	Feet.
Gallo Lake, 11.4 miles southwest of, 50 feet south of road, south bank of creek at narrow gap, in top of large detached square boulder; bronze tablet stamped "7410".....	7,411.342
Gallo Lake, 13 miles southwest of, west side of road, in base of corner fence post; copper washer and nail painted "7546".....	7,546.46
Gallo Lake, 14 miles southwest of, 20 feet west of road, on summit of ridge; top of rock outcrop painted "7659".....	7,660.30
Gallo Lake, 15.6 miles southwest of, 30 feet north of road, on point of ridge, in top of prominent rock outcrop; bronze tablet stamped "7635".....	7,636.317
Gallo Lake, 16.7 miles southwest of, 50 feet north of road, on steep grade; top of large detached boulder painted "7496".....	7,496.63
Luna, 14.5 miles northeast of, west side of road, at forks of drains, in base of corner fence post; nail and copper washer, painted "7172".....	7,172.98
Luna, 13.5 miles northeast of, 20 feet north of road, on point of ridge, in rock ledge; bronze tablet stamped "7174".....	7,174.731
Luna, 12 miles northeast of, south side of road, on ridge; top of rock painted "7233".....	7,234.40
Luna, 11 miles northeast of, 20 feet east of road, at foot of hill, in base of large pine tree; copper nail and washer, painted "7231".....	7,232.41
Luna, 9.5 miles northeast of, 10 feet west of road, on point of rocky ridge, in top of rock outcrop; bronze tablet stamped "7173".....	7,173.997
Luna, 8.5 miles northeast of, 50 feet south of road, at creek crossing; top of large boulder painted "7062".....	7,063.31
Luna, 7.7 miles northeast of, 20 feet west of road, on summit of ridge, in base of small pine tree; copper nail and washer, painted "7139".....	7,139.47
Luna, 6.7 miles northeast of, north side of road, at south end of lane, in top of brace to corner post; copper nail and washer, painted "7095".....	7,095.73
Luna, 5.2 miles northeast of, 50 feet east of road, at narrow gap in hills, in rock ledge; bronze tablet stamped "7301".....	7,302.016
Luna, 4.5 miles northeast of, north side of road, on summit of slim ridge, in base of small pine tree; copper nail and washer, painted "7433".....	7,433.89
Luna, 3.5 miles north of, 10 feet north of road, 200 feet northeast of creek, in base of pine tree; copper nail and washer, painted "7293".....	7,293.94
Luna, 2.7 miles north of, 20 feet east of road, on summit of ridge, on north side of Trout Creek; top of rock painted "7412".....	7,412.76
Luna, 2.3 miles north of, north side of road, on summit of ridge, south side of Trout Creek, in base of pine tree; copper nail and washer, painted "7424".....	7,425.00
Luna, 1.5 miles north of, northeast side of road at forks, in base of pine tree; copper nail and washer, painted "7204".....	7,204.53
Luna, 1 mile north of, 20 feet west of road, 100 feet south of creek crossing, in gap at point of ridge, in rock ledge; bronze tablet stamped "7142".....	7,142.710
Luna post office, north side of store, in top of piñon stake; copper nail and washer, painted "7059".....	7,059.94
San Francisco River; water level at crossing Apr. 13, 1915.....	7,013.2
Luna, 1.4 miles southeast of, 10 feet south of road, in top of pine stump; copper nail and washer, painted "7012".....	7,012.52
Luna, 2.1 miles southeast of, west side of creek, east side of road, in base of pine tree; railroad spike painted "7074".....	7,075.39
Luna, 3.3 miles southeast of, 60 feet east of road, in prominent detached boulder; bronze tablet stamped "7156".....	7,157.197
Luna, 5 miles southeast of, east of road, in stream at gorge; top of boulder painted "7312".....	7,312.87
Luna, 6 miles southeast of, east side of road, on point of ridge; top of rock painted "7602".....	7,603.27

Luna, 7 miles southeast of, 10 feet south of road, on summit of slim ridge, in base of pine tree; copper nail and washer, painted "7846".....	Feet. 7,846.83
Luna, 7.5 miles southeast of, 50 feet northeast of road, on summit of San Francisco Range, in top of large rock outcrop; bronze tablet stamped "8009".....	8,010.325
Luna, 8.5 miles southeast of, north of road, on point of ridge; top of rock painted "7768".....	7,768.96
Luna, 9.2 miles southeast of, north side of road; top of rock outcrop painted "7560".....	7,561.03
Stephens sawmill, 4.5 miles northwest of, south side of road, on summit of ridge, in top of rock outcrop; bronze tablet stamped "7671".....	7,672.128
Stephens sawmill, 3.5 miles northwest of, 20 feet north of road, at top of steep grade, in top of stump; copper nail and washer, painted "7565".....	7,565.62
Stephens sawmill, 3 miles northwest of, south side of road, on steep grade, in base of juniper tree; copper nail and washer, painted "7283".....	7,283.91
Stephens sawmill, 2 miles northwest of, 30 feet south of road, in base of large juniper tree; copper nail and washer, painted "6574".....	6,574.81
Stephens sawmill, 1.5 miles northwest of, 50 feet south of road, on point of ridge, in top of rock outcrop; bronze tablet stamped "6480".....	6,480.943
Stephens sawmill, 0.8 mile northwest of, north side of road, at Old Liggett ranch, in top of pine stump; copper nail and washer, painted "6321"...	6,321.64
Stephens sawmill, west side of bunk house, in top of large pine stump; copper nail and washer, painted "6254"	6,254.82

From point 2.1 miles southeast of Luna southwest 3.8 miles.

Luna, 2.1 miles southeast of, east side of road, west side of creek, in base of large pine tree; railroad spike painted "7074".....	7,075.39
Luna, 3.4 miles south of, west side of road, in base of large pine tree; copper nail and washer, painted "7166"	7,167.46
Luna, 4.6 miles south of, east side of road, in base of pine tree; copper nail and washer, painted "7305"	7,306.18
Luna, 5.6 miles south of, 20 feet east of road, on summit of Blue Hill, in top of black rock outcrop; bronze tablet stamped "7465"	7,466.473
Luna, 5.9 miles south of, 30 feet east of road, in base of small juniper tree halfway of steep grade; copper nail and washer, painted "7156"	7,157.07

Ojo Caliente, Tohatchie, and Zuni quadrangles (including Fort Wingate Military Reservation and Zuni Indian Reservation).

MCKINLEY AND VALENCIA COUNTIES.

The following elevations were determined by primary leveling by the United States General Land Office in 1911 and 1912 and accord with the 1912 adjustment.

The leveling was adjusted by the United States Geological Survey and orthometric corrections were applied.

OJO CALIENTE QUADRANGLE.

[Latitude $34^{\circ} 30' - 35^{\circ}$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From a point 6 miles north of Ojo Caliente along highways southwest and southeast to that place, thence northeast toward Zuni (leveled twice except last part, 6 to 8 miles south of Zuni).

Zuni, 8.4 miles southwest from, 40 feet north of road, in top of first cedar stump from west; nail.....	Feet. 6,263.90
Zuni, 8.72 miles southwest from, 300 feet east of top of hill, 6 feet south of road; boulder 24 by 24 inches marked "6274".....	6,271.72

Zuni, 9 miles southwest from, 4 feet south of road, on rock ledge marked "6262".....	Feet.
	6, 259. 40
Zuni, 10.58 miles southwest from, 100 feet south of road, 8 feet northwest of cedar tree; in top of cedar post; nail.....	6, 190. 06
T. 8 N., Rs. 20 and 21 W., closing corner of, on second standard parallel; top of 3-inch iron post stamped erroneously "6240".....	6, 138. 679
T. 9 N., Rs. 20 and 21 W., standard township corner at; top of 3-inch iron post marked "6129".....	6, 127. 268
T. 8. N., R. 20 W., one-sixteenth corner No. 9 center SW. $\frac{1}{4}$ sec. 7; iron post marked "6182".....	6, 179. 93
Ojo Caliente, in southeast end of village of, 50 feet north of road, south of rocky ledge and sheep corral, also the quarter-section corner between secs. 17 and 20, T. 8 N., R. 20 W.; iron post 3 inches in diameter stamped "6273".....	6, 270. 407
T. 8 N., R. 20 W., quarter-section corner between secs. 15 and 16; iron post marked "6340".....	6, 337. 54
Ojo Caliente, 2.8 miles northeast from, 200 feet west of corner of fence, 60 feet north of road, at foot of mound of stqne; cedar peg.....	6, 425. 22
Indian House, 200 feet east of, 100 feet east of bend in road at the end of rocky point from the south; on rock marked "6481".....	6, 478. 73
Dry Wash, west side of, 30 feet southeast of road, rock marked "6436".....	6, 534. 76
T. 9 N., Rs. 19 and 20 W., on top of standard township corner; 3-inch iron post stamped "6645".....	6, 644. 039
Ojo Caliente, 7.2 miles northeast from, 8.6 miles south of Zuni at the head of draw, 2 feet east of road, in foot of cedar tree; nail in notch marked "6709".....	6, 707. 95
Zuni, 7 miles south of, 3 feet east of center of road, north side of open space, in base of tree; nail.....	6, 882. 11
Zuni, 6.35 miles south of, 60 feet north of summit of low ridge, 4 feet west of center of road, in base of stump; nail.....	6, 859. 91
From a point 5 miles northeast of Ojo Caliente east along township line road 6 miles, thence north toward Old Zuni. (The line was leveled twice with the exception of 4 miles, from 2 miles north to 2 miles west of township corner on third guide meridian.)	
T. 9 N., R. 19 W., standard corner of secs. 31 and 32; iron post (secondary bench mark) marked "6744".....	6, 742. 85
T. 9 N., R. 19 W., standard corner of secs. 32 and 33; iron post (secondary bench mark) marked "6831".....	6, 830. 18
T. 8 N., R. 19 W., quarter closing corner section corner on second standard parallel; iron post (secondary bench mark) marked "6942".....	6, 941. 18
T. 9 N., R. 19 W., standard corner sec. 33, B 4 (secondary bench mark) marked "6981".....	6, 980. 00
T. 9 N., R. 19 W., standard corner secs. 34 and 35 (secondary bench mark) marked "7099".....	7, 101. 75
Tps. 8 and 9, N., R. 19 W., reservation boundary closing corner secs. 1 and 36; iron post stamped "7272".....	7, 275. 224
T. 9 W., Rs. 18 and 19 W., reservation boundary and range line between, 50 feet northeast of closing corner secs. 31 and 36, at foot of mound of stone, in rock ledge; aluminum tablet stamped "7207".....	7, 207. 241
Blackrock, 12.90 miles south of, on large rock east side of trail, 20 feet west of wash; cut in stone marked "T. B. M.".....	6, 875. 00
Blackrock, 11.03 miles south of, 40 feet south of wash, 15 feet north of trail, 50 feet northwest of square boulder 7 by 10 by 10 feet; on top of big rock marked "6751".....	6, 754. 40

Blackrock, 10.70 miles south of, 60 feet north of section line, 30 feet east of wash; on rock marked "6704"	Feet.
Blackrock, 8.34 miles south of, west of road, on east side of stump; on stone.	6, 595. 45

TOHATCHI QUADRANGLE.

[Latitude 35° 30'-36°; longitude 108° 30'-109°.]

Near Wingate station.

Wingate station, 1 mile south of, in southeast corner of bridge, at end of sill for railing; nail	6, 759. 33
Wingate station, in front of; top of rail	6, 743. 7
Wingate station, 100 feet south of, 4 poles west of milepost 147, on iron post; a 3-inch red metal cap (U. S. C. & G. S. b. m. L)	6, 739. 819

Near Gallup.

Gallup, at the southeast corner of Railroad Avenue and Second Street, 10½ poles east of milepost 158, about 62 feet south of the center of the south track of the Atchison, Topeka & Santa Fe Ry., 5 feet east of telephone pole, in top of stone post; bottom of chiseled square, lettered "U. S. B. M." (U. S. C. & G. S. b. m. G)	6, 506. 486
At turn of road, below bend; on big rock (secondary bench mark)	6, 586. 94
Gallup, 1.06 miles south of, opposite bend in road, 20 feet east of road, 4 feet west of ledge, 30 feet northeast of telephone pole, by the side of a pile of rocks; on large rock	6, 643. 94
Gallup, 1.79 miles south of, on small bridge over small ravine, in west floor, fifth plank from south end; nail	6, 705. 18

ZUNI QUADRANGLE.

[Latitude 35°-35° 30'; longitude 108° 30'-109°.]

From point near Gallup south along highway to Black Rock, thence northeast to point near Wingate station. (The part of this line from Junction east of Black Rock to point near Nutrias was leveled twice.)

Gallup, 2.97 miles south of, 6 feet east of center of road, top of steep grade, 11 feet south of cedar tree 1 foot in diameter, in large flat rock ledge; bronze tablet stamped "6857"	6, 857. 995
Divide, 200 feet south of, 30 feet east of road, 10 feet west of path leading southwest, at dead cedar stump, in rock pile; on rock marked "6961"	6, 962. 12
Gallup, 3.9 miles south of, 50 feet north of sharp turn to left in road, 20 feet east of road, east side of road; temporary bench mark marked "6869"	6, 869. 90
Gallup, 4.3 miles south of, 150 feet north of gulch, 15 feet east of lone pine tree, 40 feet west of road; on rock	6, 783. 82
Gallup, 5.4 miles south of, west side of road near top of small knoll, in telephone pole; nail	6, 722. 32
Gallup, 5.7 miles south of, west side of road, 20 feet east of pine tree cut off at the top; on rock	6, 689. 95
Gallup, 6.2 miles south of, on top of small hill, 15 feet east of center of public highway, 25 feet south of small pine tree 1 foot in diameter, in flat rock ledge; bronze tablet stamped "6690"	6, 690. 727
Gallup, 6.9 miles south of, at top of small hill, east side of road; on large flat rock	6, 736. 49
Gallup, 9.14 miles south of, north of bridge west side of road over gulch 20 feet deep	6, 759. 88

Gallup, 10.2 miles south of, 25 feet northwest of T. A. Fabros's ranch house, 50 feet east of center of public highway Gallup to Blackrock, 6 inches above ground; iron post stamped "6895".....	Feet.	6, 895. 548
Gallup, 11.10 miles south of, 200 feet south of small hill, in telephone pole; nail.....		6, 955. 51
Gallup, 11.7 miles south of, 20 feet west side road near bunch of pine trees; on rock.....		7, 035. 62
Gallup, 13 miles south of, 50 feet west of road, 40 feet northwest of pine tree 30 inches in diameter, on rock ledge bearing northeast and southwest; bronze tablet stamped "7183".....		7, 183. 430
Gallup, 13.9 miles south of, 5 feet north of small pine tree on east side of road, in ground; top of broken buggy step.....		7, 286. 12
Gallup, 15.8 miles south of, 40 feet south of small drain, east side of road course southwest, in telephone pole; nail.....		7, 234. 43
Gallup, 16 miles south of, 30 feet east of road, 20 feet northeast of small pine 1 foot in diameter, 70 feet southeast from telephone pole, in rock beside pile of rocks; bronze tablet stamped "7241".....		7, 241. 636
Gallup, 17 miles south of, 30 feet east of road in valley where it is crossed by telephone line, in base of post; nail.....		7, 115. 84
Gallup, 18 miles south of, on east side of road, in base of second telephone pole south from hilltop; nail.....		7, 107. 37
Gallup, 19.3 miles south of, 5 feet northeast of two pine trees, 18 inches in diameter at forest ranger's cabin at Whitewater, in flat rock ledge; bronze tablet stamped "7076".....		7, 077. 231
Gallup, 20.2 miles south of, on east side of road and 40 feet west of drain; top of big boulder.....		7, 116. 22
Gallup, 21.2 miles south of, in foot of pine on west side of road; nail.....		7, 183. 70
Gallup, 23 miles south of, 10 feet west of forks of roads leading to Zuni and Blackrock, set 2½ feet in ground; iron bench-mark post, stamped "7223".....		7, 224. 196
Gallup, 24 miles south of, 120 feet west of road, in root of tree; nail.....		7, 211. 78
Blackrock Dam, 8.7 miles north of, 1 mile north of Vanderwagen's ranch, on east side of deep arroyo between sandstone bluffs, 100 feet east of road and 100 feet north of old fence, set 2½ feet in ground; standard 3-inch iron post, stamped "6852".....		6, 853. 209
Blackrock Dam, 6.3 miles north of, at summit of "bad land" hill and 12 feet west of center of road, set 2½ feet in the ground; standard township corner post stamped "6744".....		6, 745. 266
Blackrock Dam, 3.2 miles northwest of, 500 feet south of north boundary of Zuni Indian Reservation, at junction with Zuni and Gallup road, in SW. ¼ SW. ¼ sec. 2, T. 10 N., R. 19 W.; standard township corner post stamped "6486".....		6, 486. 871
Blackrock Dam, 0.3 mile northwest of; top of rock below road.....		6, 421. 59
Blackrock Dam, United States Indian Office bench mark (6305.03) on north end of Blackrock Dam; hump on rock (no marks).....		6, 442. 84
Blackrock Dam, on west wing wall of, leaded into masonry; iron bolt.....		6, 447. 80
Blackrock post office, southwest corner of Indian school building, cemented into lava rock 1 foot square set 4 feet in ground, 4 inches above surface of ground; tablet stamped "6455".....		6, 455. 515
T. 10 N., R. 19 W., one-sixteenth section corner at center of NE. ¼ sec. 24; top of iron post.....		6, 449. 73
T. 10 N., Rs. 18 and 19 W., meander corner fractional secs. 19-24; top of iron post stamped "6440".....		6, 441. 24
Blackrock Dam, 1.2 miles east of, 10 feet south of road, 200 feet east of point where line crosses road, in telephone pole; nail marked "6438.907".....		6, 439. 93

Blackrock Dam, 1.4 miles east of, meander corner fractional sec. 19, T. 10 N., R. 19 W.; top of iron post stamped "6436".....	6,437.33	Feet.
Blackrock Dam, 1.7 miles east of, on right bank of arroyo 60 feet north of road, in telephone pole; nail marked "6445".....	6,446.38	
Blackrock Dam, 2.2 miles east of, meander corner of fractional secs. 19 and 20, T. 10 N., R. 18 W.; top of iron post stamped "6436".....	6,436.77	
Blackrock Dam, 2.6 miles east of meander corner sec. 17, T. 10 N., R. 18 W.; top of iron post stamped "6435".....	6,435.64	
Blackrock Dam, 3.2 miles east of, where line crosses road, in foot of telephone pole; nail marked "6510"	6,511.08	
Blackrock Dam, 3.3 miles east of, 20 feet north of road, in cut at bottom of pinon tree 12 inches in diameter; nail marked "6527".....	6,528.45	
Blackrock Dam, 4.7 miles east of, at prominent needle of white sandstone 75 feet high, northwest of high mesa, in SE. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 15, T. 10 N., R. 18 W., in niche in west side of needle about 1 foot above ground; aluminum tablet stamped "6565".....	6,566.010	
Blackrock Dam, 6.3 miles northeast of, about 800 feet north of junction of Nutria and Zuni rivers, 15 feet west of Nutria road; on large rock.....	6,559.55	
Blackrock Dam, 6.7 miles northeast of, at northeast corner of SW. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 2, T. 10 N., R. 18 W.; top of post.....	6,560.61	
Blackrock Dam, 7 miles northeast of, south of rocky point running down to creek from the west, 50 feet south of point where road branches to cross Nutria Creek, 10 feet west of Nutria road; 3-inch iron post.....	6,565.604	
Blackrock Dam, 7.6 miles northeast of, T. 10 N., R. 18 W., at northeast corner of NW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 2; top of post.....	6,571.74	
Blackrock Dam, 9.1 miles northeast of, at quarter corner secs. 26 and 27, T. 11 N., R. 18 W.; top of iron post.....	6,602.13	
Blackrock Dam, 9.8 miles northeast of, on low hill about half mile south of hill with two Indian houses on it, 6 feet east of road; 4-inch iron post.	6,641.788	
Blackrock Dam, 11 miles northeast of, 100 feet north of Indian house, 15 feet southeast of road, 2 feet inside of fence; top of large rock.....	6,645.95	
Blackrock Dam, 11.3 miles northeast of, 150 feet south of pine tree at foot of bluff, 30 feet north of road; point on rock.....	6,672.37	
Blackrock Dam, 13.6 miles northeast of, 12 feet north of road; 4-inch iron post stamped "6678".....	6,679.285	
Blackrock Dam, 15.4 miles northeast of, 6 feet north center road where rocky point comes from north; on rock.....	6,699.945	
Blackrock Dam, 17.9 miles northeast of, 40 feet south of intersection of Ramah-Gallup road with Blackrock-Wingate road, about 1.7 miles southwest of lower Nutria village; 4-inch iron post stamped "6750".....	6,750.656	
Blackrock Dam, 18.7 miles northeast of, 25 feet west of road on point of rocky ridge from west; point on rock.....	6,758.68	
Blackrock Dam, 19.2 miles northeast of, first rocky point south of lower Nutria village, 400 feet south of old house, 50 feet west of road; on west edge of large rock.....	6,759.18	
Blackrock Dam, 21.8 miles northeast of, 18.7 miles south of Wingate station, 50 feet north of point where sharp rocky ridge comes from west, 20 feet west of road; 3-inch iron post stamped "6833".....	6,833.459	
Wingate station, 17.3 miles south of, 20 feet west of road, in west side of pinon tree blazed on east side; nail.....	6,964.89	
Wingate station, 17 miles south of, 5 feet from pinon tree, blazed and marked, in middle of road; point on rock.....	7,109.06	
Wingate station, 16.7 miles south of, 8 feet east of pinon, blazed and marked, 8 feet west of center of road, in stump of 5-inch pinon; nail.....	7,300.29	

	Feet.
Wingate station, 16.4 miles south of, at west edge of road, in stump; nail..	7,370.00
Wingate station, 15.93 miles south of, at east edge of road, in base of piñon tree; nail.....	7,546.54
Wingate station, 15.4 miles south of, 20 feet north of road, 15 feet north of oak with rotted blaze, pine blazed south of road; on small rock.....	7,641.82
Wingate station, 15.3 miles south of, 7 feet south of center of road, in base of large pine; nail.....	7,666.09
Wingate station, 14.85 miles south of, 75 feet west of top of low ridge, 3 feet north of road; on rock.....	7,687.82
Wingate station, 14.84 miles south of, top of ridge, 10 feet south of road; top of iron post 3-inches in diameter stamped "7690".....	7,691.281
Wingate station, 14 miles south of, 30 feet west of fork of roads; on top of stump.....	7,673.70
Wingate station, 13.4 miles south of, 8 feet east of center of road, in base of pine; nail.....	7,694.33
Wingate station, 11.7 miles south of, top of low ridge, near head of Limekiln. Flats; top of 3-inch iron post stamped "7754".....	7,755.316
Wingate station, 10.5 miles south of, on top of divide, 50 feet west of road, in base of large pine tree with "T. B. M. 7810" cut in tree; nail.....	7,809.75
Wingate station, 9.9 miles south of, 8 feet east of road, in base of pine tree; nail.....	7,708.37
Wingate station, 8.6 miles south of, 100 feet south of point of low hill from east, 10 feet northeast of road; top of 3-inch iron post stamped "7595".....	7,595.824
Wingate station, 7.2 miles south of, 10 feet north of road; point of rock.....	7,506.24
Wingate station, 6.9 miles south of, 50 feet east of road, in base of pine tree; nail.....	7,498.74
Wingate station, 5.7 miles south of, 50 feet east of road back of piñon and cedar trees on top of ridge, 3 feet east of large rock; top of rock.....	7,395.97
Wingate station, 5.1 miles south of, on top of ridge, 10 feet west of road; top of 3-inch iron post stamped "7443".....	7,444.157
Wingate station, 4.7 miles south of, 5 feet west of wash, at west edge of road; on rock.....	7,263.35
Wingate station, 4 miles south of, 200 feet south of top of hill above Fort Wingate, 20 feet west of road, in cedar tree; nail.....	7,167.82
Wingate station, 3.4 miles south of, at Fort Wingate, across the street from guardhouse, at southeast corner of the east barracks; on southeast corner of stone step.....	7,018.57
Wingate station, 2.34 miles south of, first bridge north of Fort Wingate, 50 feet south of bridge; 8 feet east of road; top of 3-inch iron post.....	6,840.220
Wingate station, 1.65 miles south of, 100 feet southeast of rocky point, 8 feet west of road; on rock.....	6,801.71

From junction 6 miles east of Blackrock along highways east and north to Nutria Creek (leveled twice).

Blackrock, 6.6 miles east of, bridge across Horsehead Canyon, on south side of bridge, under guardrail; on head of spike.....	6,581.94
Blackrock, 6.6 miles east of, 270 feet east of bridge across Horsehead Canyon, 15 feet south of road, 5 feet from telephone pole; iron post stamped "6579".....	6,580.990
Blackrock, 11.1 miles east of, where road crosses telephone line at sign "Zuni Nat'l Forest B. R. 12 mi., Ramah 6 miles," 4 feet east of telephone pole; iron post stamped "6704".....	6,705.294

Piscado village, 1.1 miles east of, 300 feet west of fence; iron post stamped "6826".....	Feet. 6, 826. 690
Nutria crossroads, 9.16 miles southeast of, on point on southeast corner of big rock; temporary bench mark chiseled in rock.....	6, 873. 95
Nutria crossroads, 7.9 miles southeast of, on top of low ridge, northwest of clump of pine trees, 10 feet north of road; on top of 3-inch iron post.....	6, 946. 500
Nutria crossroads, 5.8 miles southeast of, 15 feet north of road on top of low ridge; on top of cedar stump.....	6, 953. 53
Nutria crossroads, 5.4 miles southeast of, 50 feet southeast of cedar tree, 5 feet south of center of road; on rock.....	6, 978. 26
Nutria crossroads, 4.6 miles southeast of, top of first high ridge southeast of Nutria bridge, 10 feet west of road; top of 3-inch iron post stamped "7070".....	7, 071. 516
Nutria crossroads, 3.9 miles southeast of, at northwest corner of dam, in post; nail in knot.....	6, 899. 88
Nutria crossroads, 3.1 miles southeast of, 15 feet west of road, in cedar stump; nail.....	6, 870. 45
Nutria crossroads, 2.5 miles southeast of, northeast corner of bridge, first bridge south of Nutria bridge, in log; nail.....	6, 780. 13
Nutria crossroads, 0.65 mile southeast of, at southwest corner of Nutria bridge, in brace to railing; nail.....	6, 727. 50

From Blackrock southwest to point 6 miles north of Ojo Caliente.

Blackrock, 1.8 miles southwest of post office, Zuni River crossing.....	6, 289. 2
Blackrock, 1.8 miles southwest of post office, on west bank of Zuni River; top of sharp rock.....	6, 289. 45
Zuni, 3 feet east of south entrance of L. L. Sabin's store and 350 feet north of public highway; standard township corner post set 2½ feet in the ground stamped "6281".....	6, 281. 934
Zuni, Zuni River, at bridge; water level (low water) 1911.....	6, 260. 83
Zuni village, north edge of, quarter-section corner sec. 28, T. 10 N., R. 19 W. 6, 282. 86	
T. 10 N., R. 19 W., one-fourth mile north of corner of secs. 28, 29, 32, and 33, one-sixteenth section corner 12, between secs. 28 and 29; secondary bench mark marked "6266".....	6, 266. 84
T. 10 N., R. 19 W., one-fourth mile west of corner of secs. 28, 29, 32, and 33, one-sixteenth section corner 1, between secs. 29 and 32; secondary bench mark marked "6266".....	6, 267. 25
T. 10 N., R. 19 W., about 15 chains east of corner of secs. 29, 30, 31, and 32; W. C. to one-sixteenth section corner 2, between secs. 29 and 32, secondary bench mark.....	6, 258. 05
T. 10 N., R. 19 W., 20 chains south of corner of secs. 29, 30, 31, and 32; one-sixteenth section corner 6, between secs. 31 and 32, marked "6254".....	6, 255. 00
Tps. 9 and 10 N., Rs. 19 and 20 W., corner of; iron post 3 inches in diameter stamped "6236".....	6, 236. 544
West side of road; on stone, secondary bench mark.....	6, 282. 53
Ojo Caliente, 20 feet south of road to, opposite rocky point; on top of boulder 30 by 30 by 30 inches, marked "6333".....	6, 334. 14

From Blackrock south to middle of T. 9 N. (Checked by a line from Zuni to standard corner secs. 35 and 36, T. 10 N., R. 19 W., thence leveled twice.)

Blackrock post office and Indian school building, 4 feet southwest of southwest corner of, in stone 12 by 12 inches; bronze tablet stamped "6455".....	6, 455. 515
T. 10 N., R. 19 W., sec. 24; closing quarter-section corner marked "6444".....	6, 444. 52
T. 10 N., R. 19 W., corner of secs. 23, 24, 25, and 26, secondary bench mark. 6, 343. 98	

T. 10 N., R. 19 W., at the standard corner secs. 35 and 36, 6 inches above ground; iron post 3 inches in diameter stamped "6379," also stamped for section corner.....	Feet.
	6,379.600
T. 9 N., R. 19 W., corner of secs. 1, 2, 11, and 12, secondary bench mark.....	6,382.75
T. 9 N., R. 19 W., corner of secs. 13, 14, 23, and 24, 6 inches above ground; iron post 3 inches in diameter, stamped "6508" and for section corner.....	6,510.479

Shiprock quadrangle a part of Navajo Indian Reservation.

SAN JUAN COUNTY.

The elevations in the following list were determined by primary leveling from Farmington and accord with the 1912 adjustment.

The bench mark at Farmington upon which this work depends is in the cement doorsill of the Pierce Mercantile Co.'s store, an aluminum tablet stamped "371," elevation 5,310.714 feet.

The elevation at Hogback was determined by two lines by the Indian Office from Farmington. Those from Hogback to a point 10 miles west of that place are an average of Reclamation Service and General Land Office levels and the last 5 miles to Shiprock by a single line by the General Land Office.

The Land Office leveling was done in 1913.

Orthometric corrections have been applied and adjustment made by the Geological Survey.

SHIPROCK QUADRANGLE.

[Latitude 36° 30'-37°; longitude 108° 30'-109°.]

From Hogback to Shiprock.

Hogback, 12 miles west of Farmington, on south side of H. Baldwin's house at his store, on west window; square cut (Reclamation Service bench mark).....	Feet.
	5,025.10
Meander corner on the boundary line of Navajo Indian Reservation, north side of San Juan River; 3-inch iron post marked "5025".....	5,025.146
Meander corner to secs. 8 and 9, T. 29 N., R. 16 W., New Mexico principal meridian, on north side of San Juan River; 3-inch iron post marked "5012".....	5,012.021
Blacksmith shop, 30 feet east of, 1,000 feet west of bend gate of canal, on northwest corner of base of large boulder; point of rock (Reclamation Service bench mark).....	5,013.75
Tps. 29 and 30 N., Rs. 16 and 17 W., corner to; top of iron post marked "5040".....	5,040.038
Reclamation office, northwest corner of bridge over canal at; nail.....	4,999.05
Hogback, 3.3 miles west of, on head gate to lateral from canal, southeast corner of top of lateral head gate, concrete abutment station 164 (Reclamation Service bench mark).....	5,000.19
Hogback, 3.7 miles west of, on head gate to lateral from canal, southeast corner of top of lateral head gate, concrete abutment station 192 (Reclamation Service bench mark).....	4,998.52
Tps. 29 and 30 N., R. 17 W., corner to secs. 1, 2, 35, and 36; top of 3-inch iron post marked "4981".....	4,980.790
Bridge over canal, northeast corner of; top of east twin bolt.....	4,996.39
T. 30 N., R. 17 W., center of sec. 35; top of 1-inch iron post marked "5001".....	5,001.05

T. 30 N., R. 17 W., west one-sixteenth section corner of sec. 35; top of 1-inch iron post marked "4996".....	Feet.
	4,995.65
T. 30 N., R. 17 W., meander corner secs. 35 and 36, south side of road; top of 2-inch iron post marked "4987".....	4,986.46
Station 335, at intake of flume; top of invert (Reclamation Service bench mark).....	4,984.79
T. 30 N., R. 17 W., meander corner secs. 27 and 28, south side of road; top of 2-inch iron post marked "4980".....	4,979.41
T. 30 N., R. 17 W., south side of road, one-sixteenth meander corner sec. 28; top of 1-inch iron post marked "4953".....	4,952.92
T. 30 N., R. 17 W., south side of road, meander corner secs. 28 and 29; top of 2-inch iron post marked "4940".....	4,940.05
Baker's store, 1 mile east of, 100 feet north of road ascending to bench, 24-inch pipe culvert; outlet of culvert of drain (Reclamation Service bench mark).....	4,974.42
Baker's store, one-half mile northeast of, on gravel knoll 150 feet south of canal; peg, top of surrounded by mound of stone (Reclamation Service bench mark).....	4,978.63
T. 30, Rs. 17 and 18, meander corner secs. 25 and 30; on south of irrigation canal; iron post.....	4,967.754
T. 30 N., R. 18 W., meander corner secs. 23 and 24; top of 2-inch iron post marked "4971".....	4,971.17
T. 30 N., R. 18 W., meander corner secs. 10 and 15; on east side of road; post marked "4927".....	4,926.57
T. 30 N., R. 18 W., corner to secs. 3, 4, 9, 10; top of 2-inch iron post.....	4,851.33
T. 30 N., R. 18 W., one-quarter corner secs. 3 and 4.....	4,844.26
T. 30 N., and 31 N., R. 18 W., corner to secs. 3, 4, 33, and 34; top of 3-inch iron post.....	4,906.000

APPENDIX A.

ELEVATIONS ADJUSTED BY THE UNITED STATES COAST AND GEODETIC SURVEY FROM PRECISE LEVELING.

Albuquerque, Cerro Verde, Estancia, Gran Quivira, Grant, Houck, Laguna, Lajoya, Los Lunas, Pedernal Mountain, Pintada, Portales, Ricardo, Schroeder, Thoreau, Tohatchi, Tolar, and Zuni quadrangles.

BERNALILLO, GUADALUPE, MCKINLEY, ROOSEVELT, AND VALENCIA COUNTIES.

The following descriptions and elevations are taken from reports of the United States Coast and Geodetic Survey and are republished by permission of the superintendent of that bureau. The bench marks were established by the Coast and Geodetic Survey from precise leveling, and were included in its 1912 adjustment of elevations. They are likely to be changed but slightly by any future adjustment.

PORTALES QUADRANGLE.

[Latitude 34°-34° 30'; longitude 103°-103° 30'.]

From Texico west along Atchison, Topeka & Santa Fe Ry. to St. Vrain.

Texico, on north face or front of railway reinforced-concrete pump station, 0.87 meter east of northeast corner, 1.10 meters west of west side of door, 1.15 meters above ground; copper bolt (C. & G. S. b. m. Q ₂).....	4, 147. 597
Texico, on reinforced-concrete pillar between baggage room and waiting room of railway station, 1.4 meters above flagging; red-metal disk (C. & G. S. b. m. R ₂).....	4, 149. 578
Texico, about 3.8 miles west of, on railway right of way, 33 meters south of center of track, 16 meters southwest of eighth pole west of milepost 651, on west side of road crossing, in fence corner north of lane paralleling railroad on south side; 3-inch red-metal cap on iron post (C. & G. S. b. m. S ₂).....	4, 198. 650
Clovis, about 1.7 miles east of, on railway right of way, 32 meters south of center of track, 19 meters west of milepost 655, 7 meters west of iron marking exact mile, in corner of fence on east side of road crossing; 3-inch red-metal cap on iron post (C. & G. S. b. m. T ₂).....	4, 225. 326
Clovis, on top of southwest footing of Clovis city water tank, one-fourth mile east of railway depot, 18 meters northeast of northeast corner of engine house; copper bolt (C. & G. S. b. m. U ₂).....	4, 257. 055
Clovis, directly opposite and west of west end of railway freight depot, in lawn between depot and Gran Quivira Hotel, 2.7 meters west of west side of freight platform, at elevation of concrete curbing around lawn, 0.75 meter west of east curb, 17 meters north of south curb, 29 meters north of center of main-line track; bottom of hole in top of stone post (C. & G. S. b. m. V ₂).....	4, 262. 770

Clovis, on south face of central pillar of porch on east end of railway reinforced-concrete depot, 20 meters north of center of main-line track, 1.4 meters above brick flagging; red-metal disk (C. & G. S. b. m. W ₂).....	Feet.
	4, 269. 644
Clovis, about 2 miles west of, 38 meters north of center of railway track, in wagon road that crosses track, in line with right-of-way fence, 1.5 meters from west road fence; 3-inch red-metal cap.....	4, 308. 072
Blacktower, about 0.7 kilometer east of, on top of north end of east abutment of railway bridge 661A, in center of abutment 0.55 meter from north end, 0.15 meter south of iron bolt (railway bench mark 4309.60), approximately the same elevation; copper bolt (C. & G. S. b. m. Y ₂).....	4, 309. 617
Blacktower, on right of way at railway depot, 28 meters north of center of operator's window, 22 meters north of center of main-line track; bottom of hole in top of stone post (C. & G. S. b. m. Z ₂).....	4, 319. 588
Blacktower, on north face just west of entrance to waiting room of railway reinforced-concrete depot, 0.3 meter west of west side of door, 1.4 meters above brick flagging; copper bolt (C. & G. S. b. m. A ₃).....	4, 325. 733
Blacktower, about 3.9 miles west of, on railway, opposite fifth telegraph pole west of milepost 666, in wagon-road crossing, 33 meters south of center of track, in line with right-of-way fence, 2 meters east of cattle-guard fence; 3-inch red-metal cap on iron post (C. & G. S. b. m. B ₃).....	4, 358. 669
Blacktower, about 5.9 miles west of, on top of north end of east abutment of railway bridge 668A, in center of abutment, 0.3 meter from north end, 0.1 meter north of round head of iron bolt (railway bench mark 4367.67), at approximately the same elevation; red-metal disk (C. & G. S. b. m. C ₃).....	4, 368. 331
St. Vrain, 1 mile west of, opposite first telegraph pole west of pole marked 674 on railway, 30 meters west of section of rail marking the exact mile 674, in line of right-of-way fence, 34 meters north of center of track, 1 meter west of cattle-guard fence; bottom of hole in top of stone post (C. & G. S. b. m. D ₂).....	4, 397. 980

TOLAR QUADRANGLE.

[Latitude 34°-34° 30'; longitude 103° 30'-104°.]

From St. Vrain west along Atchison, Topeka & Santa Fe Ry. to Taiban.

Melrose, about 0.8 mile east of, opposite fourth pole west of milepost 780 on railway, in a wagon-road crossing, 22 meters north of center of track, 1.5 meters west of fence to cattle guard; 3-inch red-metal cap on iron post (C. & G. S. b. m. E ₃).....	4, 399. 663
Melrose, on south face of center pillar of porch at east end of railway reinforced-concrete depot, 1.3 meters above brick flagging; red-metal disk (C. & G. S. b. m. F ₃).....	4, 398. 987
Melrose, about 1.4 miles west of, on top of north end of concrete abutment of railway bridge 682A over Fiddlers Draw, 0.1 meter south of railway bench mark 4370.40, at approximately the same elevation; copper bolt (C. & G. S. b. m. G ₃).....	4, 370. 864
Cantara, 390 meters west of station sign of railway, 20 meters east of east side of section house, just off right of way, 30 meters south of center of track, 1 meter south of fence; bottom of hole in top of stone post (C. & G. S. b. m. H ₃).....	4, 407. 747
Krider, about 2 miles east of, on top of north end of west concrete abutment of railway bridge 690A over Nixons Draw, 3 meters north of center of track, opposite railway bench mark 4336.62, which is on east abutment; red-metal disk (C. & G. S. b. m. I ₃).....	4, 336. 802

Krider, 30 meters south of railway track at station, just outside right-of-way fence, 50 meters west of gate; 3-inch red metal cap on iron post (C. & G. S. b. m. J ₃).....	Feet.
	4,309.033
Krider, about 2 miles west of, on top of north end of east abutment of railway bridge 694A, 2.75 meters north of center of track, 0.1 meter north of railway bench mark 4283.85 (iron bolt) at approximately the same elevation; copper bolt (C. & G. S. b. m. K ₃).....	4,284.188
Tolar, just outside south right-of-way fence at station; 3-inch red-metal cap on iron post (C. & G. S. b. m. L ₃).....	4,206.730
Tolar, about 1.5 miles west of, on top of north end of east abutment of railway bridge 694A, 0.2 meter south of railway bench mark 4181.87 (iron bolt), 2.8 meters from center of track; red-metal disk (C. & G. S. b. m. M ₃).....	4,182.232

RICARDO QUADRANGLE.

[Latitude 34°-34° 30'; longitude 104°-104° 30'.]

From Taiban west along Atchison Topeka & Santa Fe Ry. to Evanola.

Taiban, one-fourth mile west of railway depot, 10 meters south of center of main-line track, on south face of reinforced-concrete pump house, 0.7 meter from northeast corner, 1.23 meters from east side of doorway, 1 meter above ground; copper bolt (C. & G. S. b. m. N ₃).....	4,125.956
Taiban, three-eighths mile west of, 440 meters west of railway reinforced-concrete pump house, 30 meters south of center of track at east whistling post for a road crossing, just outside of right-of-way fence; bottom of hole in top of stone post (C. & G. S. b. m. O ₃).....	4,122.039
La Lande, about 2.4 miles east of, on top of north end of east abutment of railway bridge 707B, 0.2 meter south of railway bench mark 4168.56 (iron bolt), at approximately the same elevation, 2.7 meters north of center of track; red-metal disk (C. & G. S. b. m. P ₃).....	4,069.070
La Lande, in range with west end of railway reinforced-concrete depot, 50 meters south of southwest corner, 47 meters from center of main-line track, 3 meters south of ditch; 3-inch red-metal cap (C. & G. S. b. m. Q ₃).....	4,115.146
Fort Sumner, about 3.4 miles east of, on top of north end of east abutment of railway bridge 713B, 2.7 meters from center of track, 0.1 meter south of railroad bench mark 4118.00 (iron bolt); copper bolt (C. & G. S. b. m. R ₃).....	4,118.614
Fort Sumner, about 0.7 mile east of, on top of north end of east abutment of railway bridge 716A, at elevation of railroad bench mark 4055.05, 2.7 meters from center of track; red-metal disk (C. & G. S. b. m. S ₃).....	4,056.183
Fort Sumner, 600 meters east of railway depot, on right of way, 25 meters east of east end of passing track, 36 meters east of point of tangency of 4280+10.2, 33 meters north of center of track, 1 meter from north fence, curve 1 meter east of fence to cattle guard; bottom of hole in top of stone post (C. & G. S. b. m. T ₃).....	4,058.922
Fort Sumner, on south face of railway reinforced-concrete depot, near southeast corner, 0.9 meter east of east side of waiting-room door, 1.35 meters above brick flagging; red-metal disk (C. & G. S. b. m. U ₃).....	4,069.939
Fort Sumner, about 0.6 mile west of, on top of north end of west abutment of railway bridge 717A; copper bolt (C. & G. S. b. m. V ₃).....	4,053.151

Fort Sumner, 1.5 miles west of railway depot, at west side of "Old Town," on north side of road, 18 meters north of line of telephone poles, 50 meters west of adobe house (east end of Pecos River bridge bears 8.70° W., a concrete arch bears N. 55° W., distant about 475 meters, and west abutment of railway bridge 717A bears N. 70° E.); U. S. G. S. iron pipe (center of cap battered down about 5 millimeters, but otherwise in good condition) (C. & G. S. b. m. "U. S. G. S. b. m. Fort Sumner).....	Feet. 4, 047. 183
Fort Sumner, about 1.8 miles west of, on top of north end of east abutment of railway bridge 718B, over Pecos River, 2.65 meters north of center of track, 0.40 meter from north end, 0.91 meter from west side of abutment; red-metal disk (C. & G. S. b. m. W ₃).....	4, 079. 592
Fort Sumner, about 2.2 miles west of, on top of north end of west abutment of railway bridge 718B, over Pecos River, 3.5 meters north of center of track; copper bolt (C. & G. S. b. m. X ₃).....	4, 088. 899
Fort Sumner, about 4.2 miles west of, on top of north end of east abutment of railway bridge 721A, 2.7 meters from center of track; copper bolt (C. & G. S. b. m. Y ₃).....	4, 154. 148
Aguda, at east end of short cut on railway right of way, 43 meters west of west line of concrete foundation of section house, 9 meters west of road crossing, 32 meters south of track at mail crane, 1.2 meters from south right-of-way fence; 3-inch red-metal cap on iron post (C. & G. S. b. m. Z ₃).....	4, 258. 128
Ricardo, on east face of pillar in center of east end of porch of railway reinforced-concrete depot, 1.3 meters above ground; red-metal disk (C. & G. S. b. m. A ₄).....	4, 414. 059
Ricardo, about 2.7 miles west of, just off railway right of way, at telegraph pole marked "733," 18 meters east of rail section marking exact mile, 35 meters south of center of track; bottom of hole in top of stone post (C. & G. S. b. m. B ₄).....	4, 469. 174
Evanola, just off railway right of way, 36 meters south of center of track at station sign, 36 meters east of rail section marking mile 737; 3-inch red-metal cap on iron post (C. & G. S. b. m. C ₄).....	4, 579. 548

SCHROEDER QUADRANGLE.

[Latitude 34° 34' 30"; longitude 104° 30'-105°.]

From Evanola west along Atchison, Topeka & Santa Fe Ry. to Cardenas.

Yeso, about 2.9 miles east of, on top of north end of east abutment of railway bridge 741A, at elevation of railway bench mark 4696.07 (iron spike), 2.85 meters from center of track; red-metal disk (C. & G. S. b. m. D ₄).....	4, 696. 365
Yeso, 100 meters west of railway depot, on right of way, just east of road crossing, about 40 meters north of center of main-line track, 0.8 meter from fence; bottom of hole in top of stone post (C. & G. S. b. m. E ₄).....	4, 774. 328
Yeso, one-fourth mile west of railway depot, on top of northeast corner of southeast footing of coal chute, 7.6 meters south of center of main-line track, 2.4 meters south of center of passing track; bottom of hole in horizontal surface (C. & G. S. b. m. F ₄).....	4, 778. 934
Largo, on right of way of railway, 31 meters south of center of track, in range with west end of section house, 0.8 meter from south fence; 3-inch red-metal cap on iron post (C. & G. S. b. m. G ₄).....	4, 967. 254
Largo, about 0.9 mile west of, on top of north end of east abutment of railway bridge 751A, 0.15 meter north of railway bench mark 4991.27 (iron bolt); red-metal disk (C. & G. S. b. m. H ₄).....	4, 991. 958

Buchanan, on railway right of way; 285 meters east of depot, 43 meters south of center of track, in range with west end of section house, 20 meters east of gate in south fence; bottom of hole in top of stone post (C. & G. S. b. m. I ₄).....	Feet.	5, 128. 448
Buchanan, about 0.7 mile west of, on top of north end of east abutment of railway bridge 756A, over Gillespie Draw, 2.6 meters from center of track, 0.15 meter south of railway bench mark 5142.88 (iron bolt); copper bolt (C. & G. S. b. m. J ₄).....	5, 144. 064	
Buchanan, about 2.7 miles west of, on top of north end of east abutment of railway bridge 758C, 2.55 meters from center of track, 0.25 meter south of railway bench mark 5206.57 (iron bolt); bottom of hole in horizontal surface (C. & G. S. b. m. K ₄).....	5, 207. 181	
Cardenas, on railway right of way, 240 meters east of station sign, 78 meters east of east side of section house, 33 meters south of center of main-line track, 6 meters west of gate in south fence; 3-inch red-metal disk on iron post (C. & G. S. b. m. L ₄).....	5, 296. 200	
Cardenas, about 1.2 miles west of, on top of north end of east abutment of railway bridge 762B, over Bonita Draw, 2.93 meters from center of track, 0.13 meter north of railway bench mark 5325.13 (iron bolt); copper bolt (C. & G. S. b. m. M ₄).....	5, 325. 573	

PINTADA QUADRANGLE.

[Latitude 34° 30'-35°; longitude 105°-105° 30'.]

From Duoro west along Atchison, Topeka & Santa Fe Ry. to Encino.

Duoro, on railway right of way, 224 meters east of depot, 46 meters north of center of main line track, 1 meter from fence; bottom of hole in top of stone post (C. & G. S. b. m. N ₄).....	5, 439. 727
Duoro, about 1.7 miles west of, on top of north end of east abutment of railway bridge 770B, 2.8 meters from center of track; red-metal disk (C. & G. S. b. m. O ₄).....	5, 480. 461
Duoro, about 4.6 miles west of, on top of north end of west abutment of railway bridge 773A, 2.85 meters from center of track; bottom of hole in horizontal surface (C. & G. S. b. m. P ₄).....	5, 558. 362
Casaus, on railway right of way, 473 meters east of station sign, 30 meters south of center of track, in range with west side of section house, 52 meters southwest of bridge 775B; bottom of hole in top of stone post (C. & G. S. b. m. Q ₄).....	5, 619. 228
Casaus, about 1.5 miles west of, on top of east end of south retaining wall of double concrete arch 777A of railway, 2.9 meters south of center of track; red-metal disk (C. & G. S. b. m. R ₄).....	5, 663. 237
Iden, on railway right of way, across track from and in range with west end of section house, 31 meters south of center of main-line track, 1 meter from fence; 3-inch red-metal cap on iron post (C. & G. S. b. m. S ₄).....	5, 813. 814
Vaughn, about 2.7 miles east of, on top of west end of north retaining wall of concrete arch 784B on railway, 3.75 meters north of center of track; copper bolt (C. & G. S. b. m. T ₄).....	5, 882. 898
Vaughn, on north face of center pillar of porch of railway depot, 1.4 meters above flagging; red-metal disk (C. & G. S. b. m. U ₄).....	5, 964. 886
Vaughn, on top of west pillar of main entrance to railway reading room; red-metal disk (C. & G. S. b. m. V ₄).....	5, 966. 140
Vaughn, about 1.4 miles west of, just off railway right of way, about 75 meters east of milepost 789, on east slope of knoll opposite rock quarry, 34 meters south of center of track; 3-inch red-metal cap on iron post (C. & G. S. b. m. W ₄).....	5, 981. 797

Vaughn, about 2.9 miles west of, on top of east end of south retaining wall of railway concrete arch 789A, over El Paso & Southwestern R. R. tracks, about 4 meters below rail; red-metal disk (C. & G. S. b. m. X ₄).....	Feet.	6,000. 418
Tejon, 30 meters west of west end of passing track, on top of east end of north retaining wall of railway concrete arch 792A; bottom of hole in horizontal surface (C. & G. S. b. m. Y ₄).....		6,089. 948
Carnero, about 2.2 miles east of, on top of south retaining wall of double concrete arch 795A, on railway, 4.6 meters from center of track; red-metal disk (C. & G. S. b. m. Z ₄).....		6,180. 834
Carnero, 247 meters west of station sign, on top of north end of east abutment of railway bridge 798A, 2.68 meters from center of track; red-metal disk (C. & G. S. b. m. A ₅).....		6,222. 241
Encino, about 3.4 miles east of, on top of north end of east abutment of railway bridge 800A, 2.62 meters from center of track; bottom of hole in horizontal surface (C. & G. S. b. m. B ₅).....		6,159. 614
Encino, on south face or front of railway reinforced-concrete depot, 0.7 meter west of west side of arch on east end of depot, 0.9 meter east of east side of door to waiting room, 1.3 meters above flagging; red-metal disk (C. & G. S. b. m. C ₅).....		6,122. 025
Encino, about 2.2 miles west of, just off railway right of way, 33 meters south of center of track at milepost 806, on north side of wagon road; 3-inch red-metal cap (C. & G. S. b. m. D ₅).....		6,164. 594

PEDERNAL MOUNTAIN QUADRANGLE.

[Latitude 34° 30'-35°; longitude 105° 30'-106°.]

From Negra west along Atchison, Topeka & Santa Fe Ry. to Sillo.

Negra, about 1.8 miles east of, on top of north end of east abutment of railway bridge 806A, 2.9 meters north of center of track; red-metal disk (C. & G. S. b. m. E ₅).....	6,167. 665
Negra, on top of north headwall of railway cast-iron culvert 808B, 3.4 meters from center of track; red-metal disk (C. & G. S. b. m. F ₅).....	6,199. 499
Pedernal, about 2.9 miles east of, on top of north end of east abutment of railway bridge 812A, 2.8 meters from center of track; red-metal disk (C. & G. S. b. m. G ₅).....	6,297. 074
Pedernal, on railway right of way, 32 meters south of center of track, in range with east end of depot; red-metal disk (C. & G. S. b. m. H ₅).....	6,367. 894
Dunmoor, at east end of passing track, 500 meters east of station sign, on top of north end of east abutment of railway bridge 818A, 2.8 meters from center of track; red-metal disk (C. & G. S. b. m. I ₅).....	6,373. 393
Dunmoor, about 2.8 miles west of, on railway right of way, 30 meters south of center of track, at milepost 822, about 110 meters east of point of curve; 3-inch red-metal cap on iron post (C. & G. S. b. m. J ₅).....	6,335. 453
Lucy, about 3.1 miles east of, on top of east end of north retaining wall of double concrete arch 825A, on railway; bottom of hole in horizontal surface (C. & G. S. b. m. K ₅).....	6,218. 823
Lucy, about 0.9 mile east of, on top of north end of east abutment of railway bridge 827A; bottom of hole in horizontal surface (C. & G. S. b. m. L ₅).....	6,172. 153
Lucy, 33 meters south of center of track at railway depot; 3-inch red-metal cap (C. & G. S. b. m. M ₅).....	6,176. 316
Lucy, about 4.2 miles west of, on railway right of way, 32 meters south of center of track at milepost 833; 3-inch red-metal cap (C. & G. S. b. m. N ₅).....	6,097. 281

Silio, on railway right of way, one-eighth mile east of station sign, 28 meters south of center of track at milepost 836; 3-inch red-metal cap on iron post (C. & G. S. b. m. O ₅)	Feet.
	6,084.338

ESTANCIA QUADRANGLE.

[Latitude 34° 30'-35°; longitude 106°-106° 30'.]

From Willard west along Atchison, Topeka & Santa Fe Ry. to Mountainair.

Willard, on south face of railway pump house, 0.20 meter from southwest corner, 150 meters above ground; copper bolt (C. & G. S. b. m. P ₅)	6,095.847
Willard, about one-fourth mile east of railway depot, on right of way, 33 meters south of center of track, 85 meters east of crossing of New Mexico Central R. R. tracks; 3-inch red-metal cap on iron post (C. & G. S. b. m. Q ₅)	6,094.187
Willard, on south face of railway reinforced-concrete depot, 0.60 meter east of east side of waiting-room door, 0.67 meter west of west side of porch arch, 1.27 meters above flagging; red-metal disk (C. & G. S. b. m. R ₅)	6,106.973
Willard, about 3.8 miles west of, on top of east end of north retaining wall of railway concrete arch 845A; red-metal disk (C. & G. S. b. m. S ₅)	6,206.178
Broncho, on railway right of way, 31 meters south of center of track, in range with west side of section house, 0.8 meter from south fence, 5 meters east of east end of passing track; 3-inch red-metal cap (C. & G. S. b. m. T ₅)	6,311.506
Broncho, about 70 meters west of west end of passing track, on top of north end of east abutment of railway bridge 849C; copper bolt (C. & G. S. b. m. U ₅)	6,319.948
Mountainair, about 3.6 miles east of, on top of north end of east abutment of railway bridge 852A; red-metal disk (C. & G. S. b. m. V ₅)	6,387.435
Mountainair, 0.4 mile east of railway depot, on top of south end of east abutment of bridge 855A; copper bolt (C. & G. S. b. m. W ₅)	6,487.195
Mountainair, on south face of railway reinforced-concrete depot, 0.95 meter east of east side of waiting-room door, 0.70 meter west of west side of porch arch, 1.34 meters above the flagging; red-metal disk (C. & G. S. b. m. X ₅)	6,499.219

GRAN QUIVIRA QUADRANGLE.

[Latitude 34°-34° 30'; longitude 106°-106° 30'.]

From Mountainair west along Atchison, Topeka & Santa Fe Ry. to Scholle.

Mountainair, about 1.7 miles west of, on top of north retaining wall of railway concrete arch 857A; copper bolt (C. & G. S. b. m. Y ₅)	6,450.706
Mountainair, about 3.8 miles west of, on top of north end of west abutment of railway bridge 859A; copper bolt (C. & G. S. b. m. Z ₅)	6,332.281
Abo, on railway right of way, 35 meters south of center of track, 0.5 meter from south fence, in range with west side of section house, 30 meters east of bridge 861D; 3-inch red-metal cap on iron post (C. & G. S. b. m. A ₆)	6,155.559
Abo, about 0.6 mile west of, on top of north end of east abutment of railway bridge 862A; red-metal disk (C. & G. S. b. m. B ₆)	6,142.353
Abo, about 2.8 miles west of, on top of north end of east abutment of railway bridge 865D; copper bolt (C. & G. S. b. m. C ₆)	5,979.302
Scholle, about 0.4 mile west of, on top of north end of east abutment of railway bridge 869A; red-metal disk (C. & G. S. b. m. D ₆)	5,801.822
Scholle, about 0.9 mile west of, on top of east end of north retaining wall of railway concrete arch 869B; copper bolt (C. & G. S. b. m. E ₆)	5,767.042

LAJOYA QUADRANGLE.

[Latitude 34°-34° 30'; longitude 106° 30'-107°.]

Near Sais.

Scholle, about 2.5 miles west of, on top of north end of east abutment of railway bridge 871B, first bridge over Rio Abo going down the canyon; red-metal disk (C. & G. S. b. m. F ₆).....	Feet.	5,670.494
Sais (siding), about 1.2 miles east of, on top of north end of west abutment of railway bridge 874A, last bridge over Rio Abo going down the canyon; copper bolt (C. & G. S. b. m. G ₆).....	5,491.200	
Sais (siding), on railway right of way, 54 meters south of center of track, 0.8 meter from fence, 17 meters east of range of east side of section house; 3-inch red-metal cap on iron post (C. & G. S. b. m. H ₆).....	5,444.963	

LOS LUNAS QUADRANGLE.

[Latitude 34° 30'-35°; longitude 106° 30'-107°.]

From Becker northwest along Atchison, Topeka & Santa Fe Ry. to Los Lunas.

Becker, on west face of railway reinforced-concrete pump house, 0.27 meter from northwest corner, 1.17 meters above ground, 0.38 meter north of north side of window, 0.18 meter below window sill; copper bolt (C. & G. S. b. m. I ₆).....	5,180.101
Becker, on south face of railway reinforced concrete depot, 0.80 meter east of east side of waiting-room door, 1.3 meters above flagging; red-metal disk (C. & G. S. b. m. J ₆).....	5,175.944
Bodega, 1 mile west of, 23 meters south of railway track at rail section marking mile 887, 3 meters east of telegraph pole marked "887;" 3-inch red-metal cap on iron post (C. & G. S. b. m. K ₆).....	5,008.464
Madrone, about 2.1 miles east of, 23 meters south of center of railway track, 7 meters west of telegraph pole marked 890, $\frac{1}{4}$ mile west of long cut, on west slope of small sandy knoll; 3-inch red-metal cap (C. & G. S. b. m. L ₆).....	4,917.375
Madrone, on railway right of way, in front of and across the track from section house, 23 meters east of center of track, 4 meters east of ditch, 1 meter above grade of railroad; 3-inch red-metal cap on iron post (C. & G. S. b. m. M ₆).....	4,861.493
Belen, about 2.8 miles east of, on top of north end of east abutment of railway bridge 893A over Rio Grande; red-metal disk (C. & G. S. b. m. N ₆).....	4,811.795
Belen, about 2.7 miles east of, on south end of west abutment of railway bridge 893A over Rio Grande; copper bolt (C. & G. S. b. m. O ₆).....	4,807.553
Belen, about 1.7 miles south of, 50 feet west of junction of railway main line with Belen cut-off, 260 feet south of milepost 934, on 3-inch iron pipe; cross in center of cap (top of the cap was found apparently battered down about 1.5 centimeters, cross in center was, however, taken as benchmark) (U. S. G. S. 4793).....	4,794.124
Belen, on east face of railway pebble-dashed brick depot, 0.64 meter from northeast corner, 1.3 meters above the flagging; red-metal disk (C. & G. S. b. m. P ₆).....	4,810.686
Belen, in sidewalk in center of north arch on east side of porch of railway eating house, a pebble-dashed brick structure, 100 meters east of depot; copper bolt (C. & G. S. b. m. Q ₆).....	4,806.916
Belen, about 1.2 miles north of, 50 feet east of railway tracks at road crossing; cap on 3-inch iron pipe (U. S. G. S. 4808).....	4,809.301

Los Lunas, about 5.7 miles south of, at south end of Mexican town of Los Chaves, 12 meters west of railway track, opposite first pole south of milepost 928, on west side of wagon road paralleling railroad, 3 meters north of large cottonwood tree; cap on 3-inch iron pipe (U. S. G. S. 4821).....	Feet.
	4, 822. 166
Los Lunas, about 3 miles south of, 50 feet east of railway track, 10 feet north of gate; cap on 3-inch iron pipe (U. S. G. S. 4833).....	4, 834. 062
Los Lunas, about 1.7 miles south of, 17 meters west of railway tracks, 160 meters south of milepost 924, 0.5 meter south of right-of-way fence, 7 meters east of cottonwood tree on bank of irrigation ditch, 1.5 meters north of gate and of road crossing; 3-inch red-metal cap on iron post (U. S. C. & G. S. b. m. R ₆).....	4, 839. 554
Los Lunas, 200 meters south of railway station, on east face of stone pump house, 0.34 meter north of southeast corner, 0.34 meter south of window at level of sill, 1.34 meters above ground; copper bolt (C. & G. S. b. m. S ₆).....	4, 856. 404
Los Lunas, 700 feet north of railway station, 60 feet west of track at road crossing, at northeast corner of Solomon Lunas's yard fence; cap on 3-inch iron pipe (U. S. G. S. 4851).....	4, 852. 431
Los Lunas, about 2.7 miles north of, 15 meters east of railway tracks, 15 meters south of gate, 23 meters south of old irrigation ditch; 3-inch red-metal cap (C. & G. S. b. m. T ₆).....	4, 861. 900

From point 0.5 mile east of Rio Puerco southeasterly and northeasterly along Atchison, Topeka & Santa Fe Ry. to point 7 miles south of Albuquerque.

Rio Puerco, 0.5 mile east of, 8 poles east of milepole 34, in steel truss bridge C-34, over Rio Puerco, in north end of west abutment, 3.7 meters north of center of track, 35 centimeters from face, 37 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. E ₂).....	5, 048. 372
Pavo, 1 mile east of, at milepole 32, in steel I-beam bridge C-32, in north end of west abutment, 2.8 meters north of center of track, 38 centimeters from face, 39 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. F ₂).....	5, 113. 865
Pavo, 3 miles east of, 4 poles west of milepole 30, in steel I-beam bridge A-31, in north end of west abutment, 3 meters north of center of track, 40 centimeters from face, 26 centimeters from end of copper stone; bottom of square hole marked "U. S." (C. & G. S. b. m. G ₂)	5, 183. 683
Pavo, 3.5 miles east of, 2½ poles west of milepole 29½, in steel girder bridge C-30, in north end of west abutment, 2.8 meters north of center of track, 40 centimeters from face, 80 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. H ₂).....	5, 198. 589
Sandia, 1.5 miles west of, opposite milepole 25, 4.4 meters north of it, 9.2 meters south of center of track; top of iron post (C. & G. S. b. m. I ₂).....	5, 322. 177
Sandia, 2.5 miles east of, 3 poles east of milepole 21, in steel I-beam bridge C-21, in north end of west abutment, 2.8 meters north of center of track, 40 centimeters from face, 30 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. J ₂)	5, 189. 393
Manzana, 1.2 miles west of, 10½ poles west of milepole 19, in steel girder bridge B-20, in north end of west abutment, 3 meters north of center of track, 33 centimeters from face, 45 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. K ₂).....	5, 112. 952
Manzana, 0.3 mile west of, 3 poles east of milepole 18½, in steel I-beam bridge A-19, in north end of west abutment, 3 meters north of center of track, 40 centimeters from face and 22 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. L ₂)	5, 073. 914

Isleta, 2.2 miles west of, 2 poles east of milepole 15, in steel girder bridge A-15, in north end of west abutment, 3.1 meters north of center of track, 30 centimeters from face, 34 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. M ₂)	Feet.
	4, 986. 719
Isleta, opposite section foreman's house, 13.1 meters east of it, 17.1 meters west of center of main-line track, 28.7 meters north of store of Holmes Supply Co.; bottom of square hole in top of stone post, marked "U. S. B. M." (C. & G. S. b. m. N ₂)	4, 897. 694
Isleta, 2 miles north of, 7 poles south of milepole 913, in steel girder bridge 818 over Rio Grande, in west end of south abutment, 2 meters west of center of track, 53 centimeters from face, 38 centimeters from end of abutment; red-metal disk (C. & G. S. b. m. O ₂)	4, 901. 749

ALBUQUERQUE QUADRANGLE.

[Latitude 35°-35° 30'; longitude 106° 30'-107°.]

From point 7 miles south of Albuquerque north along Atchison, Topeka & Santa Fe Ry. to Albuquerque.

Albuquerque, in east front of Alvarado Hotel, in concrete wall at south side of entrance to lunch room, 12 centimeters from edge of wall, 68 centimeters above sidewalk, 18 meters west of center of west track; red-metal disk (C. & G. S. b. m. P ₂)	4, 957. 034
Albuquerque, at intersection of East Central Avenue and North Edith Street, in southeast corner of grounds of Albuquerque Public Library, 1 meter from stone wall surrounding grounds, 3.5 meters from curbing on West Central Avenue, 4 meters from curbing on North Edith Street; bronze triangulation disk stamped "Lat. 35 05 01, Long. 106 38 30," set in stone post 8 by 8 inches, which is lettered "Azimuth Station" (C. & G. S. b. m. Albuquerque Astro)	4, 987. 851

CERRO VERDE QUADRANGLE.

[Latitude 34° 30'-35°; longitude 107°-107° 30'.]

From point 2.3 miles west of Armijo southeast along Atchison, Topeka & Santa Fe Ry. to point 0.5 mile east of Rio Puerco.

Armijo, 2.3 miles west of, 9 poles east of milepole 56, in steel girder bridge B-56, in north end of west abutment, 3.1 meters north of center of track, 35 centimeters from face, 40 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. V ₁)	5, 616. 554
Armijo, 1.8 miles east of, 7 poles west of milepole 51½, in steel truss bridge B-52, over Rio San Jose, in north end of west abutment, 2.2 meters north of center of track of railroad, 32 centimeters from face and 42 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. W ₁)	5, 523. 794
Armijo, 2.6 miles east of, 2½ poles east of milepole 51, in T-rail bridge B-51, in north end of west abutment, 2.3 meters north of center of track, 33 centimeters from face and 22 centimeters from end of abutment; bottom of square hole marked "U. S." (C. & G. S. b. m. X ₁)	5, 517. 604
Sewanee, opposite milepole 47, 6.9 meters south of it, 24.7 meters south of center of track; top of iron post (C. & G. S. b. m. Y ₁)	5, 450. 566
Sewanee, 3.6 miles east of, near fifth pole west of milepole 43½ and 25.5 meters east of it, in limestone outcrop, 4 meters northeast of center of track; red-metal disk (C. & G. S. b. m. Z ₁)	5, 342. 548
Garcia, 1 mile west of, 5 poles west of milepole 42, in steel girder bridge A-43, in north end of west abutment, 3 meters north of center of track, 31 centimeters from face, 42 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. A ₂)	5, 292. 398

Garcia, 1 mile south of, opposite milepole 40, 8.2 meters west of it, 25.2 meters west of center of track, 1 meter below grade; top of iron post (C. & G. S. b. m. B ₂).....	Feet.
	5,195.325
Garcia, 2 miles east of, 7 poles east of milepole 39, in steel I-beam bridge A-39, in north end of west abutment, 3.4 meters north of center of track, 45 centimeters from face, 60 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. C ₂).....	5,157.913
Rio Puerco, 2 miles west of, opposite milepole 36 and 3.2 meters south of it, 16.2 meters north of center of track, 1 meter below grade; top of iron post (C. & G. S. b. m. D ₂).....	5,097.601

LAGUNA QUADRANGLE.

[Latitude 35°-35° 30'; longitude 107°-107° 30'.]

From point 2 miles east of Cubero easterly along Atchison, Topeka & Santa Fe Ry. to point 2.3 miles west of Armijo.

Cubero, 2 miles east of, 4 poles west of milepole 70, in steel girder bridge A-71 over the San Jose, in north end of west abutment, 3.5 meters north of center of track, 28 centimeters from end and 53 centimeters from face of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. N ₁).....	5,887.620
Laguna, 2.5 miles west of, 3 poles west of milepole 68½, in steel girder bridge A-69, over Rio San Jose, in north end of west abutment, 2.65 meters north of center of track, 44 centimeters from face, 70 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. O ₁).....	5,858.210
Laguna, 0.9 mile west of, at milepole 67, in steel-truss bridge D-67, over Rio San Jose, in north end of west abutment, 3.1 meters north of center of track, 31 centimeters from face, 50 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. P ₁).....	5,832.118
Laguna, 2 poles south of milepole 66, near railroad station and 12.1 meters south of it, 5.8 meters east of center of track, 1.08 meters east of fence line; bottom of square hole in top of stone post marked "U. S. B. M." (C. & G. S. b. m. Q ₁).....	5,797.282
Laguna, on bluff overlooking Rio San Jose, 69.5 meters east of Gunn Bros. gristmill, 11.8 meters from edge of bluff, 139.4 meters east of center of track; bottom of square cut on top of stone post 12 by 12 inches square and having a 1-inch drill hole in center (C. & G. S. b. m. Laguna Astro.)..	5,791.580
Laguna, 2 miles north of, 3 poles south of milepole 64, in steel girder bridge A-65, over Rio San Jose, in west end of south abutment, 3.3 meters west of center of track, 35 centimeters from face, 52 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. R ₁)..	5,739.615
Laguna, 3.1 miles north of, at milepole 63, in steel truss bridge B-63 over Rio San Jose, in west end of south abutment, 3.1 meters west of center of track, 31 centimeters from face, 30 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. S ₁).....	5,715.231
El Rito, opposite milepole 60, 19.1 meters north of center of track, 3.7 meters north of right-of-way fence, 1 meter below grade; top of iron post (C. & G. S. b. m. T ₁).....	5,665.153
El Rito, 3 miles southeast of, 7 poles west of milepole 56½, in steel girder bridge B-57, in north end of west abutment, 3.3 meters north of center of track, 31 centimeters from face, 48 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. U ₁).....	5,627.623

GRANT QUADRANGLE.

[Latitude $35^{\circ}35'30''$; longitude $107^{\circ}30'108''$.]

From point 3 miles southeast of Bluewater along Atchison, Topeka & Santa Fe Ry. to point 2 miles east of Cubero.

Bluewater, 3 miles southeast of, 2 poles east of milepole 104½, in steel girder bridge A-105, in north end of west abutment, 3.3 meters north of center of track, 30 centimeters from face, 41 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. A ₁).....	Feet.	6, 589. 445
Toltec, 1.4 miles southeast of, opposite milepole 100, 29.2 meters south of center of track, 1.6 meters north of right-of-way fence, 1 meter below grade; top of iron post (C. & G. S. b. m. B ₁).....	6, 528. 589	
Grant, 1.8 miles west of, 7 poles east of milepole 98, in T-rail bridge D-98, in north end of west abutment, 2.3 meters north of center of track, 31 centimeters from face, 35 centimeters from end of abutment; copper bolt (C. & G. S. b. m. C ₁).....	6, 516. 660	
Grant, 9½ poles east of milepole 96½, at southwest corner of store of S. Bibo Mercantile Co., 34.6 meters north of center of track, 45 centimeters from west wall of store, 2.2 meters from street corner; top of iron post (C. & G. S. b. m. D ₁).....	6, 466. 286	
Grant, 0.25 mile east of, near fourth pole east of milepole 96, 24.3 meters northwest of it, 30.3 meters north of center of track, 1 meter below grade, a rough stone post 6 by 6 inches square, 15 inches above ground, marking boundary of railroad right of way; top of post was partly smoothed and marked by a square cut marked "U. S." (C. & G. S. b. m. E ₁).....	6, 455. 138	
Horace, 1 mile west of, 7 poles east of milepole 91, in stone arch bridge A-91, in center of south coping, 3.6 meters south of center of track, 20 centimeters from face, 4.8 meters from east end of coping, 1½ meters below grade; bottom of square hole marked "U. S." (C. & G. S. b. m. F ₁).....	6, 376. 562	
Horace, 1.7 miles east of, 1½ poles west of milepole 88, in sandstone outcrop, 2.85 meters north of center of track, 20 centimeters from edge of rock; red-metal disk (C. & G. S. b. m. G ₁).....	6, 291. 165	
McCarty, 1.1 miles west of, 5 poles east of milepole 85, in steel girder bridge D-85, in north end of west abutment, 3 meters north of center of track, 33 centimeters from face, 43 centimeters from end of coping stone; top of iron post (C. & G. S. b. m. H ₁).....	6, 216. 707	
McCarty, 0.8 mile west of, 1 pole west of milepole 84½, in culvert bridge B-85, in coping at northeast corner of bridge, 3.3 meters north of center of track, 11 centimeters from face, 12 centimeters from end of coping; copper bolt (C. & G. S. b. m. I ₁).....	6, 200. 772	
McCarty, 1 pole west of milepole 83½, near a crossing warning sign and 5.33 meters east of it, 9.1 meters north of center of track; top of iron post (C. & G. S. b. m. J ₁).....	6, 164. 988	
Alaska, 0.9 mile west of, 4 poles west of milepole 79, in steel-girder bridge A-80, in north end of west abutment, 3 meters north of center of track, 40 centimeters from face 48 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. K ₁).....	6, 055. 418	
Alaska, 3.5 miles east of, 8 poles east of milepole 75, in steel-girder bridge F-75, in north end of west abutment, 2.7 meters north of center of track, 50 centimeters from face 1.53 meters from end of abutment; bottom of square hole marked "U. S." (C. & G. S. b. m. L ₁).....	5, 988. 010	
Cubero, 0.6 mile west of, 14 poles east of milepole 73, in steel-girder bridge C-73 over Rio Jose, in north end of west abutment, 3.4 meters north of center of track, 32 centimeters from face 48 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. M ₁).....	5, 929. 221	

THOREAU QUADRANGLE.

[Latitude 35°-35° 30'; longitude 108°-108° 30'.]

From point 3.6 miles east of Perea southeasterly along Atchison, Topeka & Santa Fe Ry. to point 3 miles south of Bluewater.

Perea, 3.6 miles east of, 5½ poles west of milepole 138, in steel-girder bridge A-139, in north end of west abutment, 2.9 meters north of center of track, 30 centimeters from face 48 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. M).....	Feet.	6,940.540
Guam, 5 poles west of milepole 136, near railroad station and 31.8 meters east of; opposite station sign, 10.25 meters north of center of track; bottom of square hole in top of stone post marked "U. S. B. M." (C. & G. S. b. m. N).....	6,998.703	
Guam, 3 miles east of, opposite milepole 133, 24 meters south of center of track, 1 meter below grade; top of iron post (C. & G. S. b. m. O).....	7,116.931	
Gonzales, 1.7 miles west of, 4 poles east of milepole 132, in stone-arch bridge B-132, in coping at southwest corner of bridge, 4.2 meters south of center of track, 21 centimeters from face 17 centimeters from end of coping 1½ meters below grade; bottom of square hole marked "U. S." (C. & G. S. b. m. P).....	7,164.048	
Gonzales, 6 poles west of milepole 130, opposite south signboard reading "Continental Divide, elevation 7248 feet" and 1.35 meters north of it, 14 meters south of center of track, 1 meter above grade; top of iron post (C. & G. S. b. m. Q).....	7,253.066	
Gonzales, 0.7 mile east of, 1 pole west of milepole 129½, in stone-arch bridge B-130; in center of north coping, 4.4 meters north of center of track, 20 centimeters from face 4.46 meters from east end of coping, 1½ meters below grade; copper bolt (C. & G. S. b. m. R).....	7,218.149	
Thoreau, 4 poles east of milepole 125½, at southeast corner of store of "The McGaffey Company," 7.6 meters north of center of track, 1.6 meters from corner of store building; bottom of square hole in top of stone post marked "U. S. B. M." (C. & G. S. b. m. S).....	7,133.135	
Thoreau, 1.5 miles east of, 7½ poles east of milepole 124, in steel-girder bridge A-124, in north end of west abutment, 2.8 meters north of center of track; 40 centimeters from face 55 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. T).....	7,063.418	
Chaves, 1 mile east of, opposite milepole 121, 5.5 meters north of it, 18.2 meters north of center of track, at grade; top of iron post (C. & G. S. b. m. U).....	6,972.332	
Baca, 1 mile west of, 4.8 meters north of milepost 116, 15.7 meters north of center of track, 2 meters below grade; top of iron post (C. & G. S. b. m. V).....	6,833.057	
Baca, 1 mile east of, 8 meters southwest of fourth pole east of milepole 114, in limestone outcrop, 14 centimeters from edge of rock, 4.7 meters north of center of track; copper bolt (C. & G. S. b. m. W).....	6,792.368	
Baca, 2 miles east of, 7 poles east of milepole 113, in steel I-beam bridge A-113, in north end of west abutment, 3.4 meters north of center of track, 35 centimeters from face 39 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. X).....	6,750.889	
Bluewater, 3.3 miles northwest of, 9 poles east of milepole 111, in steel-girder bridge A-111, in north end of west abutment, 3.4 meters north of center of track, 31 centimeters from face 36 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. Y).....	6,723.241	
Bluewater, 2.3 miles northwest of, opposite tenth pole east of milepole 110, 15.3 meters south of center of track, 0.5 meter above grade; bottom of square hole in top of limestone post marked "U. S. B. M." (C. & G. S. b. m. Z).....	6,711.663	

TOHATCHI QUADRANGLE.

[Latitude $35^{\circ} 30' - 36^{\circ}$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From point near West Yard east along Atchison, Topeka & Santa Fe Ry. to point 3.6 miles east of Perea.

West Yard, 0.8 mile east of, 11 poles west of milepole 161, in stone-arch bridge A-162, in coping at northwest corner of bridge, 4.8 meters north of center of track, 10 centimeters from face 31 centimeters from end of coping, 2 meters below grade; bottom of square hole marked "U. S." (C. & G. S. b. m. F).....	Feet.
	6, 457. 326
Gallup, $1\frac{1}{2}$ poles east of milepole 158, at southeast corner of intersection of Railroad Avenue and Second Street, 1.6 meters east of telephone pole, 19 meters south of center of south track; bottom of square hole in top of stone post marked "U. S. B. M." (C. & G. S. b. m. G).....	6, 506. 486
Gallup, 1.9 miles east of, 1 pole east of milepole 156, in steel-girder bridge D-156, in north end of west abutment, 3.08 meters north of center of track, 43 centimeters from face 44 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. H).....	6, 547. 716
Gallup, 2.8 miles east of, 1 pole east of milepole $154\frac{1}{2}$, in steel-girder bridge A-155, in north end of west abutment, 3.6 meters north of center of track, 37 centimeters from face 50 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. I).....	6, 566. 385
Zuni, 1.8 miles west of, $3\frac{1}{2}$ poles east of milepole $153\frac{1}{2}$, in steel-girder bridge A-154, in north end of west abutment, 3.24 meters north of center of track, 41 centimeters from face 67 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. J).....	6, 573. 064
Zuni, 1.2 miles east of, $1\frac{1}{2}$ poles east of milepole $150\frac{1}{2}$, in steel-girder bridge B-151, over Rio Puerco, in north end of west abutment, 2.86 meters north of center of track; 38 centimeters from face 53 centimeters from face 53 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. K).....	6, 632. 205
Wingate, 4 poles west of milepole 147, opposite railroad station, 27.5 meters south of center of track, 5 meters east of telegraph pole; top of iron post (C. & G. S. b. m. L).....	6, 739. 819

ZUNI QUADRANGLE.

[Latitude $35^{\circ} - 35^{\circ} 30'$; longitude $108^{\circ} 30' - 109^{\circ}$.]

From point 0.4 mile east of Manuelito northeast along Atchison, Topeka & Santa Fe Ry. to point near West Yard.

Manuelito, 0.4 mile east of, 1 pole west of milepole 173, in steel-girder bridge A-174, in north end of west abutment, 2.8 meters north of center of track, 40 centimeters from face 55 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. C).....	6, 264. 200
Manuelito, 4.2 miles east of, 6 poles west of milepole 170, in steel-girder bridge A-171 over Rio Puerto, in north end of west abutment, 3.06 meters north of center of track, 40 centimeters from face 43 centimeters from end of coping stone; bottom of square hole marked "U. S." (C. & G. S. b. m. D).....	6, 298. 629
Defiance, 0.8 mile west of, 5 poles east of milepole 167, in steel-girder bridge B-167, in north end of west abutment, 3.05 meters north of center of track, 32 centimeters from face 41 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. E).....	6, 360. 915

HOUCK QUADRANGLE.

[Latitude 35°-35° 30'; longitude 109°-109° 30'.]

From point 2.3 miles west of Manuelito northeast along Atchison, Topeka & Santa Fe Ry. to point 0.4 mile east of Manuelito.

Manuelito, 2.3 miles west of, 11 poles east of milepole 178, in steel-girder bridge A-178; in north end of west abutment, 2.5 meters north of center of track, 40 centimeters from face 75 centimeters from end of coping stone; copper bolt (C. & G. S. b. m. A).....	Feet.	6,206.496
Manuelito, 0.3 mile west of, 5 poles west of milepole 174½, in steel-girder bridge A-175, in north end of west abutment, 3.2 meters north of center of track, 35 centimeters from face 25 centimeters from end of coping stone; red-metal disk (C. & G. S. b. m. B).....	6,253.025	

APPENDIX B.

SECONDARY ELEVATIONS.

Secondary elevations from records and topographic maps of the United States Geological Survey, including altitudes of well-known summits and other useful elevations, are given below. These elevations are approximate only and should not be used for accurate work.

Locality.	Quadrangle.	County.	Elevation.
Agua Segura Mesa.....	Bernal.....	San Miguel.....	Feet. 6,044
Alamo National Forest, southeast corner of, on prominent hill; aluminum tablet stamped "6115" (vertical angle bench mark).	Avis.....	Chaves.....	6,115
Angel Canyon, at head of, north side of road; tablet stamped "6653" (vertical angle bench mark).	.....do.....	Otero.....	6,653
Avalanche Peak.....	Santa Rita.....	Grant.....	7,514
Baldy Peak.....	Santa Fe.....	Santa Fe.....	12,623
Bear Mountain.....	Mogollon.....	Grant.....	6,720
Bear Mountain.....	Silver City.....	.....do.....	8,050
Beaver and Kennedy canyons, in forks of, 0.8 mile east of lake in Beaver Canyon, highest part of rocky point, set in rock; aluminum tablet stamped "7178" (vertical angle bench mark).	Camp Vincent.....	Socorro.....	7,178
Bent post office, 2 miles northwest of, on sharp end of high ridge; tablet stamped "7214" (vertical angle bench mark).	Mescalero.....	Otero.....	7,214
Bernal Hill.....	Bernal.....	San Miguel.....	7,020
Big Burro Mountain.....	Silver City.....	Grant.....	8,054
Black Mountain, in rock on highest part, in northwest quarter of sec. 6, T. 11 S., R. 13 W.; bronze tablet stamped "9305" (vertical angle bench mark).	Camp Vincent.....	Socorro.....	9,305
Black Peak.....	Silver City.....	Grant.....	9,020
Cabra Hill.....	Corazon.....	San Miguel.....	5,267
Castle Knob triangulation station.....	Fort Bayard.....	Grant.....	6,885
Century Hill.....	Santa Rita.....	.....do.....	7,317
Cerro Blanco.....	Gallina.....	Rio Arriba.....	8,100
Cerro Colorado.....	Lamy.....	Santa Fe.....	6,800
Cerro Monga.....	Watrous.....	Mora.....	6,564
Cerro Pedernal triangulation station.....	Gallina.....	Rio Arriba.....	9,857
Cerro Pelon.....	Lamy.....	Santa Fe.....	6,874
Cherisco Mesa.....	Corazon.....	San Miguel.....	5,345
Cloudcroft, on high hill on east side of road to Mescalero; tablet stamped "8842" (vertical angle bench mark).	Alamogordo.....	Otero.....	8,842
Cloudcroft, 6 miles northeast of, on bluff north side of road where road from James Canyon joins road in Silver Spring Canyon; tablet stamped "7945" (vertical angle bench mark).	.....do.....	.....do.....	7,945
Cloudcroft pumping station, 2 miles east of, south of James Canyon, on high point of timbered ridge; tablet stamped "8948" (vertical angle bench mark).	.....do.....	.....do.....	8,948
Cooney Peak.....	Mogollon.....	Socorro.....	8,600
Corazon Hill.....	Corazon.....	San Miguel.....	6,228
Coyote triangulation station.....	Mescalero.....	Otero.....	6,300
Cross Mountain.....	Silver City.....	Grant.....	7,451
Dog Canyon, 0.7 mile northeast of, 1 mile west of foothills; tablet stamped "4251" (vertical angle bench mark).	Alamogordo.....	Otero.....	4,251
Domingo triangulation station; tablet stamped "7470" (vertical angle bench mark).	Mescalero.....	.....do.....	7,470
El Cuervo Butte.....	Lamy.....	Santa Fe.....	6,968
Elk Canyon, 5 miles north by 1 mile east of bench mark "8291", on main timbered ridge on north side of Elk Canyon; tablet stamped "8206" (vertical angle bench mark).	Mescalero.....	Otero.....	8,206

Locality.	Quadrangle.	County.	Elevation.
Elk Mountain, on spur of, in boulder on south salient of Elk Mountain; aluminum tablet stamped "8400" (vertical angle bench mark) in northwest quarter of sec. 30, T. 9 S., R. 14 W.	Camp Vincent.....	Socorro.....	Feet, 8,400
Elk Springs, 2 miles above, 1 mile south of pasture gate on Elk Canyon road, on timbered ridge; tablet stamped "8169" (vertical angle bench mark).	Mescalero.....	Otero.....	8,169
Elk Springs, 6.5 miles north of, on timbered hill; tablet stamped "8388" (vertical angle bench mark).	.....do.....	.....do.....	8,388
Elk triangulation station; tablet (vertical angle bench mark).	Avis.....	Chaves.....	6,785
Ensina Spring, 3 miles southwest of, on a hill of timbered ridge; tablet stamped "8097" (vertical angle bench mark).	Hondo.....	Otero.....	8,097
Four-A Mountain.....	Silver City.....	Grant.....	7,747
Fourmile Draw to Pinon Creek, on hill to east of road running from; tablet stamped "5950" (vertical angle bench mark).	Avis.....	Chaves.....	5,950
Gallsteo.....	Lamy.....	Santa Fe.....	6,074
Gallina Peak triangulation station.....	Gallina.....	Rio Arriba.....	8,977
Gomez Peak.....	Silver City.....	Grant.....	7,282
Grouse Mountain.....	Mogollon.....	Socorro.....	10,132
Hanna Mountain.....	.....do.....	.....do.....	6,263
Hamover Mountain.....	Santa Rita.....	Grant.....	7,527
Hermosa Mountain triangulation station.....	.....do.....	.....do.....	7,578
Hickson's ranch, on hill south of new sawmill at, on James Canyon, rock pile built near tablet; tablet stamped "8028" (vertical angle bench mark).	Alamogordo.....	Otero.....	8,028
High Rolls, on side of big rock on north side of road; tablet stamped "6630" (vertical angle bench mark).	.....do.....	.....do.....	6,630
Holt Mountain.....	Mogollon.....	Socorro.....	9,830
Hosta Butte.....	Wingate.....	Bernalillo.....	8,837
Humboldt Mountain.....	Santa Rita.....	Grant.....	7,104
Jacinto Mesa.....	Bernal.....	San Miguel.....	6,701
Kneeling Nun.....	Santa Rita.....	Grant.....	7,653
Lake Peak.....	Santa Fe.....	Santa Fe.....	12,380
La Luz Canyon, on detached end of ridge just south of forks of road in, rock pile near tablet; tablet stamped "7322" (vertical angle bench mark).	Mescalero.....	Otero.....	7,322
Lee's horse camp, on south side of canyon in which it is located, on prominent hill at end of ridge; tablet stamped "5281" (vertical angle bench mark).	Alamogordo.....	.....do.....	5,281
Lily Mountain, in flat boulder on highest part of flat top, timbered hill known by that name; tablet stamped "8934" (vertical angle bench-mark tablet).	Camp Vincent.....	Socorro.....	8,934
Little Burro Mountain.....	Silver City.....	Grant.....	6,625
Malpais Knob, on grass-covered knob, about 3.5 miles northwest of Flying V ranch; boulder; aluminum tablet stamped "8335" (vertical angle bench mark).	Camp Vincent.....	Socorro.....	8,335
Maxson Crater.....	Watrous.....	Mora.....	7,360
Mayhill post office, 4 miles a little north of east of, on highest point of very prominent hill at end of long ridge; tablet stamped "7014" (vertical angle bench mark).	Avis.....	Otero.....	7,014
Mayhill post office, 2 miles northwest of, on prominent timbered hill of long ridge; tablet stamped "7768" (vertical angle bench mark).	Alamogordo.....	.....do.....	7,768
Mescalero, in concrete at base of flagpole; tablet stamped "6627" (vertical angle bench mark).	Mescalero.....	.....do.....	6,627
Mining Mountain.....	Gallina.....	Rio Arriba.....	9,624
Mogollon Peak, triangulation station.....	Mogollon.....	Socorro.....	10,778
Mule Canyon, on main ridge east of, on highest point of prominent bare hill; tablet stamped "6487" (vertical angle bench mark).	Avis.....	Chaves.....	6,924
Nacimiento Peak.....	Gallina.....	Rio Arriba.....	9,790
Nogal Canyon, on west side of head of east prong of, on timber oval top of ridge, marked by rock pile near tablet; tablet stamped "8562" (vertical angle bench mark).	Mescalero.....	Otero.....	8,562
Ortiz Mountains.....	San Pedro.....	Santa Fe.....	8,928
Pajarita Mountain; triangulation tablet stamped "8014" (vertical angle bench mark).	Hondo.....	Otero.....	8,014
Pino Mesa.....	Corazon.....	San Miguel.....	5,502
Pinon post office, 2.5 miles southeast of, on prominent oval topped hill; tablet stamped "6567" (vertical angle bench mark).	Avis.....	Otero.....	6,567
Pinos Altos Mountain.....	Silver City.....	Grant.....	7,040
Polvadera Mountain triangulation station.....	Socorro.....	Socorro.....	7,275
Powell Mountain.....	Wingate.....	Valencia.....	8,851
Punta Pajarita.....	Lamy.....	San Miguel.....	7,677

Locality.	Quadrangle.	County.	Eleva- tion.
Rinconada Canyon, on partly bare ridge east of northeast prong of; tablet stamped "8231" (vertical angle bench mark).	Mescalero.....	Otero.....	Feet. 8,231
Round Mountain.....	Mogollon.....	Socorro.....	6,735
Ruidoso, 4 miles from, on south side of road from Mescalero to Ruidoso, on end of ridge; tablet stamped "7512" (vertical angle bench mark).	Mescalero.....	Otero.....	7,512
San Jose Punta de la Mesa.....	Lamy.....	San Miguel.....	7,667
San Pedro Mountain.....	Gallina.....	Rio Arriba.....	10,624
San Pedro Mountains.....	San Pedro.....	Santa Fe.....	8,375
Scott Peak.....	Silver City.....	Grant.....	8,313
Seventy-four Mountain.....	Mogollon.....	Socorro.....	7,818
Sierra Blanca, 8 miles southwest of; triangulation point; tablet stamped "8626" (vertical angle bench mark).	Mescalero.....	Otero.....	8,626
Sierra Blanca (or White Mountain); triangulation tablet stamped "12003" (vertical angle bench mark).	.....do.....	.....do.....	12,003
Signal Knob triangulation station.....	Fort Bayard.....	Grant.....	6,807
Silver Peak.....	Mogollon.....	Socorro.....	7,149
Socorro Peak triangulation station.....	Socorro.....	.....do.....	7,226
Stewart Peak.....	Silver City.....	Grant.....	7,065
Thompson Peak.....	Santa Fe.....	Santa Fe.....	10,546
Torres Mesa.....	Corazon.....	San Miguel.....	6,775
T. 11 S., R. 12 W., in north half of sec. 3, in rock on prominent point; aluminum tablet stamped "7475" (vertical angle bench mark).	Camp Vincent.....	Socorro.....	7,475
T. 15 S., R. 10 E., at section corner center of township; tablet stamped "5790" (vertical angle bench mark).	Mescalero.....	Otero.....	5,790
T. 15 S., R. 19 E., sec. 24, 2 miles east of northeast corner of, on timbered ridge between Silver Spring Canyon and Sixteen Spring Canyon; tablet stamped "8291" (vertical angle bench mark).	.....do.....	.....do.....	8,291
T. 15 S., R. 15 E., 0.5 mile west of southeast corner of sec. 15, on timbered hill of ridge along south side of Elk Canyon; tablet stamped "7464" (vertical angle bench mark).	Hondo.....	.....do.....	7,464
T. 16 S., R. 16 E., at corner of secs. 19, 20, 30, and 29, on main ridge on east side of Aqua Chiquita Canyon; tablet stamped "6487" (vertical angle bench mark).	Avis.....	Chaves.....	6,487
Treasure Mountain.....	Silver City.....	Grant.....	7,000
Truchas Peak (south).	Santa Fe.....	Rio Arriba.....	13,275
Truchas Peak (north); highest point in State yet determined.	.....do.....	.....do.....	13,306
Turkey Feather Pass.....	Mogollon.....	Socorro.....	8,412
West Baldy.....	.....do.....	.....do.....	9,806
White Tail Canyon, on south side of south fork of, on thickly timbered hill of long ridge; tablet stamped "7562" (vertical angle bench mark).	Hondo.....	Otero.....	7,462
White Tail Canyon, on bare hill where two forks of White Tail Canyon join; tablet stamped "7040" (vertical angle bench mark).	.....do.....	.....do.....	7,040
White Tail Canyon, on north side of, 2.5 miles northeast of White Tail windmill, bare hill; tablet stamped "6774" (vertical angle bench mark).	.....do.....	.....do.....	6,774
White Tail Canyon, near upper part of south prong of, 0.5 mile east of higher prominent hill on timbered ridge, on prominent hill; tablet stamped "8127" (vertical angle bench mark).	Mescalero.....	.....do.....	8,127
White Mountain (Sierra Blanca); triangulation tablet stamped "12003" (vertical angle bench mark).	.....do.....	.....do.....	12,003
White Tail windmill, 2 miles southeast of, on bare spur of ridge; tablet stamped "6930" (vertical angle bench mark).	Hondo.....	.....do.....	6,930
Whitewater Baldy.....	Mogollon.....	Socorro.....	10,892
Wilson Mountain.....do.....	Grant.....	6,060

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