

UNITED STATES DEPARTMENT OF THE INTERIOR

Harold L. Ickes, Secretary

GEOLOGICAL SURVEY

W. C. Mendenhall, Director

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Bulletin 883-A

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# SPIRIT LEVELING IN TEXAS

## PART 1. WESTERN TEXAS, 1896-1935

J. G. STAACK

Chief Topographic Engineer



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
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# SPIRIT LEVELING IN TEXAS

## PART 1. WESTERN TEXAS, 1896-1935

J. G. STAACK, Chief Topographic Engineer

### INTRODUCTION

*Scope of report.*—This bulletin, which for convenience is to be published in seven parts, contains the results of all spirit leveling done by the United States Geological Survey in Texas, including those heretofore published.<sup>1</sup> Each of the parts deals with one of seven sections into which the State has been divided for this purpose and which have been designated northeastern, southeastern, north-central, south-central, west-central, and western Texas and the Panhandle. In each part descriptions of the points for which figures of elevation have been determined are listed according to the quadrangles in which the points occur. Results of spirit leveling other than that done by the Geological Survey have not been included.

*Classification of leveling.*—Spirit leveling is classified according to the degree of refinement in the instruments and methods used and according to the closure errors.

First-order leveling<sup>2</sup> consists of leveling done with the most improved instruments, all sections being leveled twice, in opposite directions, under varying conditions. Closures are not allowed to exceed the amount in feet represented by the formula

$$0.017\sqrt{\text{length of section in miles.}}$$

All corrections for rod error, temperature, and unbalanced sights are applied, as well as the orthometric corrections for convergence toward the poles of level surfaces of different elevations.

Second-order leveling, according to regulations of the United States Geological Survey, comprises lines leveled twice with reliable instruments, though not necessarily of the most improved type. Closures are not allowed to exceed  $0.035\sqrt{\text{length of section in miles.}}$

<sup>1</sup> For the results of spirit leveling in Texas previously published see Triangulation and spirit leveling—Southern Texas: U. S. Geol. Survey 18th Ann. Rept., pt. 1, pp. 364-391, 1897; Triangulation and spirit leveling—Southern Texas: U. S. Geol. Survey 19th Ann. Rept., pt. 1, pp. 327-353, 1898; Triangulation and spirit leveling—Southern Texas: U. S. Geol. Survey 20th Ann. Rept., pt. 1, pp. 423-457, 1899; Triangulation, primary traverse, and spirit leveling—Southern Texas: U. S. Geol. Survey 21st Ann. Rept., pt. 1, pp. 483-495, 1900; Spirit leveling in Texas, 1896 to 1910, inclusive: U. S. Geol. Survey Bull. 468, 133 pp., 1911; Spirit leveling in Texas, 1896 to 1915, inclusive: U. S. Geol. Survey Bull. 637, 254 pp., 1916.

<sup>2</sup> See Avers, H. G., Manual of first-order leveling: U. S. Coast and Geodetic Survey Special Pub. 140, 1929.

Third-order leveling is made up of lines that are run, either with first-order equipment or with an engineer's wye level and rods of the New York type, in single-line circuits that are required to close within the limits, in feet, of  $0.05 \sqrt{\text{length of circuit in miles}}$ . This is equivalent to  $0.071 \sqrt{\text{length of section}}$  if the line is leveled twice.

All leveling done by the United States Geological Survey in Texas is of third-order accuracy except as otherwise stated.

*Adjustments.*—The adjustment of a net of leveling begins with the first-order lines. Most of these lines in both the United States and Canada have already been combined in a general net, and the orthometric differences derived from the observed values by correction for the convergence of level planes toward the north have been adjusted to remove accidental closure errors by the mathematical method known as least squares. The latest adjustment of this kind was made in 1929 by the United States Coast and Geodetic Survey and is known as the "1929 general adjustment of first-order leveling." This adjustment included the first-order lines in Texas, and the elevations thus derived are the fundamental references for elevations determined by second- and third-order nets. The third-order leveling of the United States Geological Survey in Texas has been adjusted by determining weighted mean elevations for new junction points and prorating the errors of each link. The weights are taken as the reciprocals of lengths of links. The third-order net has thus been brought into agreement with the best information available for the results of the fundamental first-order leveling, although the published figures of elevation may be changed slightly by future adjustments of the level net.

*Benchmarks.*—The benchmarks used by the United States Geological Survey (pl. 1) are of two general classes—principal and supplementary. Principal benchmarks are placed at more or less regular intervals along a level line and are established with the aim of making them as nearly permanent as practicable. They are usually bronze or aluminum tablets, iron posts, or copper bolts. Supplementary or auxiliary benchmarks are less formal in design and are placed between the principal benchmarks. Some of the supplementary benchmarks in common use are copper nails fitted with washers, spikes, and marks cut with a chisel on rock or masonry.

The tablets are circular in shape, measure  $3\frac{3}{8}$  inches in diameter, and taper from a thickness of three-eighths of an inch at the center to about a quarter of an inch near the rounded edge. During a short period in the earlier years of the Survey's leveling the tablets set were made of aluminum. The softness of this metal, however, made them susceptible to damage, so that aluminum as a material for tablets was soon discarded. The earliest tablets set and those now being placed are made of bronze, and bronze is the material now specified

for standard tablets. Each tablet is cast with a 3-inch shank extending from the center of its reverse side, by means of which it is cemented in place, and each bears an inscription on its face. The inscriptions on the tablets already placed differ in many details, because of changes in design at various times. The face of every tablet, however, is cast with the words "U. S. Geological Survey", a cross at the center, which indicates the fiducial point for position or elevation, and the words "Elevation above sea." On some tablets the inscription indicates that they were set in connection with a project in which a State or other organization cooperated; on some, the inscription includes a triangle, which signifies a located point, enclosing the cross at the center. Tablets bearing a triangle enclosing a cross may be used not only as benchmarks but also as triangulation- or traverse-station marks. The inscription on most of the tablets already set includes the warning "250 dollars fine for disturbing this mark", but the latest design omits this phrase and adds the sentence "For information write the Director, Washington, D. C."

If the tablet is to mark a transit-traverse station, the traverseman stamps it with letters indicating this use of it, such as "Prim. Trav. Sta.", "P. T. S.", or "T. T.", as well as his own identifying letter or letters, the serial number of the station, and the year, using steel dies. If the tablet is set as a benchmark, the levelman stamps it with his identifying letter or letters, the serial number, and the year. He may at the same time stamp upon it with steel dies the elevation to the nearest foot, or these figures may be added later. Tablets that serve as benchmarks may have been set as such, or they may have been set to mark traverse stations. Thus many of them serve a dual purpose, but each has stamped upon it the date and the identifying designation of only that engineer who established it.

The figures of elevation that appear on a tablet are usually those determined by field computation only. It is sometimes found, therefore, that they do not represent the latest information. This has happened either because they refer to some independent datum temporarily adopted before first-order trunk lines made standard datum available, or because a later adjustment made in the office has rendered necessary an appreciable change in the figures as determined in the field. It is assumed that engineers and others who require accurate figures of elevations for the marks will use those printed in a bulletin such as this one, instead of accepting the stamped figures. If the appropriate bulletin is not conveniently accessible, a request for the desired information may be addressed to the Director of the United States Geological Survey, Washington, D. C.

The tablets, of whatever style, are cemented into holes drilled in solid rocks or in the walls of public buildings, bridge abutments, or other masonry structures. Where masonry or rock is not available,

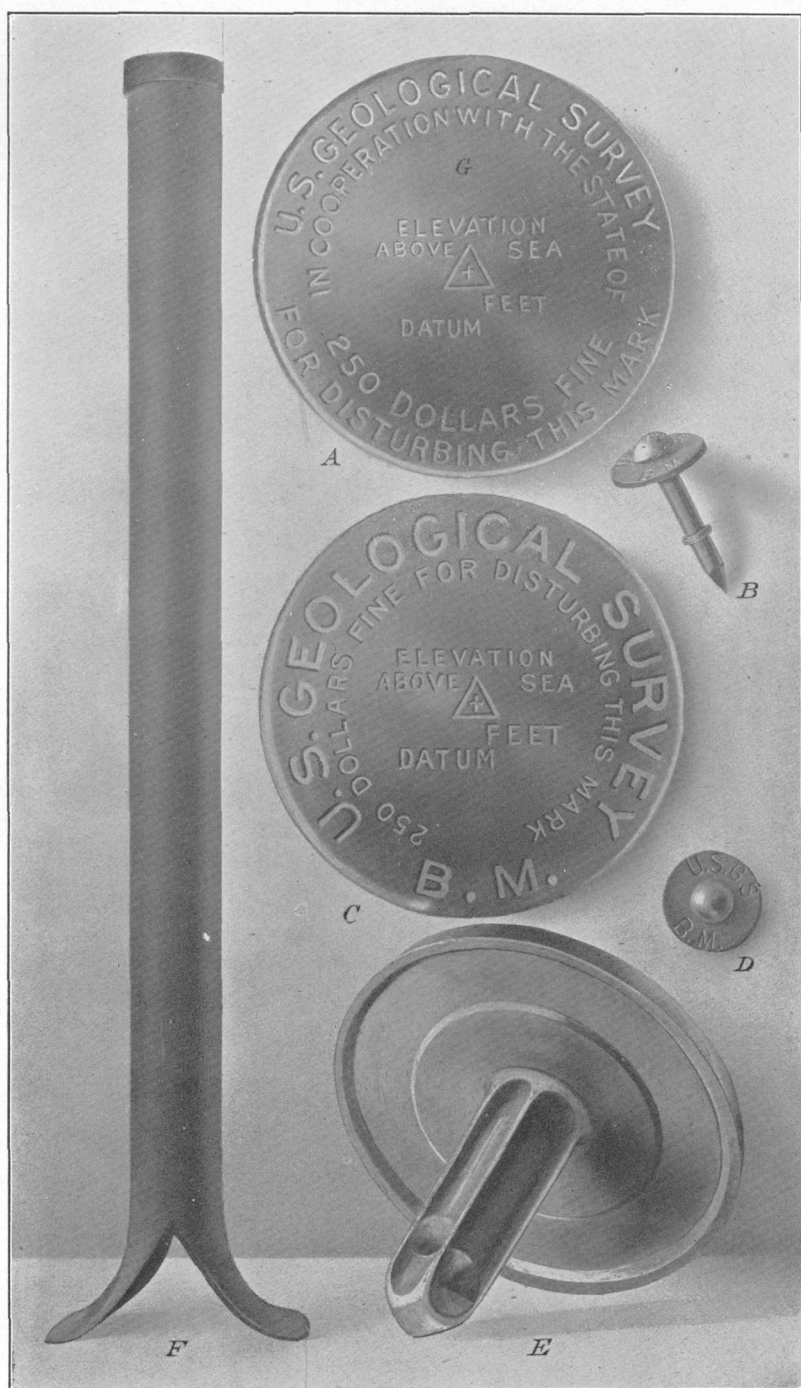
the tablets are set in the tops of reinforced concrete posts, which may be either precast or mixed and molded at the selected site. The posts are about 8 inches square or 8 inches in diameter at the top and larger at the base. They are generally set so as to project about 6 inches above ground and are made sufficiently long to reach below the frost line.

Antedating the concrete posts which are now constructed to hold the tablets, in places where masonry or rock is not available, are wrought-iron posts, to whose tops are riveted bronze caps of similar design to the tablets. These iron posts measure 4 feet in length and  $3\frac{1}{2}$  inches in outer diameter and are set about 3 feet in the ground. The bottom of the post spreads out to a width of about 10 inches in order to give it a firm footing in the earth. No iron posts have been set in recent years. They have proved impracticable, as they are easily disturbed and are subject to rust at the ground level, which eventually destroys them.

The third form of principal benchmark, set only in the early leveling, is a copper bolt, designed to be wedged into a drill hole in rock or masonry and perhaps further secured with lead or cement. This bolt measures 4 inches in length and 1 inch in diameter and has a slot at one end into which fits a brass wedge. The wedge serves to expand the bottom end of the bolt, so that after the bolt has been driven to almost its full length into the hole, it cannot be easily removed. The exposed end of the bolt bears an appropriate inscription, stamped upon it with steel dies. This inscription is made up of the letters "U S G S", the letters indicating the datum used, the abbreviated word "Ft", and the figures of elevation.

Supplementary benchmarks are of many kinds. One kind consists of a copper nail  $1\frac{1}{2}$  inches long supplied with a copper washer seven-eighths of an inch in diameter through which the nail is driven into the root of a tree or some timber structure or cemented into rock after bending the point. The designation "U S G S B M" is stamped on each washer, and on some washers the abbreviation of the name of the cooperating State is added. Another kind of supplementary benchmark is a chiseled square, used on the horizontal surface of a rock or masonry structure, or a chiseled cross, used on a vertical surface and, occasionally, easily described and recognized points, such as doorsills and tops of hydrants. Nails, track spikes, and small capped iron pipes also serve as supplementary benchmarks.

*Preservation and restoration of benchmarks.*—Any person who finds that a principal benchmark has been damaged, disturbed, or destroyed or that it should be reset or redescribed on account of highway or other improvements will render a public service by communicating the facts to the Director, United States Geological Survey, Washington, D. C., before taking any action affecting the location or eleva-



GEOLOGICAL SURVEY BENCHMARKS.

A, Tablet used in cooperating States. The State name is inserted at G. B and D, Copper temporary benchmark, consisting of a nail and washer. A, C, and E, Tablets for stone or concrete structures. F, Iron post fitted with bronze cap similar in design to the standard tablet, formerly used where no rock or masonry was available; superseded by concrete post with tablet set in top.

tion of the mark. A proper form, accompanied by a return-addressed, franked envelope, will be sent for use in reporting the action taken and in recording the revised description of the mark, if any, and the notes made in obtaining the revised elevation.

*Datum.*—All elevations determined by the United States Geological Survey and those determined by the United States Coast and Geodetic Survey for inland mapping are referred to mean sea level, which is the level that the sea would assume if the influence of winds, tides, and currents was eliminated. This level is not the elevation determined from the mean of the highest and 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 those due to 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 made in the Atlantic Ocean, the Gulf of Mexico, and the Pacific Ocean.<sup>3</sup>

*Location of the area.*—Western Texas, as the term is used in this bulletin and as the subject of part 1 of the bulletin, is that section of the State lying south of latitude 32° and west of longitude 103°. (See fig. 1.)

*Index map.*—The accompanying index map of western Texas (fig. 2) shows the relative position of the quadrangle areas which make up this section; they are of two sizes—15-minute and 30-minute quadrangles. Each of the 15-minute quadrangles measures 15 minutes in latitude by 15 minutes in longitude. Each of the 30-minute quadrangles measures 30 minutes in latitude by 30 minutes in longitude and is equal in area to four 15-minute quadrangles.

Maps of many of the quadrangles in western Texas may be purchased at 10 cents each retail or 6 cents wholesale, in lots of 50 or more. Prepayment is required and may be made by money order, payable to the Director of the United States Geological Survey, or in cash—the exact amount, at sender's risk. Postage stamps should not be sent. These maps are of nearly uniform size regardless of the size of the areas they represent, because they are drawn on different scales. For some of the 15-minute quadrangles that appear on the index map there are as yet no corresponding maps, but these areas

<sup>3</sup> See Jones, E. L., *Hypsometry—Use of mean sea level as the datum for elevations*: U. S. Coast and Geodetic Survey Special Pub. 41, 1917; *Manual of tide observations*: U. S. Coast and Geodetic Survey Special Pub. 198, 1935.



are included in 30-minute quadrangles, for some of which maps may be purchased.

The heavy black lines on the index map indicate the routes followed by the third-order leveling of the United States Geological Survey in western Texas. The light dashed lines indicate the routes followed by the first-order leveling of the United States Coast and Geodetic Survey.

*Accuracy of figures of elevation given.*—All leveling done by the United States Geological Survey in western Texas is of third-order

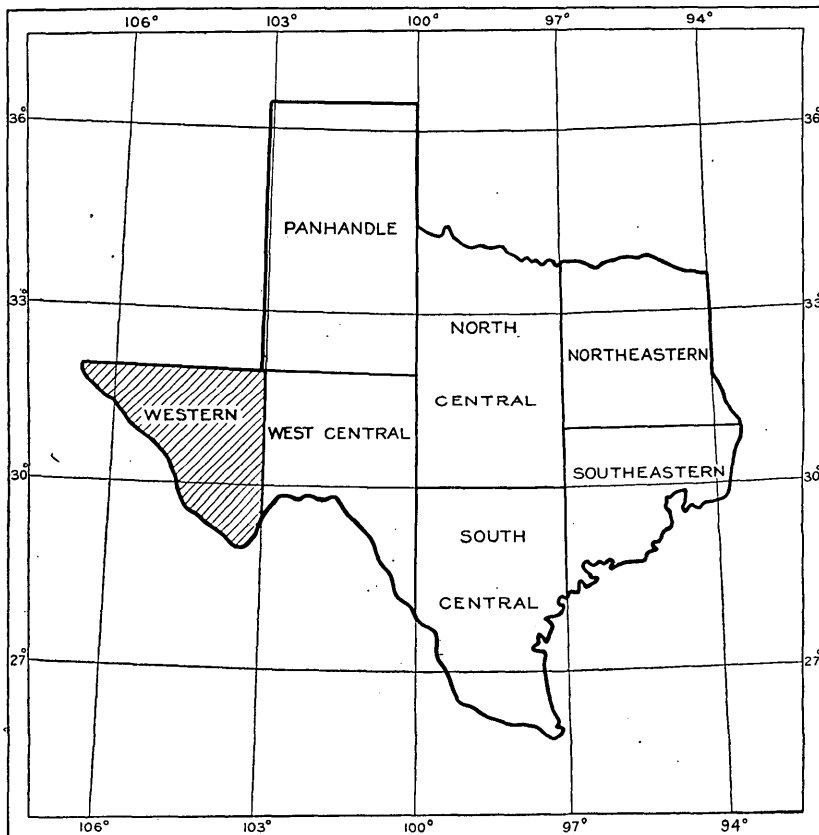


FIGURE 1.—Outline map of Texas showing the names and relative position of the seven sections covered by the parts of Bulletin 883, on spirit leveling in the State. The shaded portion represents the section designated as western Texas.

accuracy except as otherwise stated. The figures of elevation given for most points listed are as nearly accurate as they can be determined at this time. In Presidio and Brewster Counties, however, much of the third-order leveling extends so far from the main control of higher-order levels that the figures given should be considered as subject to small corrections when connected to any higher-order leveling that may be done in the future.

*Cooperation.*—The State of Texas, through the University of Texas Mineral Survey in 1902 and 1903 and the State Reclamation Service in 1909, 1910, and 1923-27, contributed financially to the work of mapping and leveling this section of the State.

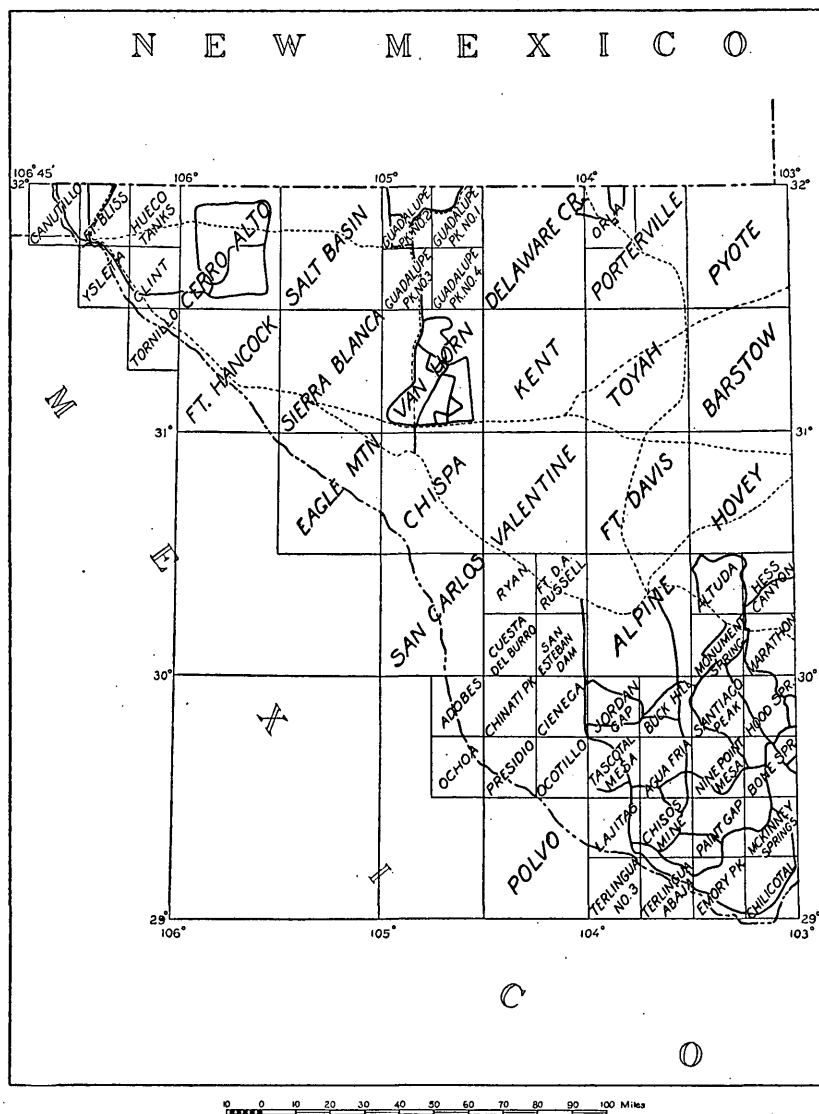


FIGURE 2.—Index map of western Texas showing the quadrangles into which this section of the State has been divided and the routes followed by levelmen of the United States Geological Survey and the United States Coast and Geodetic Survey. — United States Geological Survey lines of leveling. - - - - United States Coast and Geodetic Survey lines of leveling.

*Personnel.*—The leveling of the United States Geological Survey in western Texas was done under the supervision of the several chief

geographers or chief topographic engineers who were in administrative charge of the topographic branch during the years when the lines were run. The name of the levelman who ran a particular line and the date when it was run immediately follow the designation of the route of that line and form part of the heading that precedes the descriptions of benchmarks. The adjustment of the third-order level net and the revision, correlation, and compilation of the descriptions and elevations of benchmarks, as well as the assembling of the lists, were done mainly by E. W. Tibbott, computer, under the supervision of R. M. Wilson, chief of the section of computing, under the general direction of J. G. Staack, chief topographic engineer.

### THIRD-ORDER LEVELING

#### AGUA FRIA QUADRANGLE

[Latitude 29°30'–29°45'; longitude 103°30'–103°45']

#### BREWSTER COUNTY

From Chisos Mine quadrangle at Adobe Walls north along old Alpine-Terlingua road into Buck Hill quadrangle (by M. S. Bright in 1902)

Adobe Walls, 2.2 mi. N. of, 25 ft. W. of rd., at summit of flat divide; iron post stamped 3447 "Marfa"-----	Feet 3, 450. 830
Adobe Walls, 5.5 mi. N. of, at E.-W. wire fence, on W. side of rd., at W. gatepost; iron post stamped "3360 Marfa"-----	3, 363. 977
Adobe Walls, 8.5 mi. N. of, on W. side of rd., in open flat, at mail box; iron post stamped "3301 Marfa"-----	3, 304. 968
Adobe Walls, 11.8 mi. N. of, 10 ft. W. of rd., iron post stamped "3467 Marfa"-----	3, 470. 791
Butcherknife Wells, 11.8 mi. S. of, on W. side of rd., at foot of hill; iron post stamped "3684 Marfa"-----	3, 687. 784
Butcherknife Wells, 8.5 mi. S. of, 4 ft. W. of rd., on flat tableland; iron post stamped "3849 Marfa"-----	3, 852. 937

At Agua Fria Springs (by M. S. Bright in 1901 and 1902; double-run line from Chisos Mine quadrangle)

Agua Fria Springs, 12 ft. N. of springs, in limestone outcrop; standard tablet stamped "3537 Marfa"-----	3, 540. 960
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From Tascotal Mesa quadrangle east along road to Agua Fria Springs, thence northeast to point 8.5 miles north of Adobe Walls (by D. S. Birkett in 1917)

Agua Fria Springs, 4.0 mi. W. of, 6.0 mi. E. of Mahon ranch, in bend where large tributary canyon of Alamo de Cesario Creek turns sharply to N., about 300 ft. upstream from point where old Mahon ranch-Agua Fria trail turns uphill to top of mesa, on S. side of dry creek bed, along side small cairn, on sandstone outcrop; aluminum tablet stamped "1917 6"-----	3, 862. 331
Agua Fria, 3.6 mi. W. of, on top of mesa, about 200 ft. E. of point where trail to Mahon ranch turns down into canyon, on S. side of dim trail; top of rock-----	3, 962. 53
Agua Fria ranch house, 0.6 mi. SW. of, 10 ft. W. of private rd. leading to Worthington's "Black Tinaja"; top of rock-----	3, 472. 93
Agua Fria ranch house, 140 ft. N. of, in root of willow tree; copper nail-----	3, 451. 554

	<i>Feet</i>
Agua Fria ranch house, 2.0 mi. NE. of, 20 ft. E. of rd.; top of boulder.....	3, 290. 29
Agua Fria, 2.9 mi. NE. of, 12 ft. E. of rd.; top of boulder.....	3, 246. 87
Agua Fria, 3.8 mi. NE. of, 0.2 mi. W. of junction of Agua Fria and Alamo de Cesario Creeks, 40 ft. NW. of rd., near small cairn, on boulder; aluminum tablet stamped "1917 7".....	3, 186. 745
Agua Fria, 5.0 mi. E. of, 2.4 mi. W. of Kendrick ranch house, 110 ft. N. of rd.; top of small boulder.....	3, 180. 93
Kendrick ranch house, 1.8 mi. W. of, near small summit in rd., 40 ft. N. of rd.; top of boulder.....	3, 246. 42
Kendrick ranch house, 0.8 mi. W. of, 30 ft. N. of rd.; top of boulder.....	3, 175. 45
Kendrick ranch house, at SW. corner of porch, on boulder; aluminum tablet stamped "1917 8".....	3, 190. 463
Kendrick ranch house, 1.6 mi. E. of, 4 ft. N. of rd.; top of rock.....	3, 269. 83
Kendrick ranch house, 2.5 mi. E. of, on W. edge of small summit, 10 ft. N. of rd.; top of rock.....	3, 353. 27
Kendrick ranch house, 3.3 mi. E. of, in forks of Alpine-Terlingua rd. and rd. leading E. to old Alpine rd., 10 ft. E. of new Alpine rd., in boulder; aluminum tablet stamped "1917 9".....	3, 344. 835

## ALPINE QUADRANGLE

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

## BREWSTER, JEFF DAVIS, AND PRESIDIO COUNTIES

From Buck Hill quadrangle north along highways to Alpine (by M. S. Bright in 1902)

	<i>Feet</i>
Neville ranch house, 1.0 mi. S. of, 3.2 mi. N. of The Two Windmills, 2 ft. E. of new rd. and 4 ft. W. of old rd.; iron post stamped "4245 Marfa".....	4, 249. 150
Neville ranch house, 0.5 mi. NW. of, 120 ft. W. of Calamity Creek, 8 ft. W. of rd., at foot of hill; iron post stamped "4362 Marfa".....	4, 366. 170
Neville ranch house, 4.2 mi. N. of, 60 ft. S. of creek, 6 ft. E. of rd.; iron post stamped "4498 Marfa".....	4, 502. 311
Neville ranch house, 7.5 mi. N. of, 40 ft. S. of red gate, on W. side of rd., near wire fence; iron post stamped "4716 Marfa".....	4, 720. 106
Neville ranch house, 10.5 mi. N. of, 100 ft. E. of rd., on W. side of rocky knoll, in sandstone outcrop; standard tablet stamped "4977 Marfa".....	4, 981. 116
Alpine, 12.5 mi. S. of, 13.2 mi. N. of Neville ranch house, at summit in gap, 12 ft. W. of rd., in volcanic outcrop; standard tablet stamped "5192 Marfa".....	5, 196. 059
Alpine, 10 mi. SE. of, at summit in gap, 25 ft. N. of rd., in volcanic rock; standard tablet stamped "5404 Marfa".....	5, 407. 917
Alpine, 6.5 mi. SE. of, at summit in divide, 20 ft. NE. of rd., in limestone outcrop; standard tablet stamped "5255 Marfa".....	5, 259. 268
Alpine, 3.5 mi. SE. of, in forks of rd.; iron post stamped "4673 Marfa".....	4, 677. 390

From Alpine west along Galveston, Harrisburg &amp; San Antonio Railway into Fort D. A. Russell quadrangle (by M. S. Bright in 1901 and 1902)

Alpine, at county courthouse, at E. entrance, in N. end of third step; standard tablet stamped "4476 Marfa", U. S. C. & G. S. B. M. designated "J 25".....	4, 480. 477
Alpine, 3.8 mi. W. of, 50 ft. N. of Ry. track, 20 ft. S. of public rd., 5 ft. E. of gate; iron post stamped "4665 Marfa", U. S. C. & G. S. B. M. designated "GG 25".....	4, 669. 357

	<i>Feet</i>
Toronto, in front of signboard; top of rail-----	4, 738. 8
Alpine, 6.8 mi. W. of, 30 ft. SW. of milepost 616, 20 ft. N. of public rd., in flint-rock outcrop; standard tablet stamped "4820 Marfa"-----	4, 824. 199
Alpine, 9.8 mi. W. of, 300 ft. W. of milepost 619, 50 ft. N. of public rd., by wire fence, in sandstone rock; standard tablet stamped "4964 Marfa"-----	4, 968. 438
Paisano, 1.5 mi. W. of, 225 ft. S. of R. R. track, 65 ft. S. of center line of public rd., in rock outcrop; standard tablet stamped "4998.762" (reset)-----	4, 998. 762
Paisano, 4.0 mi. W. of, 50 ft. S. of R. R. track; 3 ft. S. of milepost 626; iron post stamped "4910 Marfa"-----	4, 914. 056
Nopal siding, 100 ft. S. of track, 10 ft. E. of gate; iron post stamped "4806 Marfa", U. S. C. & G. S. B. M. designated "YY 24"-----	4, 810. 076
Marfa, 4.0 mi. E. of, 0.2 mi. SW. of milepost 632, in rd. forks; iron post stamped "4813 Marfa"-----	4, 816. 884

Near northeast corner of quadrangle, on line run mostly in Altuda quadrangle  
(by F. L. Shalibo in 1919)

Alpine, 12.0 mi. NE. of, opposite rd. to Parr ranch house, 20 ft. SW. of cattle guard, in fence line; iron post stamped "4160 1919"-----	4, 160. 277
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#### ALTUDA QUADRANGLE

[Latitude 30°15'-30°30'; longitude 103°15'-103°30']

#### BREWSTER COUNTY

From Hess Canyon quadrangle at road forks 2.5 miles southwest of Old  
Parker place west and northwest along roads into Hovey quadrangle (by  
F. L. Shalibo in 1919)

	<i>Feet</i>
Old Parker place, 3.7 mi. SW. of, 5.5 mi. by rd. E. of Easterwood ranch house, 1.2 mi. SW. of rd. forks, in Gilliland Canyon, 10 ft. W. of rd., near large rock; iron post stamped "4145 1919"-----	4, 145. 259
Easterwood ranch house, 2.0 mi. E. of, 1.1 mi. W. of E.-line fence of ranch, 15 ft. S. of rd.; iron post stamped "3947 1919"-----	3, 947. 561
Easterwood ranch house, about 3 mi. by rd. W. of, 1.2 mi. N. of Nichols ranch house, 4.3 mi. SE. of Stroud ranch house, 1.0 mi. E. of Frenchman Tank, 10 ft. S. of gate, in fence line; iron post stamped "3981 1919"-----	3, 981. 221
Stroud ranch house, 1.2 mi. SE. of, about 2 mi. NW. of Frenchman Tank, 20 ft. N. of rd.; iron post stamped "3976 1919"-----	3, 976. 063
Stroud ranch house, 0.5 mi. NW. of, at Lake Logan tank, in stone foundation of small steel tank; NE. corner of foundation-----	3, 938. 97

From Hovey quadrangle southwest along Alpine-Fort Stockton road into Al-  
pine quadrangle (by F. L. Shalibo in 1919)

Alpine, 15.3 mi. NE. of, 3.2 mi. SW. of junction of Alpine-Fort Stockton rd. and rd. SE. to Stroud ranch, 600 ft. SW. of creek, near telephone pole; iron post stamped "3985 1919"-----	3, 985. 517
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From Alpine quadrangle southeast along road to Altuda (by F. L. Shalibo in  
1919)

Emerson ranch house, 6.6 mi. N. of Altuda, at SW. corner of house; iron post stamped "4305 1919"-----	4, 305. 688
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Emerson ranch house, 3.3 mi. S. of, 3.3 mi. N. of Altuda, 0.5 mi. SW. of Youngs ranch house, in SW. corner of crossroads, 70 ft. from intersection; iron post stamped "4492 1919"-----	Feet 4, 491. 743
U. S. C. & G. S. B. M. designated "R 25 1917"-----	4, 633. 268

From Hess Canyon quadrangle at point near Skinner ranch house along road northwest to its junction with Gilliland Canyon road, thence northeast and back into Hess Canyon quadrangle (by James Dod in 1919)

Skinner ranch house, 1.6 mi. NW. of, 10.5 mi. N. of Marathon, 300 ft. W. of stream bed, 15 ft. W. of rd.; iron post stamped "4627 1919"-----	4, 627. 341
Skinner ranch house, 3.8 mi. NW. of, 0.9 mi. S. of summit of rd., on W. side of rd., on rock; chisel cut-----	4, 869. 22
Skinner ranch house, 4.7 mi. NW. of, at summit of rd., 15 ft. W. of rd.; iron post (?) stamped "4973 1919"-----	4, 973. 288
Skinner ranch house, 5.8 mi. NW. of, 1.1 mi. N. of summit of rd., in Gilliland Canyon near its junction with Road Canyon, 1,040 ft. N. of tank, 15 ft. W. of rd., on large rock; chisel cut-----	4, 826. 80
Skinner ranch house, 8.0 mi. N. of, 5.3 mi. SW. of junction of Easterwood ranch old Parker place rd. and Gilliland Canyon rd., 3.1 mi. N. of summit of rd., 1.4 mi. N. of corral and tank, about 15 ft. W. of wooden gate; iron post stamped "4645 1919"-----	4, 645. 150

## BONE SPRING QUADRANGLE

[Latitude 29°30'–29°45'; longitude 103°–103°15']

## BREWSTER COUNTY

From McKinney Spring quadrangle near Stroud ranch house northwest along road to its junction with Adobe House-Bone Spring road (by Chester Irvine in 1902 and 1903; releveled in part by R. R. Monbeck in 1917)

Stroud ranch mail box, 1.9 mi. N. of, 20 ft. E. of rd., on slope of small gravel hill; iron post stamped "2881 Marfa 1903"-----	Feet 2, 884. 256
Bone Spring (Buttrill ranch house), 5.8 mi. S. of, 0.5 mi. S. of gate, about 1,000 ft. N. of old ranch house, 100 ft. W. of fence, 50 ft. E. of rd.; iron post stamped "2755 Marfa 1903"-----	2, 756. 011
Bone Spring, 4.2 mi. S. of, 0.5 mi. S. of rd. forks, 20 ft. W. of rd., in base of greasewood bush; copper nail and washer-----	2, 681. 59
Bone Spring, 3.4 mi. S. of, 1.0 mi. SE. of windmill, 0.2 mi. SE. of gravel hill, 100 ft. W. of rd., in base of mesquite bush; copper nail and washer-----	2, 644. 40
Bone Spring, 3.0 mi. S. of, 0.5 mi. S. of windmill, about 0.3 mi. W. of present rd., 20 ft. W. of abandoned rd.; iron post stamped "2641 Marfa 1903"-----	2, 643. 996

From Nine Point Mesa quadrangle at point southwest of Adobe House northeast along road to Bone Spring (by R. R. Monbeck in 1917)

Adobe House, 0.8 mi. SW. of, 10 ft. SE. of rd., 200 ft. SW. of rd. forks, in base of greasewood bush; copper nail-----	2, 795. 38
Adobe House, 400 ft. NW. of, 200 ft. S. of main rd., 5 ft. N. of NE. corner of corral; iron post stamped "2766"-----	2, 765. 841
Adobe House, 1.0 mi. E. of, 10 ft. N. of rd., on W. edge of bare flat, in base of mesquite bush; copper nail-----	2, 746. 26

	<i>Feet</i>
Adobe House, 2.9 mi. E. of, on E. side of rd., at bend; iron post-----	2, 710. 935
Bone Spring (Buttrill ranch house), 0.8 mi. SW. of, 300 ft. S. of drain crossing and right-angle turn of rd., 10 ft. E. of rd., in base of mesquite bush; copper nail-----	2, 680. 91
Bone Spring, 400 ft. E. of Buttrill ranch house, 100 ft. SE. of corner of corral, in trunk of mesquite bush; copper nail-----	2, 659. 08
Bone Spring, 400 ft. N. of Buttrill ranch house, 100 ft. NW. of goat corral, on end of rocky point in top of sandstone ledge; aluminum tablet-----	2, 677. 746

From Adobe House northwest along road north of Santiago Draw into Nine Point Mesa quadrangle (by R. R. Monbeck in 1917)

Adobe House, 1.2 mi. NW. of, 0.5 mi. SE. of earth tank, 30 ft. E. of rd., in trunk of leaning mesquite bush; copper nail-----	2, 794. 70
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From Hood Spring quadrangle south along Marathon-Boquillas road to Bone Spring (by D. S. Birkett in 1917)

Twin Mills, 30 ft. SW. of E. one of the two mills, in foundation of wooden water trough, in S. side of foundation; copper nail-----	2, 724. 58
Twin Mills, 0.3 mi. SE. of, on E. end of concrete roadway across Maravillas Creek; aluminum tablet stamped "2710 1917"-----	2, 710. 861
Twin Mills, 1.0 mi. S. of, 10 ft. W. of rd.; top of rock-----	2, 761. 97
Twin Mills, 2.4 mi. S. of, 7 ft. W. of rd.; top of rock-----	2, 778. 03
Twin Mills, 3.4 mi. S. of, 2.5 mi. N. of Persimmon Gap, 0.3 mi. N. of junction with rd. leading E. to Henderson ranch house, 30 ft. W. of rd., near telephone pole; iron post stamped "2825 1917"-----	2, 825. 607
Twin Mills, 4.2 mi. S. of, 5.4 mi. N. of Bone Spring (Buttrill ranch house), 1.0 mi. N. of Persimmon Gap, 0.2 mi. N. of rd. forks, on W. side of rd.; top of rock-----	2, 850. 09
Bone Spring (Buttrill ranch house), 4.4 mi. N. of, in Persimmon Gap, at summit of Marathon-Boquillas rd., 30 ft. W. of rd.; iron post stamped "2970 1917"-----	2, 970. 822
Bone Spring, 3.6 mi. N. of, 0.8 mi. S. of Persimmon Gap, at forks in rd., on concrete base of signpost reading "Boquillas 45 M Marathon 45"; chiseled square-----	2, 841. 11
Bone Spring, 0.8 mi. NE. of, 0.5 mi. W. of Marathon rd., 6 ft. E. of private rd. to Bone Spring, opposite rocky point; top of rock-----	2, 639. 91

From Twin Mills southeast along Maravillas Creek and Stillwell Crossing roads into Maravillas Canyon (by D. S. Birkett in 1917)

Twin Mills, 1.5 mi. SE. of, about 5 mi. NE. of Persimmon Gap, on Maravillas Creek rd., at NE. corner of old wax-plant building, on top of rock; chiseled square-----	2, 684. 675
Twin Mills, 3.0 mi. SE. of, 4.6 mi. NW. of Henderson Ranch House, 4.5 mi. NE. of Persimmon Gap, 1.5 mi. SE. of old wax plant, almost opposite house on Green ranch, on north side of rd. along Maravillas Creek, at mail box; iron post stamped "2605 1917"-----	2, 606. 167
Henderson ranch house, 1.2 mi. E. of, 1.0 mi. W. of junction of Stillwell Crossing Road and rd. E. to Stillwell ranch house, about 1,000 ft. N. of Maravillas Creek, 10 ft. S. of rd.; iron post stamped "2372 1917"-----	2, 372. 364
Henderson ranch house, 2.2 mi. E. of, 0.2 mi. N. of Maravillas Creek, 80 ft. NW. of junction of Stillwell Crossing rd. and rd. to Stillwell ranch house; top of rock-----	2, 367. 28

Henderson ranch house, 5.2 mi. SE. of, on Stillwell Crossing rd. at point 3.0 mi. SE. of its junction with rd. to Stillwell ranch house, 2.9 mi. NW. of rd. summit, 200 ft. E. of Penner Tank, 15 ft. S. of rd.; iron post stamped "2423 1917" ----- *Feet* 2, 423. 805

From Maravillas Canyon quadrangle at point near Stillwell ranch house west along road to its junction with Stillwell Crossing rd. (by D. S. Birkett in 1917)

Stillwell ranch house, 2.5 mi. W. of, 3.2 mi. E. of Henderson ranch house, about 10 mi. by rd. E. of Persimmon Gap, 1.0 mi. E. of junction of rd. from Stillwell ranch house with Stillwell Crossing rd. 150 ft. W. of windmill, at fence line; iron post stamped "2309 1917" ----- 2, 309. 605

From Hood Spring quadrangle southeast along road to Stillwell ranch into Maravillas quadrangle (by D. S. Birkett in 1917)

Black Hills, 5.1 mi. S. of, 4.0 mi. N. of Stillwell ranch house, 0.6 mi. S. of small corral, 80 ft. W. of rd., in limestone outcrop; aluminum tablet stamped "2459 1917" ----- 2, 459. 438

Stillwell ranch house, 3.0 mi. N. of, 6.1 mi. S. of Black Hills, 1.4 mi. N. of fork with rd. to Dove Mountain, 4 ft. E. of rd.; top of rock ----- 2, 424. 60

### BUCK HILL QUADRANGLE

[Latitude 29°45'-30°; longitude 103°30'-103°45']

### BREWSTER COUNTY

From Agua Fria quadrangle north along Terlingua-Alpine road into Alpine quadrangle (by M. S. Bright in 1901 and 1902)

Butcherknife Wells, 5.2 mi. S. of, 0.2 mi. S. of rd. forks, on spur of ridge, 8 ft. E. of rd.; iron post stamped "3917 Marfa" ----- *Feet* 3, 920. 933

Butcherknife Wells, 2.5 mi. S. of, on E. side of rd., on S. side of cluster of mesquite bushes; iron post stamped "3760 Marfa" ----- 3, 764. 114

Butcherknife Wells, 790 ft. N. of windmill and 150 ft. E. of ranch house, on W. side of rd., by wire fence; iron post stamped "3798 Marfa" ----- 3, 801. 899

Butcherknife Wells, 3.2 mi. N. of, 6 ft. W. of rd.; iron post stamped "3836 Marfa" ----- 3, 839. 977

Butcherknife Wells, 6.2 mi. N. of, in rd. forks; iron post stamped "4009 Marfa" ----- 4, 013. 017

Butcherknife Wells, 9.2 mi. N. of, 0.2 mi. W. of The Two Windmills, 0.6 mi. S. of rd. forks, 8 ft. W. of rd.; iron post stamped "4102 Marfa" ----- 4, 106. 167

From Santiago Peak quadrangle near Calamity Creek west and northwest along road to Marathon and back into Santiago Peak quadrangle (by R. R. Monbeck in 1917)

Schuler ranch house, 8.7 mi. NW. of, 2.0 mi. SE. of junction of Calamity Creek rd. with Terlingua-Marathon rd., on W. face of rocky white hill, 100 ft. E. of rd., in top of limestone ledge; aluminum tablet ----- 3, 709. 390

Schuler ranch house, 9.9 mi. NW. of, 0.7 mi. SE. of rd. forks, at foot of gravel bank, 50 ft. W. of rd., in leaning trunk of large mesquite bush; copper nail ----- 3, 748. 42

Del Norte Gap (Paso del Norte), 9.1 mi. SW. of, 11.2 mi. NW. of Schuler ranch house, on Terlingua-Marathon rd., at double gate in Koker-not pasture fence, 3 ft. W. of W. gatepost; iron post ----- 3, 795. 603



Del Norte Gap, 8.2 mi. SW. of, 230 ft. NE. of rd. forks, 50 ft. E. of Terlingua-Marathon rd., in base of lone mesquite bush; copper nail-----	<i>Feet</i> 3, 826. 90
Del Norte Gap, 6.2 mi. SW. of, 300 ft. W. of gravel ridge, 10 ft. E. of rd. forks; iron post-----	4, 004. 457
Del Norte Gap, 5.1 mi. SW. of, 250 ft. N. of drain crossing, 10 ft. W. of rd., in base of mesquite bush; copper nail-----	4, 112. 03
Del Norte Gap, 4.3 mi. SW. of, on top of ridge, 1.3 mi. S. of cross-roads, 15 ft. W. of rd., in butt of greasewood bush; copper nail-----	4, 235. 32

From Santiago Peak quadrangle at intersection of Terlingua-Marathon road with road to Kokernot ranch house northwest and southwest along roads to point on Terlingua-Alpine road southwest of Kokernot ranch house (by R. R. Monbeck in 1917)

Kokernot ranch house, 3.5 mi. SE. of, 900 ft. E. of divide, 30 ft. S. of rd., in base of mesquite; copper nail-----	4, 179. 97
Kokernot ranch house, 2.0 mi. SE. of, in feed yard, at west side of northwesternmost of four concrete silos, in concrete base at point 2 ft. from silo wall; aluminum tablet-----	4, 069. 709
Kokernot ranch house, 0.7 mi. NW. of, near intersection of Terlingua-Alpine rd. and rd. from Kokernot ranch house at pasture gate on Terlingua-Alpine rd., 2 ft. E. of E. gatepost; iron post-----	4, 137. 699
Kokernot ranch house, about 1 mi. by direct rd. SW. of, in SW. corner of bare flat, 5 ft. W. of Terlingua-Alpine rd., in base of mesquite; copper nail-----	4, 083. 81

From Butcherknife Wells, on Terlingua-Alpine road, south and northwest along roads to O 2 ranch house (by D. S. Birkett in 1917)

Butcherknife Hill, on summit of, alongside cairn of rocks, in boulder; chiseled square-----	4, 036. 08
Sid Place ranch house, 2.2 mi. E. of, 1.0 mi. E. of high gate, on N. side of rd.; top of boulder-----	3, 705. 67
Sid Place ranch house, near, 6.5 mi. S. of Whirlwind Spring, 20 ft. SW. of windmill; iron post stamped "1917 10"-----	3, 699. 015
Sid Place ranch house, 2.6 mi. W. of, 3.2 mi. E. of O 2 ranch house, 110 ft. N. of rd., at fence corner; iron post stamped "1917 11"-----	3, 785. 197
O 2 ranch house, at front of, on concrete porch; aluminum tablet stamped "1917 12 3782"-----	3, 782. 612

From O 2 ranch house northeast along road to its intersection with Terlingua-Alpine road (by D. S. Birkett in 1917)

O 2 ranch house, 3.6 mi. NE. of, 5.8 mi. SW. of Whirlwind Spring, at intersection of four fences, on N. side of gate; iron post stamped "1917 13"-----	3, 843. 380
Whirlwind Spring, 3.6 mi. SW. of, 2.8 mi. SW. of rd. forks, 3 ft. E. of rd.; top of boulder-----	3, 910. 54
Whirlwind Spring, 2.6 mi. SW. of, about 1,200 ft. NE. of dismantled windmill, 1.9 mi. SW. of rd. fork, on E. side of rd.; iron post stamped "1917 14"-----	3, 934. 115
Whirlwind Spring, on S. side of large steel water tank, in concrete foundation; aluminum tablet stamped "1917 15"-----	3, 968. 762
Whirlwind Spring, 1.1 mi. E. of, just W. of small summit in rd., 80 ft. W. of rd.; top of large boulder-----	4, 050. 76

From O 2 ranch house south and west along roads into Jordan Gap quadrangle  
(by D. S. Birkett in 1917)

O 2 ranch house, 1.9 mi. S. of, 12 ft. E. of rd. to Wilson ranch house; top of large boulder.....	<i>Feet</i> 3, 716. 13
Wilson ranch house, 0.6 mi. N. of, on S. side of dim rd. W. toward Alamita, on W. side of gage; iron post stamped "1917 16".....	3, 685. 430

## CANUTILLO QUADRANGLE

[Latitude 31°45'-32°; longitude 106°45'-107°]

## EL PASO COUNTY

From Texas-New Mexico State line south along Atchison, Topeka & Santa Fe  
Railway to El Paso (first-order leveling by M. S. Bright in 1905)

La Tuna, near, 33 ft. W. of main-line track of Atchison, Topeka & Santa Fe Ry., about 4 ft. N. of Tex.-N. Mex. State line; iron post stamped "3780".....	<i>Feet</i> 3, 792. 761
Vinton, 21 ft. E. of ry., under Vinton signboard; iron post stamped "3774" (reset May 23, 1930, by ry.).....	3, 786. 810
Canutillo, 80 ft. E. of main-line track of ry. at SW. corner of house of J. J. Cumfild; iron post stamped "350 B 1905".....	3, 764. 599
Montoya, 1.5 mi. S. of, on ry. 40 ft. W. of rd. crossing, 5 ft. E. of fence corner; iron post stamped "354 B 1905".....	3, 750. 911
Whites Spur, 2.8 mi. S. of, 0.2 mi. N. of milepost 1150, 50 ft. E. of ry. track, 16 ft. E. of public rd.; iron post stamped "357 B 1905".....	3, 739. 979
Whites Spur, 5.2 mi. S. of, 240 ft. N. of public-rd. crossing, 100 ft. E. of river, 45 ft. E. of ry. track, 12 ft. E. of wagon rd.; iron post stamped "359 B 1905".....	3, 733. 227
El Paso, near, on U. S.-Mexico boundary line, at international- boundary monument no. 1, on top of masonry at NE. corner of monument.....	3, 726. 272

At Courchesne Bridge (by R. W. Burchard in 1917; part of line run mostly in  
New Mexico)

Courchesne Bridge, at E. end of, on N. side of masonry abutment; standard tablet stamped "3732".....	3, 731. 013
Courchesne Bridge, 500 ft. NE. of, at bridge on paved rd., on W. side of rd., at N. end of bridge, on top of concrete railing; chiseled square.....	3, 733. 16

## CERRO ALTO QUADRANGLE \*

[Latitude 31°30'-32°; longitude 105°30'-106°]

## HUDSPETH AND EL PASO COUNTIES

From east border of El Paso quadrangle, 15 miles northeast of Clint, east  
along north Salt Lake road 8.5 miles, thence north along dim roads and  
trails to south Sacramento road, thence east along south Sacramento road  
and across country 16 miles to benchmark 4880, which is in saddle on SW.  
slope of butte 7 miles southwest of San Antonio Mountain, thence south  
across country 11 miles to benchmark 4805, thence west and southwest by  
way of Rockhouse Draw to north Salt Lake road just south of Coyote Tanks  
(by M. S. Bright in 1901)

Lat. 31°40'; long. 105°59', 15.7 mi. E. of San Elizario, on N. side of rd., in mound of stone; iron post stamped "1462".....	<i>Feet</i> 4, 169. 739
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\* The position of the benchmarks established in this quadrangle by the U. S. Geological Survey is given in terms of latitude and longitude because of the remoteness of these marks from settlements or physical features sufficiently prominent to identify them.

Lat. 31°40', long. 105°43', 21.5 mi. E. of San Elizario, on E. side of saddle, on S. side of rd. at angle to NE., in mound of stone; iron post stamped "4523"-----	Feet 4, 530. 513
Lat. 31°43', long. 105°51', on W. slope of hill, 350 ft. E. of draw, 4 ft. E. of rd., in mound of rock; iron post stamped "4709"-----	4, 716. 849
Lat. 31°45', long. 105°54', on E. side of draw, at angle to NW., on side of wagon trail, by stone pier; iron post stamped "4984"-----	4, 992. 070
Lat. 31°48', long. 105°54', on summit of divide, on E. side of wagon trail; iron post stamped "5147"-----	5, 157. 284
Lat. 31°52', long. 105°53', S. 45° E. of Cerro Alto Mountain, 200 ft. E. of draw, on point of small ridge; iron post stamped "5318"-----	5, 326. 266
Lat. 31°57', long. 105°53', 400 ft. W. of draw, 4 ft. S. of S. Sacramento rd. (E.-W.); iron post stamped "5266"-----	5, 274. 293
Lat. 31°57', long. 105°47', in forks of rd.; iron post stamped "5020"-----	5, 028. 397
Lat. 31°56', long. 105°43', at toe of slope, on N. side of draw; iron post stamped "4850"-----	4, 858. 608
Lat. 31°56', long. 105°40', S. about 10° W. of Cerro Alamo, on summit of ridge NW. and SE., in forks of wagon trail; iron post stamped "4788"-----	4, 796. 620
Lat. 31°54', long. 105°37', on summit in gap, at head of draw; iron post stamped "4860"-----	4, 868. 789
Lat. 31°51', long. 105°37', on ridge, on S. side of draw, about 100 ft. W. of E. point of ridge; iron post stamped "4597"-----	4, 605. 843
Lat. 31°48', long. 105°38', on N. side of slope near summit of big E.-W. ridge; iron post stamped "4686" <sup>5</sup> -----	4, 695. 066
Lat. 31°45', long. 105°39', 50 ft. N. of small draw E., on top of small knoll; iron post stamped "4605"-----	4, 613. 810
Lat. 31°47', long. 105°43'; iron post stamped "4890 SE"-----	4, 898. 308
Lat. 31°47', long. 105°47', on E. side of N.-S. draw, at gap leading E.; iron post stamped "5108"-----	5, 116. 028
Lat. 31°43', long. 105°49', on E. edge of old N.-S. rd.; iron post stamped "4774"-----	4, 781. 858
From benchmark 4605 (lat. 31°45', long. 105°39') S. to benchmark 5106 (lat. 31°34', long. 105°42'), thence W. and NW. to benchmark 4523, about 3 mi. SW. of Coyote Tanks (by M. S. Bright in 1901)	
Lat. 31°41', long. 105°40', 25 ft. S. of Salt Lake rd. (E.-W.), N. of gap in mountain; iron post stamped "4672"-----	4, 680. 835
Lat. 31°37', long. 105°41', on W. side of draw N., S. of Cerro Alamo, on small spur of ridge, on bench; iron post stamped "5061"-----	5, 069. 749
Lat. 31°34', long. 105°42', on summit of flat E.-W. ridge; iron post stamped "5106"-----	5, 114. 797
Lat. 31°35', long. 105°45', 25 ft. E. of mound of stone, on edge of high rock bluff, in limestone outcrop; standard tablet stamped "5219"-----	5, 228. 134
Lat. 31°35', long. 105°48', on W. slope of hill, 4 ft. N. of mound of stone, in limestone outcrop; standard tablet stamped "4587"-----	4, 595. 925
Lat. 35°36', long. 105°51', on E. side of flat draw to SW., on slight ridge, on N. edge of wagon trail; iron post stamped "4331"-----	4, 339. 940
Lat. 31°38', long. 105°53', on SE. edge of main draw to SW.; iron post stamped "4404"-----	4, 412. 793

<sup>5</sup> This mark was recovered by U. S. Coast and Geodetic Survey in 1933 and described as follows:

El Paso, 5.3 mi. along U. S. Highway 62 E. of city hall, 0.4 mi. W. of Cavernsway Service Station, 160 ft. W. of milepost 50, 160 ft. W. of sign marked "El Paso 50 miles", 160 ft. N. of center line of highway; iron post stamped "4686".

## CHISOS MINE QUADRANGLE

17

## CHILICOTAL QUADRANGLE

[Latitude 29°-29°15'; longitude 103°-103°15']

## BREWSTER COUNTY

At Boquillas (by Chester Irvine in 1903)

Boquillas, 100 ft. NE. of Ernst's store and post office, in SE. corner of adobe building, set vertically; standard tablet stamped "2133 Marfa 1903"----- Feet  
2, 136. 485

From Boquillas Canyon quadrangle southwest along roads into Emory Peak quadrangle (by Chester Irvine in 1903)

San Vicente, 1.5 mi. NE. of, on SW. slope of small rocky hill, 10 ft. E. of rd., 350 ft. N. of rd. forks, on E. side of Tornillo Creek; iron post stamped "1881 Marfa 1903"----- 1, 884. 183

San Vicente, 1.5 mi. SW. of, 1,600 ft. E. of junction of rds. on summit of ridge, 10 ft. N. of rd., in embedded boulder; standard tablet stamped "1965 Marfa 1903"----- 1, 968. 129

San Vicente, 3.8 mi. SW. of, 0.5 mi. S. of rd. forks on flat, 10 ft. W. of rd., in embedded boulder; standard tablet stamped "1915 Marfa 1903"----- 1, 918. 473

San Vicente, 7.5 mi. SW. of, at junction of drains, 120 ft. N. of rd., in end of small rock ridge; standard tablet stamped "1998 Marfa 1903"----- 2, 001. 283

San Vicente, 10.5 mi. SW. of, about 3 mi. E. of Lindsey mine, 10 ft. W. of rd., 400 yd. S. of yellow bluff, at side of drain, in embedded boulder; standard tablet stamped "2135 Marfa 1903"----- 2, 138. 190

Lindsey mine, about 0.5 mi. NW. of, at sharp N. end of Mariscal Mountain, 15 ft. W. of rd., in saddle, in small loose boulder; standard tablet stamped "2385 Marfa 1903"----- 2, 388. 007

Lindsey mine, 3.5 mi. S. of, about 1 mi. W. of Mariscal Mountain, on rd. S. to Talley Ranch House, 2,000 ft. S. of point where rd. comes through small gap, on E. bank of dry wash, 10 ft. W. of rd., between hills, in rock; standard tablet stamped "2217 Marfa 1903"----- 2, 220. 444

Lindsey mine, 3.9 mi. SW. of, on westernmost of two rds. to SW., 10 ft. S. of rd., on summit of flat ridge, in rock; standard tablet stamped "2325 Marfa 1903"----- 2, 328. 486

Lindsey mine, 6.9 mi. SW. of, 1,800 ft. E. of rd. forks, on slope of small hill in valley, 30 ft. S. of rd., in rock; standard tablet stamped "2138 Marfa 1903"----- 2, 141. 118

## CHISOS MINE QUADRANGLE

[Latitude 29°15'-29°30'; longitude 103°30'-103°45']

## BREWSTER COUNTY

From Lajitas quadrangle east along roads by way of old Terlingua post office and Cigar Spring into Paint Gap quadrangle (by M. S. Bright in 1901 and 1902)

Amarilla Mountain, 0.5 mi. NW. of, about 10 mi. W. of Terlingua, 3.0 mi. E. of Brewster-Presidio county line, in draw, 60 ft. W. of channel, 25 ft. S. of rd., in limestone outcrop; standard tablet stamped "2745 Marfa"----- Feet  
2, 748. 597

Amarilla Mountain, 2.2 mi. by route SE. of, 4 ft. E. of rd., 0.6 ft. W. of canyon, in mound of stone; iron post stamped "2634 Marfa"----- 2, 637. 658

Amarilla Mountain, 4.5 mi. by route SE. of, 2.0 mi. S. of Dewees furnace (abandoned), 160 ft. NE. of rd. forks, on summit of small ridge, on NW. side of rd.; iron post stamped "2816 Marfa"-----	Feet 2, 819. 691
Dewees furnace, 2.8 mi. E. of, at junction of rd. NW. to Colquitt-Tigner mine, in limestone outcrop; standard tablet stamped "3066 Marfa" (reported by C. P. Ross in 1934 as destroyed)-----	3, 069. 918
Terlingua, about 1.6 mi. SW. of, 3.5 mi. SW. of Cigar Spring, 1,200 ft. SE. of McKinney-Parker mine, on E. side of draw, at rd. forks, on N. side of rd.; iron post stamped "2722 Marfa" (not found by C. P. Ross in 1934)-----	2, 725. 893
Cigar Spring, 0.8 mi. SW. of, 1.5 mi. by rd. NE. of Terlingua, at junction of Alpine and Cigar Spring rds., 100 ft. E. of Alpine rd., 15 ft. W. of Cigar Spring rd.; iron post stamped "2716 Marfa"-----	2, 719. 825
Cigar Spring, 2.8 mi. E. of, 3.5 mi. W. of Joe Black Spring, about 1 mi. E. of a rock corral, on N. side of rd., on sharp rock ridge; iron post stamped "2577 Marfa" (not found by C. P. Ross in 1934)-----	2, 580. 715

From Mariposa furnace, near Tres Cuevas Mountain, east along roads about 4 miles, thence northwest to Colquitt-Tigner mine (by M. S. Bright in 1902)

Mariposa furnace, 0.3 mi. E. of, 0.7 mi. W. of Dewees furnace, at old Terlingua post office, in stone building formerly used as store of Marfa Mariposa Mining Co. and also as post office, in N. wall of building; standard tablet stamped "3272 Marfa" (not found by C. P. Ross in 1934)-----	3, 275. 899
Dewees furnace, near, in S. wall of stone warehouse; aluminum tablet stamped "3201 Marfa" (reported by J. P. Dod in 1925 as destroyed)-----	3, 204. 819
Colquitt-Tigner mine, about 2 mi. by direct trail NE. of Dewees furnace, 1.0 mi. W. of The Long Draw, 125 ft. SE. of stone building, in limestone ledge; standard tablet stamped "3274 Marfa"-----	3, 277. 750

From junction near Cigar Spring of old Alpine rd. and rd. to Joe Black Spring, north and northeast along roads into Agua Fria quadrangle (by M. S. Bright in 1902)

Cigar Spring, 3.8 mi. N. of, at junction of trail to Lost Spring with old Alpine rd., 30 ft. S. of draw, 10 ft. W. of rd.; iron post stamped "2671 Marfa"-----	2, 674. 758
Reed ranch house, 1.5 mi. N. of rock corral, 400 ft. S. of rd. forks, on W. side of rd., at foot of hill; iron post stamped "2795 Marfa"-----	2, 798. 823
Reed ranch house, 5.0 mi. NE. of, 3.0 mi. SW. of Adobe Walls, 25 ft. S. of rd., at foot of black hill; iron post stamped "3049 Marfa"-----	3, 052. 741
Adobe Walls and Spring, 0.2 mi. W. of, 15 ft. W. of rd., at foot of black hill; iron post stamped "3313 Marfa"-----	3, 316. 871

From road forks 1.5 miles north of Reed ranch rock corral northwest along road into Agua Fria quadrangle (by M. S. Bright in 1902; leveled twice)

Agua Fria Springs, 6.3 mi. SE. of, about 0.5 mi. N. of Crenshaws Camp, 75 ft. S. of Terlingua Creek, 6 ft. S. of trail, at NW. corner of rock bluff; iron post stamped "2885 Marfa"-----	2, 888. 838
Agua Fria Springs, 3.2 mi. SE. of, on N. side of draw, at E. foot of hill, 2 ft. S. of trail; iron post stamped "3175 Marfa"-----	3, 178. 759

From point on Amarilla Mountain-Terlingua road about 2 miles southeast of Dewees furnace southeast along road into Terlingua Abaja quadrangle (by M. S. Bright in 1902)

Terlingua Abaja, 6.0 mi. NW. of, about 8.5 mi. by rd. NW. of mouth of Grand Canyon of Santa Helena, 10 ft. W. of rd., on side of knoll; iron post stamped "2516 Marfa" (not found by C. P. Ross in 1934)-----	2, 520. 221
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## CLINT QUADRANGLE

19

## CHISPA QUADRANGLE

[Latitude 30°30'-31°; longitude 104°30'-105°]

## CULBERSON, HUDSPETH, AND PRESIDIO COUNTIES

From Fay, Galveston, Harrisburg & San Antonio Ry. station, north across country  
into Van Horn quadrangle (by Chester Irvine in 1903)

Fay, 800 ft. E. of section foreman's house, 150 ft. E. of sta. sign, on W. side of gate entrance to Van Horn rd.; iron post stamped "4007 Van Hn 1903", U. S. C. & G. S. B. M. designated "P 22"-----	<i>Feet</i> 4, 015. 268
Cox ranch house, 600 ft. E. of, E. side of gate; iron post stamped "3948 Van Hn 1903"-----	3, 955. 665

## CIENEGA QUADRANGLE

[Latitude 29°45'-30°; longitude 104°-104°15']

## PRESIDIO COUNTY

From San Esteban Dam quadrangle at point on Marfa road east of Frenchman Hills  
south along road to road forks near Bogles ranch house, thence southeast into  
Jordan Gap quadrangle (by M. S. Bright in 1901)

Alamito (old Dysart post office), 7.2 mi. N. of, about 2 mi. across country W. of Alamito Creek and Penitas ranch house, 900 ft. S. of rd. forks, on W. side of rd.; iron post stamped "4024 Marfa"-----	<i>Feet</i> 4, 027. 296
Alamito, 3.8 mi. N. of, on summit of ridge, on W. side of rd.; iron post stamped "3975 Marfa"-----	3, 978. 308
Alamito, 2.0 mi. N. of, on summit of ridge, 200 ft. N. of rd. forks, on W. side of rd.; iron post stamped "3853 Marfa"-----	3, 856. 213
Alamito, on W. side of rd., at NE. corner of storehouse of Carlos Aererav; iron post stamped "3772 Marfa"-----	3, 775. 433
Alamito, 2.5 mi. S. of, about 1 mi. from Bogles ranch house, in rd. forks; iron post stamped "3715 Marfa" (recovered by D. S. Birkett in 1917)-----	3, 718. 507
Alamito, 6.2 mi. S. of, in small valley, 12 ft. W. of rd., 75 ft. E. of white ridge; iron post stamped "3603 Marfa"-----	3, 606. 197

At Penitas ranch house (by D. S. Birkett in 1917)

Alamito, 7.0 mi. NW. of, 1.2 mi. E. of Marfa rd., 1,000 ft. W. of Alamito Creek, at N. entrance to Penitas ranch house, in concrete step; aluminum tablet stamped "3985 1917"-----	3, 984. 794
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## CLINT QUADRANGLE

[Latitude 31°30'-31°45'; longitude 106°-106°15']

## EL PASO COUNTY

From Clint post office (near San Elizario) east along north Salt Lake road 15 miles  
into Cerro Alto quadrangle (double-run line by M. S. Bright in 1901)

Clint, at NW. corner of post-office building; iron post stamped "3625 SE."-----	<i>Feet</i> 3, 632. 741
Clint, in front of sta.; top of rail-----	3, 635. 3
Clint, 4.8 mi. E. of, in rd. forks; iron post stamped "3993 SE."-----	4, 000. 951
Clint, 10.5 mi. E. of, 400 ft. W. of angle in rd. to SE., on N. side of rd.; iron post stamped "4039 SE."-----	4, 046. 703

## DELAWARE CREEK QUADRANGLE

[Latitude 31°30'-32°; longitude 104°-104°30']

## CULBERSON AND REEVES COUNTIES

From point in Orla quadrangle 2.4 miles north of Angeles along highways west and south to quarter corner between secs. 31 and 36, T. 1, blocks 57 and 58, thence southwest to southeast corner of sec. 45, T. 1, block 58, thence east into Orla quadrangle (by H. P. Kilby in 1925).

Angeles, 2.4 mi. N. and 1.1 mi. W. from, at NW. cor. sec. 30, 20 ft. E. of fence corner at primary traverse station 232; top of iron bolt...	Feet 2, 933. 05
Angeles, 1.4 mi. N. and 1.1 mi. W. from, at SW. cor. sec. 30, 20 ft. E. of fence line; top of bolt.....	2, 953. 87
Angeles, 0.6 mi. N. and 2.0 mi. W. from, at three-way fence corner, 15 ft. N. of corner, at quarter cor. secs. 31 and 36, T. 1, blocks 57 and 58 W.; iron post stamped "Y 1 K 1 1925".....	2, 964. 021
Angeles, 0.6 mi. N. and 3.0 mi. W. of, 4 ft. N. of fence at cor. secs. 35 and 36; top of galvanized-iron pipe.....	2, 979. 34
Angeles, 4.0 mi. W. of, at forks of old rd., at mouth of drain from W.; iron post stamped "Y 2 K 2 1925".....	3, 039. 074
Angeles, 4.0 mi. W. and 1.1 mi. S. of, 50 ft. E. of rock-pile signal of primary traverse sta.; top of rock ledge; chiseled square.....	3, 083. 77
Angeles, 4.0 mi. W. and 2.1 mi. S. of, 11.7 mi. NW. of Orla, in SE. cor. of sec. 45, T. 1, block 58, on NE. slope of bare knoll; iron post stamped "Y 3 K 3 1925".....	3, 121. 864
Reference mark, 35 ft. SW. of iron post, on top of rock; chiseled square.....	3, 122. 67
Orla, 10.7 mi. NW. of, at top of hill, at N. edge of rd., top of rock; chiseled square.....	3, 159. 88
Orla, 9.6 mi. NW. of, 10 ft. N. of rd., on top of small knoll, on top of flat rock; chiseled square .....	3, 044. 29
Orla, 8.6 mi. NW. of, near gate in E.-W. fence, N. of fence and 4 ft. from T-fence S.; iron post stamped "Y 4 K 4 1925".....	2, 983. 345
Orla, 7.8 mi. NW. of, 4 ft. N. of rd.; top of edge of 2-in. iron pipe....	2, 989. 24
From northwest corner of Orla quadrangle west along Texas-New Mexico State line <sup>6</sup> to Atchison, Topeka & Santa Fe Railway (by H. P. Kilby in 1925)	
Tex.-N. Mex. boundary survey milepost 55; U. S. Boundary Commission iron post.....	2, 865. 811
Monument 24 (U. S. Boundary Commission concrete post), 6.1 mi. N. of Angeles, 295 ft. E. of R. R.; brass plate.....	2, 867. 301
Atchison, Topeka & Santa Fe Ry. milepost 218; top.....	2, 859. 796
U. S. C. & G. S. B. M. designated "G 21".....	2, 871. 280

## EMORY PEAK QUADRANGLE

[Latitude 29°-29°15'; longitude 103°15'-103°30']

## BREWSTER COUNTY

From Paint Gap quadrangle southwest along road and trail into Terlingua Abaja quadrangle (by M. S. Bright in 1902)

Burro Springs, 2.6 mi. E. of, 5.0 mi. SW. of Rock Hut, at summit of divide, 20 ft. E. of smugglers trail, in flint outcrop; aluminum tablet stamped "3842 Marfa".....	Feet 3, 846. 447
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<sup>6</sup> As the boundary line between Texas and New Mexico is slightly north of latitude 32°, the U. S. Boundary Commission monuments are actually in the Carlsbad (N. Mex.-Tex.) quadrangle, but the elevations of these monuments are included here for convenience.

Burro Springs, 1.5 mi. SW. of, 20 ft. W. of rd., on N. bank of draw, in partly embedded boulder; aluminum tablet stamped "2963 Marfa"-----	Feet 2, 966. 939
The Chimneys, 1.5 mi. W. of, 4.6 mi. SW. of Burro Springs, 100 ft. SW. of rd., on flat ridge in sandstone outcrop; aluminum tablet stamped "2634 Marfa"-----	2, 637. 910
From Chilicotal quadrangle west along roads near Rio Grande into Terlingua Abaja quadrangle (by Chester Irvine in 1903)	
Mariscal Mountain, 10.5 mi. W. of, 3.0 mi. E. of Alvin Reed Spring, 10 ft. N. of rd., on low ridge, between drains; standard tablet stamped "2269 Marfa 1903"-----	2, 272. 228
Reed Camp, at Reed Camp bend of Rio Grande, on end of ridge, 30 ft. W. of rd., on W. side of mouth of large drain; standard tablet stamped "2053 Marfa 1903"-----	2, 056. 010
Reed Camp, 3.5 mi. W. of, 3.6 mi. E. of Mexican settlement, 1.0 mi. S. of Four Blackjacks, 20 ft. S. of rd., on S. side of drain; standard tablet stamped "2140 Marfa 1903"-----	2, 142. 884
Mexican settlement, 0.6 mi. E. of, 40 ft. NW. of forks of rd., on W. bank of large drain, in embedded boulder; standard tablet or drill hole for tablet-----	2, 089. 884
Mexican settlement, 2.5 mi. N. of, 6.0 mi. E. of Cipriano Hernandez ranch house, 1.0 mi. N. of point where rd. leaves Rio Grande and goes around hills, 10 ft. S. of rd., on summit of divide, in embedded boulder; standard tablet or drill hole for tablet-----	2, 255. 238
Cipriano Hernandez ranch house, 3.0 mi. E. of, 20 ft. S. of rd., at summit of divide, in 1- by 2- by 3-ft. boulder embedded 2 ft. in ground; standard tablet or drill hole for tablet-----	2, 137. 881

## FORT BLISS QUADRANGLE

[Latitude 31°45'-32°; longitude 106°-106°15']

## EL PASO COUNTY

In El Paso, from Union Station along streets by way of city hall to El Paso County Courthouse, and back to Union Station (by M. S. Bright in 1905; first-order leveling)

El Paso, Atchison, Topeka & Santa Fe Ry. sta., in front of; top of rail-----	Feet 3, 709. 5
El Paso, at N. entrance to city hall, on W. end of lower step; standard tablet stamped "3698" (reported in 1921 that tablet was broken off, leaving shank embedded in step; top of shank estimated elevation 3,710.681)-----	3, 710. 731
El Paso, at S. entrance to city hall, at E. end of lower step in sidewalk between curb and cement step; standard tablet stamped "365 B 1905" (reported in 1921 that tablet was broken but about 10 per cent of it remained in place)-----	3, 709. 701
El Paso, at S. side of county courthouse entrance, in W. end of lower step; aluminum tablet stamped "366 B 1905"-----	3, 710. 361
El Paso, at county courthouse, on W. side of N. entrance, on top of pyramid stone; cross (city b. m.)-----	3, 711. 237
El Paso, in front of Southern Pacific R. R. sta.; top of rail-----	3, 725. 1
El Paso, in front of Union Station; top of rail-----	3, 725. 2

From El Paso north along highway to Newman ranch house near State line (by Fred McLaughlin in 1907)

El Paso, at intersection, 500 ft. N. of El Paso & Southwestern R. R. and Fort Bliss street-car line crossing; top of rail-----	3, 721. 2
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Fort Bliss, 0.3 mi. NW. of, in NE. corner of Ford's brick saloon; aluminum tablet stamped "3889"-----	<i>Feet</i> 3, 901. 675
Taylor ranch house, 30 ft. W. of rd., on N. side of fence, on old R. R. grade; iron post stamped "3875"-----	3, 887. 787
Taylor ranch house, 2.2 mi. N. of, on NE. side of entrance of a two- story ranch house, 400 ft. W. of rd., in top step; aluminum tablet stamped "3946"-----	3, 956. 957
Taylor ranch house, 5.2 mi. N. of, 15 ft. W. of rd., near old reservoir; iron post stamped "4000"-----	4, 012. 767
Newman ranch house, 1.2 mi. S. of, on E. side of rd., in fence corner; iron post stamped "4029"-----	4, 041. 850

From El Paso northeast along El Paso & Southwestern R. R. to State line (part  
of single line to point 10 miles southeast of Alamogordo, N. Mex.; by K. W.  
Trimble in 1909)

El Paso, at intersection of El Paso & Southwestern R. R. and Mace Avenue; top of rail-----	3, 729. 4
El Paso, Galveston, Houston & San Antonio R. R. intersection, in N. end of switch block; nail-----	3, 704. 18
Fort Bliss, 1.7 mi. S. of, 4.0 mi. NE. of Union Station at El Paso, 72 ft. S. of seventh pole S. of milepost 1300, about 50 ft. W. of center line of track; iron post stamped "3805" (recovered by U. S. C. & G. S. in 1932)-----	3, 805. 796
Fort Bliss, on S. side of water tower; top of bolt stamped "3894.9 B. M."-----	3, 895. 98
Planeport, 0.1 mi. S. of, 7.0 mi. NE. of Union Station at El Paso, 8 ft. N. of seventh pole S. of milepost 1303, 50 ft. W. of center line of track; iron post stamped "3873" (recovered by U. S. C. & G. S. in 1932)-----	3, 874. 316
Pancho, 3.2 mi. SW. of, 10.0 mi. NE. of Union Station at El Paso, 155 ft. S. of sixth pole S. of milepost 1306, 48 ft. W. of center line of track; iron post stamped "3899" (recovered by U. S. C. & G. S. in 1932)-----	3, 899. 369
Pancho, 0.3 mi. SW. of, 12.9 mi. NE. of Union Station at El Paso, 3 ft. S. of seventh pole S. of milepost 1309, 51 ft. W. of center line of track; iron post stamped "3919" (recovered by U. S. C. & G. S. in 1932)-----	3, 920. 084
Pancho, 2.8 mi. NE. of, 4.4 mi. SW. of Newman, N. Mex., 9 ft. N. of seventh pole S. of milepost 1312, 51 ft. W. of center line of track; iron post stamped "3982" (recovered by U. S. C. & G. S. in 1932)-----	3, 982. 561
Newman, N. Mex., 1.3 mi. SW. of R. R. sta., 22 ft. N. of seventh pole S. of milepost 1315, 51 ft. W. of center line of track, 27 ft. E. of center line of U. S. Highway 70; iron post stamped "4000" (recov- ered by U. S. C. & G. S. in 1932)-----	4, 000. 441

#### FORT D. A. RUSSELL QUADRANGLE

[Latitude 30°15'–30°30'; longitude 104°–104°15']

#### JEFF DAVIS AND PRESIDIO COUNTIES

From Marfa south along road east of Rancheria Hills and Frenchman Hills  
into San Esteban Dam quadrangle (by M. S. Bright in 1901)

Marfa, in front of sta.; top of rail-----	<i>Feet</i> 4, 692. 0
Marfa, in SE. corner stone of county courthouse; aluminum tablet stamped "4695 Marfa", U. S. C. & G. S. B. M. designated "T 24"-----	4, 698. 029
Marfa, at front entrance to Murphy & Walker's brick storehouse; iron post stamped "4689 Marfa"-----	4, 692. 130
Marfa, 3.0 mi. S. of, at summit of ridge, on E. side of rd., by wire fence; iron post stamped "4628 Marfa"-----	4, 631. 076

## GUADALUPE PEAK NO. 1 QUADRANGLE

(Latitude 31°45'-32°; longitude 104°30'-104°45')

## CULBERSON COUNTY

From Guadalupe Peak No. 2 quadrangle northeast along El Paso-Carlsbad highway (U. S. Highway 62) into New Mexico (by J. M. Lawson in 1933)

Pine Spring, 4.2 mi. NE. of, 55 ft. S. of highway on top of prominent boulder; chiseled square	Feet 4, 963. 48
Pine Spring, 5.0 mi. NE. of, 95 ft. W. of center line of rd. crossing Cherry Creek, 80 ft. E. of dim rd. fork N., 20 ft. N. of highway, on top of large boulder; chiseled square	4, 771. 04
Cherry triangulation sta. (situated on highest point of Cherry Hill, 307 ft. NW. of center line of highway), 19 ft. N. 48°7' E. (true bearing) from tablet marking, about 5 mi. NE. of Pine Springs, 0.5 mi. NE. of point where Cherry Canyon crosses El Paso-Carlsbad highway, cemented in rock in place; standard triangulation reference tablet stamped "R 1932"	4, 522. 963
Pine Spring, 7.0 mi. NE. of, 35 ft. S. of highway, 4 ft. E. of fence corner and E. post of gate across rd. S. to D Ranch houses, on N. side of woven-wire fence, on top of partly embedded boulder; chiseled square	4, 686. 47
Pine Spring, 8.1 mi. NE. of, 30 ft. N. of highway, on W. bank of canyon crossing highway, at highway signpost, on top of partly embedded boulder; chiseled square	4, 550. 44
Pine Spring, 8.7 mi. NE. of, 7.2 mi. SW. of North Mill windmill, 55 ft. S. of highway, in bed of Lamar Canyon, on top of large, smooth sandstone ledge; standard tablet stamped "L 23 1933 4456"	4, 456. 313
Reference mark; 60 ft. NE. of tablet, 65 ft. E. of rd. crossing bed of Lamar Canyon, 50 ft. S. of highway, on top of E. bank of canyon, on top of rock outcrop; chiseled square	4, 463. 68
North Mill windmill, 6.2 mi. SW. of, 65 ft. NW. of junction of rd. fork N., 30 ft. N. of highway, on top of partly embedded boulder; chiseled square	4, 568. 74
North Mill windmill, 5.0 mi. SW. of, 517 ft. E. of junction of T-rd. S., 20 ft. N. of highway, 20 ft. E. of center of dry wash, near E. end of N. head wall of culvert, on top of partly embedded boulder; chiseled square	4, 680. 15
North Mill windmill, 4.0 mi. SW. of, 325 ft. W. of rd. forks in drain, 200 ft. N. of highway, at point of ridge between main drain and small drain from N., on prominent rock ledge; standard tablet stamped "L 24 1933 4729"	4, 729. 308
Reference mark, about 1,100 ft. E. of tablet, 15 ft. N. of highway, at angle of highway and foot of cliff adjoining it, on top of rock outcrop; chiseled square	4, 691. 72
North Mill windmill, 2.8 mi. SW. of, 35 ft. W. of junction of rd. N. to Gray Ranch House, 20 ft. N. of highway, near Gray's mail box, on top of boulder; chiseled square	4, 663. 48
North Mill windmill, 1.8 mi. SW. of, 33 ft. S. of highway, at highway signpost, on top of rock outcrop; chiseled square	4, 587. 58
North Mill windmill, 1.0 mi. W. of, on S. side of highway, 3 ft. E. of large sign reading "La Caverna Restaurant", in concrete post; standard tablet stamped "L 25 1933 4532"	4, 531. 881

Reference mark, 90 ft. N. of tablet, in ditch in solid rock, on S. side of highway, on rock surface; chiseled square.....	Feet 4, 532. 04
North Mill windmill, 1.1 mi. NE. of, 130 ft. NE. of sharp turn in highway, 50 ft. E. of junction of rd. N., 2 ft. W. of sign reading "15 mi. to Washington Camp", on top of boulder; chiseled square..	4, 357. 38
North Mill windmill, 2.2 mi. NE. of, 25 ft. E. of highway, 20 ft. NE. of E. end of culvert, on top of boulder; chiseled square.....	4, 308. 39
North Mill windmill, 2.8 mi. NE. of, 457 ft. W. of McKittrick Canyon crossing, 70 ft. E. of junction of rd. to 9 K ranch house and compression sta. no. 1 of Western Gas Co., 55 ft. E. of mail boxes, on top of rock outcrop; chiseled square.....	4, 265. 65
North Mill windmill, 3.4 mi. NE. of, 2 ft. S. of Tex.-N. Mex. State line, 75 ft. N. of cattle-guard and fence line, 25 ft. E. of highway, in concrete post; standard tablet stamped "L 26 1933 4277".....	4, 276. 934

### GUADALUPE PEAK NO. 2 QUADRANGLE

[Latitude 31°45'-32°; longitude 104°45'-105°]

#### CULBERSON AND HUDSPETH COUNTIES

From Guadalupe Peak No. 3 quadrangle north along highway from Van Horn to its junction with El Paso-Carlsbad highway, thence north and northeast along El Paso-Carlsbad highway into Guadalupe Peak No. 1 quadrangle (by J. M. Lawson in 1933)

Six Bar ranch house, 3.4 mi. N. of, on top of W. end of galvanized iron pipe culvert.....	Feet 4, 011. 52
Six Bar ranch house, 4.4 mi. N. of, 0.4 mi. S. of junction of highway from Van Horn with El Paso-Carlsbad highway, 1,110 ft. N. of State maintenance camp 23, opposite curve sign, at edge of rd. right of way, on top of boulder; chiseled square.....	4, 085. 54
Forks triangulation sta., 58 ft. E. of tablet marking, 0.5 mi. SE. of junction of highway from Van Horn with El Paso-Carlsbad highway, about 500 ft. E. of rd. from Van Horn, near NW. end of isolated ridge, on top of hill, in rock in place; standard triangulation reference tablet.....	4, 231. 515
Signal Peak filling sta., 5.3 mi. S. of, 250 ft. S. of junction of rd. from Van Horn with El Paso-Carlsbad highway, at NE. corner of large hotel poster, in concrete post; standard tablet stamped "L 9 1933 4058" (recovered by U. S. C. & G. S. in 1933).....	4, 057. 594
Reference mark, 500 ft. N. of tablet, at large concrete bridge over creek, on top of SE. wing wall; chiseled square.....	4, 063. 63
Signal Peak filling sta., 3.9 mi. S. of, 20 ft. E. of El Paso-Carlsbad highway, on top of rock outcrop; chiseled square.....	4, 181. 93
Signal Peak filling sta., 2.7 mi. S. of, at sharp curve in highway; top of W. end of galvanized iron pipe culvert.....	4, 294. 50
Signal Peak filling sta., 2.2 mi. S. of, in NW. angle at junction of El Paso-Carlsbad highway and Butterfield trail, 35 ft. W. of highway, in concrete post; standard tablet stamped "L 10 1933 4367" (recovered by U. S. C. & G. S. in 1933).....	4, 366. 500
Reference mark, 380 ft. NW. of tablet, on N. side of rd., at E. end of rock guard wall, on top of large, partly embedded boulder; chiseled square.....	4, 383. 00
Signal Peak filling sta., 1.1 mi. SE. of; top of W. end of galvanized iron pipe culvert.....	4, 506. 25

Signal Peak filling sta., 0.6 mi. S. of, in NW. angle of rd. forks to W. and S. at crossing of pipe and telephone lines, in ditch at edge of highway; top of large cast-iron pipe protruding from ground.....	Feet 4, 599. 08
Signal Peak filling sta., 120 ft. E. of, 75 ft. E. of junction of rd. E., on top of rock outcrop; standard tablet stamped "L 11 1933 4733" (recovered by U. S. C. & G. S. in 1933).....	4, 732. 356
Reference mark, 115 ft. N. of tablet, 160 ft. NE. of filling sta., 20 ft. N. of gate across rd. E., on W. side of fence, on top of rock outcrop; chiseled square.....	4, 738. 80
Signal Peak filling sta., 0.8 mi. N. of, 30 ft. E. of highway, 15 ft. E. and 6 ft. W. of sign reading "Black River Village", 35 ft. S. of S. end of rock guard wall, on top of embedded boulder; chiseled square.....	4, 943. 33
Signal Peak filling sta., 1.4 mi. N. of, in W. guard rail of wooden bridge; top of S. bolt.....	5, 126. 36
Signal Peak filling sta., 1.8 mi. N. of, at sharp curve in highway, 17 ft. S. of highway, at foot of SE. abutment of wooden bridge over Guadalupe Canyon, on top of boulder; chiseled square.....	5, 287. 16
Signal Peak filling sta., 2.2 mi. N. of, 80 ft. S. of highway, in small park about halfway up steep mountain grade, 10 ft. N. of rock wall on S. side of park, on top of rock outcrop; chiseled square.....	5, 386. 68
Signal Peak filling sta., 2.7 mi. NE. of, 3.1 mi. SW. of Pine Springs, 75 ft. S. of rd., 315 ft. W. of junction of rd. S. to Pasotex pipe-line sta., on side of hill, on top of prominent rock outcrop; standard tablet stamped "L 20 1933 5427" (recovered by U. S. C. & G. S. in 1933).....	5, 425. 806
Reference mark, 55 ft. E. of tablet, 70 ft. S. of highway, on prominent boulder.....	5, 423. 60
Pine Spring, 2.5 mi. SW. of, in SW. corner of triangle at junction of rd. SE. to U. S. radio tower on Guadalupe Summit and Pasotex pipe-line sta. "Guadalupe", 90 ft. NE. of SW. rd. junction in triangle, on top of boulder; chiseled square.....	5, 315. 16
Pine Spring, 1.5 mi. SW. of, 17 ft. E. of highway, on top of divide, on top of boulder set in ground; chiseled square.....	5, 467. 51
Pine Spring, 0.6 mi. SW. of, on N. side of deep highway cut through hill, about 1,000 ft. S. of highest point on Texas portion of highway, 30 ft. S. of fence corner, just N. of lone tree in fence line, on top of boulder set in ground; chiseled square.....	5, 694. 09
Pine Spring, 130 ft. N. of garage and store, 550 ft. E. of junction of rd. to State maintenance camp, on E. side of camp, in rock outcrop; standard tablet stamped "L 21 1933 5634" (recovered by U. S. C. & G. S. in 1933).....	5, 633. 755
Reference mark, 70 ft. W. of tablet, on N. side of highway, opposite store, on top of embedded rock; chiseled square.....	5, 635. 62
Pine Spring, 1.1 mi. E. of, 40 ft. E. of junction of rd. N. to Frijole post office, on top of embedded rock; chiseled square.....	5, 428. 85
Pine Spring, 3.2 mi. NE. of, 120 ft. E. of Courtesy Cottage service sta., 55 ft. N. of highway, on top of rock outcrop; standard tablet stamped "L 22 1933 5095" (recovered by U. S. C. & G. S. in 1933).....	5, 095. 643
Reference mark, 300 ft. W. of tablet, 90 ft. W. of Courtesy Cottage service sta., on top of rock outcrop; chiseled square.....	5, 099. 57

From point 5.2 miles south of Signal Peak filling station west along El Paso-Carlsbad highway to forks near Basin triangulation station, thence along road north to Lewis Well, thence east and southeast on old Butterfield trail to point 2.2 miles south of Signal Peak filling station (by J. M. Lawson in 1933)

Blue Bonnet filling sta., 6.0 mi. E. of, 1.1 mi. SW. of junction of El Paso-Carlsbad highway and highway from Van Horn, on top of hill, 25 ft. N. of El Paso-Carlsbad highway, on top of large boulder; chiseled square-----	Feet 4, 033. 08
Blue Bonnet filling sta., 5.1 mi. E. of, E. of gravel pit, 50 ft. S. of highway, on top of large boulder; chiseled square-----	3, 938. 73
Blue Bonnet filling sta., 4.0 mi. E. of, on fence line, 75 ft. S. of cattle guard crossing highway, in concrete post; standard tablet stamped "L 12 1933 3855"-----	3, 854. 354
Blue Bonnet filling sta., 3.1 mi. E. of, 60 ft. N. of highway, on Culberson-Hudspeth county line, on concrete monument; chiseled square-----	3, 804. 06
Blue Bonnet filling sta., 0.8 mi. E. of, in line with telephone poles on S. edge of highway right of way, 3 ft. W. of pole, on top of boulder; chiseled square-----	3, 673. 71
Blue Bonnet filling sta., 400 ft. W. of, in NW. angle of junction of rd. N. to Ables, 60 ft. N. and 15 ft. W. of center of junction, in concrete post; standard tablet stamped "L 13 1933 3639" (recovered by U. S. C. & G. S.)-----	3, 638. 444
Reference mark, in SW. angle of junction of old rd. S. to Van Horn, in top of concrete highway right-of-way marker-----	3, 639. 65
Basin triangulation sta., 200 ft. E. of present shore line of Dry Salt Lake, on small sand hill 100 ft. N. of highway, 0.6 mi. W. of junction of highway with rd. N. to Ables, cemented in top of galvanized iron pipe flush with ground; standard tablet stamped "R 1932 Basin 3649" (recovered by U. S. C. & G. S. in 1933)-----	3, 639. 277
Blue Bonnet filling sta., 1.0 mi. N. of, 2.1 mi. S. of Ables post office (also Hammack ranch house), on S. side of fence, 27 ft. W. of gate across rd., on top of boulder; chiseled square-----	3, 648. 05
Ables post office, 1.1 mi. S. of, at curve in rd., 25 ft. E. of rd., on top of boulder; chiseled square-----	3, 654. 13
Ables post office, about 0.2 mi. S. of, on Hammack ranch, 240 ft. W. of windmill, 25 ft. E. of rd., at SW. corner of corral and garden, 8 ft. N. of fence corner, in concrete post; standard tablet stamped "L 14 1933 3638"-----	3, 637. 572
Reference mark, 190 ft. E. of tablet, about 60 ft. NW. of windmill, in root on S. side of cottonwood tree; copper nail and washer-----	3, 638. 11
Hammack ranch house, 1.2 mi. N. of, on rd. to Lewis Well and Orange, N. Mex., on small sand dune, 15 ft. E. of rd., on top of boulder; chiseled square-----	3, 621. 23
Hammack ranch house, 1.6 mi. N. of, on rd. to J. A. Williams ranch and Lewis Well, on top of long, low sand ridge, 15 ft. E. of rd., on top of boulder set in ground; chiseled square-----	3, 627. 10
Hammack ranch house, 2.5 mi. N. of, 1 ft. N. of fence line that separates the Hammack and Williams cattle ranges, 24 ft. W. of gate, in concrete post; standard tablet stamped "L 15 1933 3627"-----	3, 625. 931
Reference mark, 152 ft. E. of tablet, in NW. corner of T-fence N., on top of boulder; chiseled square-----	3, 625. 66

Hammack ranch house, 3.3 mi. N. of, 3.2 mi. SE. of Lewis Well, near junction of route rd. with rd. NW. into New Mexico and with old Butterfield trail, 40 ft. S. of gate to J. A. Williams old ranch house, and just N. of corrals, 1 ft. W. of fence, on top of boulder set in ground; chiseled square-----	Feet 3, 640. 34
Lewis Well, 2.2 mi. S. of windmill (used as triangulation sta.), 10 ft. E. of rd., on top of boulder set in ground; chiseled square-----	3, 667. 83
Lewis Well, 1.5 mi. S. of windmill, 1 ft. N. of fence line, 10 ft. W. of gate, on top of boulder set in ground; chiseled square-----	3, 663. 07
Lewis Well, 0.4 mi. S. of windmill, near fence corner, on S. side of E.-W. fence and 5 ft. W. of fence N., on top of boulder set in ground; chiseled square-----	3, 679. 73
Lewis Well, 40 ft. S. of windmill, 5 ft. W. and 2 ft. S. of SE. corner of corral fence around water tank and windmill, in concrete post; standard tablet stamped "L 16 1933 3690"-----	3, 689. 021
Reference mark, on NE. leg of windmill and brace to SE. leg; lower nut-----	3, 690. 79
Lewis Well, 0.4 mi. E. of, on trail to J. A. Williams ranch house (situated in foothills W. of El Capitan Mountain), at corner formed by fences to N. and W., top of iron rod set in concrete (used as E. brace of fence at fence corner)-----	3, 726. 02
Lewis Well, 1.5 mi. E. of, 125 ft. N. of trail, 3 ft. E. of lone post, on top of rock set in ground; chiseled square-----	3, 842. 69
Lewis Well, 2.8 mi. E. of, on old Butterfield trail at point 15 ft. N. of its junction with trail W., in concrete post; standard tablet stamped "L 17 1933 4016"-----	4, 015. 453
Reference mark, 700 ft. W. of tablet, 20 ft. E. of trail, at pile of rocks (probably section corner), on top of boulder set in ground; chiseled square-----	3, 995. 40
Lewis Well, 3.9 mi. E. of, 2.0 mi. along old Butterfield trail W. of J. A. Williams ranch house, 30 ft. S. of creek, 20 ft. E. of trail, 40 ft. E. of rock pile (probably section corner), on top of rock outcrop; chiseled square-----	4, 246. 34
J. A. Williams ranch house, 1.1 mi. W. of, 15 ft. S. of old Butterfield trail, on top of large boulder; chiseled square-----	4, 531. 05
J. A. Williams ranch house, 0.6 mi. W. of, 0.4 mi. W. of sharp turn to SW. in old Butterfield trail, 20 ft. N. of trail, on top of large boulder; chiseled square-----	4, 707. 20
J. A. Williams ranch house, 1.5 mi. along old Butterfield trail SW. of, about 0.5 mi. SE. of sharp turn in trail, on top of rocky ridge between two N. peaks of Patterson Hills (trail circles N. point of hills), 410 ft. NW. of gate across trail from E., in large rocky ledge; standard tablet stamped "L 18 1933 4580"-----	4, 579. 291
J. A. Williams ranch house, 2.1 mi. SW. of, on old Butterfield trail about 6 mi. NW. from its junction with El Paso-Carlsbad highway, at NW. corner of cultivated field, 6 ft. E. of trail, 5 ft. W. of gate, 2 ft. S. of fence corner; top of iron bar set in concrete-----	4, 626. 83
J. A. Williams ranch house, 3 mi. by trail S. of, about 5 mi. NW. of junction of Butterfield trail and El Paso-Carlsbad highway, 200 ft. N. of junction of two dry gullies, on W. bank of E. gully, 40 ft. E. of rd. crossing gullies, on top of embedded boulder; chiseled square--	4, 551. 46
Junction of Butterfield trail and El Paso-Carlsbad highway, 4.2 mi. NW. of, 52 ft. W. of trail, at SE. corner of rock dam, on top of rock; chiseled square-----	4, 464. 13

Junction of Butterfield trail and El Paso-Carlsbad highway, 3.3 mi. NW. of, 25 ft. E. of trail, in bottom of wide shallow wash, on top of embedded boulder; standard tablet stamped "L 19 1933 4441"-----	Feet 4, 440. 201
Reference mark, 115 ft. N. of tablet, on N. bank of wide dry wash, 20 ft. W. of rd., on top of large boulder; chiseled square-----	4, 445. 42
Junction of Butterfield trail and El Paso-Carlsbad highway, 2.3 mi. NW. of, on top of hill, just E. of point where trail winds steeply downhill to W., on top of large embedded boulder; chiseled square-----	4, 424. 69
Junction of Butterfield trail and El Paso-Carlsbad highway, 1.4 mi. NW. of, on S. bank of dry wash, 12 ft. E. of rd. crossing wash, on top of large boulder; chiseled square-----	4, 331. 25
Junction of Butterfield trail and El Paso highway, 0.8 mi. NW. of, 45 ft. W. of junction of trail with rd. following pipe and telephone lines, 2 ft. S. of telephone pole, on top of rock; chiseled square----	4, 309. 33

From point on El Paso-Carlsbad highway 2.5 miles southwest of Pine Spring along road generally south to Guadalupe Summit (by J. M. Lawson in 1933; single-run spur line)

Pine Spring, 3.5 mi. SW. of, 1.5 mi. NE. of U. S. radio tower on Guadalupe Summit, 30 ft. S. of rd. to tower, on W. bank of small drain, on rock outcrop; chiseled square-----	5, 327. 15
Guadalupe Summit, 150 ft. SW. of house at U. S. radio tower, 100 ft. SW. of wall around tower, 65 ft. SE. of fence corner, 50 ft. SE. of rd. forks (or point of loop), on top of rock outcrop; standard tablet-----	5, 445. 653

From Texas-New Mexico State line along road south to Lewis Well (by C. E. Walker in 1933)

Eclipse Well, 6.0 mi. N. of, near Tex.-N. Mex. State line, at fence line just SW. of house of Denman Lewis, 15 ft. N. of gate, on E. side of rd., on top of rock; chiseled square-----	3, 639. 86
Eclipse Well, 5.0 mi. N. of, about 1 mi. SE. of home of Denman Lewis, 8 ft. E. of rd. at bend, on top of rock; chiseled square-----	3, 640. 96
Eclipse Well, 4.7 mi. N. of, about 0.4 mi. NW. of old P X ranch headquarters, 27 ft. E. of windmill, 12 ft. N. and 33 ft. W. of gate, in fence line, in top of 3-in. pipe; standard tablet stamped "31 WA 3642 1933"-----	3, 641. 463
Reference mark, 13 ft. SE. of tablet, 18 ft. W. of gate to road leading to old P X ranch headquarters, on top of rock; chiseled square-----	3, 641. 76
Eclipse Well, 4.0 mi. N. of, 2.0 mi. SE. of home of Denman Lewis, 2,630 ft. NW. of gate between Lewis and Kitchen properties, 8 ft. W. of rd., on top of rock; chiseled square-----	3, 650. 75
Eclipse Well, 3.5 mi. N. of, 2.5 mi. SE. of home of Denman Lewis, 10 ft. W. of gate between Lewis and Kitchen properties, on top of rock; chiseled square-----	3, 674. 36
Eclipse Well, 2.2 mi. N. of, 100 ft. NE. of Sid Ables' well, 4 ft. E. of fence corner, on top of rock; chiseled square-----	3, 718. 43
Eclipse Well, 1.6 mi. N. of, 0.5 mi. SE. of Sid Ables' well, 5 ft. E. of rd.; top of rock in pile-----	3, 732. 80
Eclipse Well, 0.8 mi. N. of, at S. edge of sand dune, 8 ft. W. of rd., in top of 3-in. pipe flush with ground; standard tablet stamped "32 WA 3709 1933"-----	3, 708. 280
Reference mark, 20 ft. S. of tablet, 10 ft. W. of rd.; top of large rock-----	3, 708. 34
Eclipse Well, 100 ft. E. of, on top of rock at fence corner; chiseled square-----	3, 670. 65

Eclipse Well, 0.8 mi. SE. of, 1.8 mi. N. of Lewis Well, 10 ft. E. of gate, on top of large rock; chiseled square.....	Feet 3, 665. 53
Lewis Well, 1.0 mi. N. of, 1.6 mi. SE. of Eclipse Well, 1,950 ft. SE. of gate, 10 ft. E. of rd., on top of rock; chiseled square.....	3, 665. 74

## GUADALUPE PEAK NO. 3 QUADRANGLE

[Latitude 31°30'-31°45'; longitude 104°45'-105°]

## CULBERSON AND HUDSPETH COUNTIES

From Van Horn quadrangle north along Van Horn-Carlsbad road (State Highway 54) into Guadalupe Peak No. 2 quadrangle (by J. M. Lawson in 1933)

Figure 2 ranch house, 3.5 mi. N. of, in SE. angle of junction of rd. E., on top of boulder; chiseled square.....	Feet 3, 614. 88
Figure 2 ranch house, 4.7 mi. N. of, on top of small ridge crossing highway, 40 ft. E. of highway, on top of boulder; chiseled square..	3, 622. 44
Figure 2 ranch, 5.5 mi. N. of, 800 ft. N. of junction of T-rd. E., 37 ft. N. and 30 ft. W. of dim rd. forks, 16 ft. W. of highway signpost, in concrete post; standard tablet stamped "L 3 1933 3624" (recovered by U. S. C. & G. S. in 1934).....	3, 622. 945
Figure 2 ranch house, 6.6 mi. N. of, at foot of break, 20 ft. W. of highway, on top of boulder; chiseled square.....	3, 622. 91
Figure 2 ranch house, 7.6 mi. N. of, 0.9 mi. S. of cattle guard between Figure Two and Wimberley Ranches, on top of ridge, on W. side of rd., on top of iron pipe.....	3, 634. 75
Figure 2 ranch house, 8.5 mi. N. of, on N. line of Figure 2 ranch (S. line of Wimberley Ranch) 33 ft. W. of cattle guard, 1 ft. N. of fence, in concrete post; standard tablet stamped "L 4 1933 3626" (recovered by U. S. C. & G. S. in 1934).....	3, 624. 811
Figure 2 ranch house, 9.5 mi. N. of, 1.0 mi. N. of cattle guard, on S. side of Wimberley ranch house, 100 ft. N. of junction of rd. E., top of low ridge, on W. side of rd., on top of boulder; hollow square..	3, 635. 10
Six Bar ranch house, 7.2 mi. S. of, 10.7 mi. N. of Figure 2 ranch house, 40 ft. N. and 68 ft. E. of junction of rd. W. to Wimberley ranch house, on S. side of dim. rd. E., on top of oak post projecting 1 ft. out of ground; copper nail and washer.....	3, 645. 28
Six Bar ranch house, 6.6 mi. S. of, 45 ft. W. of cattle guard between Wimberley upper and lower ranches, 0.2 mi. E. of ranch houses and windmill, 180 ft. S. of junction of T-rd. W. to ranch, 1 ft. N. of fence, in concrete post; standard tablet stamped "L 5 1933 3665" (recovered by U. S. C. & G. S. in 1934).....	3, 663. 815
Reference mark, 35 ft. E. of tablet, in W. guard rail of cattle guard; top of N. bolt.....	3, 666. 10
Six Bar ranch house, 5.7 mi. S. of, about 1,000 ft. N. of junction of T-rd. E; top of E. end of galvanized iron pipe culvert.....	3, 714. 35
Six Bar ranch house, 3.4 mi. S. of, 300 ft. S. of wooden bridge over creek, 37 ft. E. of rd., 23 ft. E. of and opposite highway curve sign, in concrete post; standard tablet stamped "L 6 1933 3812" (recovered by U. S. C. & G. S. in 1934).....	3, 811. 409
Six Bar ranch house, 2.5 mi. S. of, 130 ft. N. of curve in highway; top of E. end of galvanized-iron pipe culvert.....	3, 860. 45
Six Bar ranch house, 1.5 mi. S. of; top of E. end of galvanized-iron pipe culvert.....	3, 898. 49



Six Bar ranch house, 0.8 mi. S. of, 120 ft. S. of cattle guard between Wimberley and Six Bar ranches, 200 ft. S. of wooden bridge over creek, 39 ft. E. of highway, in concrete post; standard tablet stamped "L 7 1933 3914" (recovered by U. S. C. & G. S. in 1934)	Feet 3, 913. 023
Six Bar ranch house, 2.0 mi. N. of, on top of hill, 40 ft. W. of rd., 22 ft. W. of highway signpost, in concrete post; standard tablet stamped "L 8 1933 3989" (recovered by U. S. C. & G. S. in 1934)	3, 988. 097

## HESS CANYON QUADRANGLE

[Latitude 30°15'-30°30'; longitude 103°-103°15']

## BREWSTER AND PECOS COUNTIES

From Marathon quadrangle northeast along Marathon-Fort Stockton road into Longfellow quadrangle (by S. R. Archer in 1919)

Marathon, 5.8 mi. NE. of, 3.1 mi. NE. of junction of rds. to Fort Stockton and Hess ranch house, 1.0 mi. SW. of right-angle bend to E. in rd., on E. side of rd., at fence line; iron post stamped "4253 1919"	Feet 4, 252. 931
Marathon, 9.2 mi. NE. of, at angle in rd. at end of lane, on N.-S. fence line crossing rd., on S. side of rd., on W. side of fence, in fence corner, 3 ft. NW. of wooden post marked "NE. 72, NW. 73, 73 B. L. K. 2"; iron post stamped "4275 1919"	4, 274. 514
Marathon, 12.8 mi. NE. of, 2.0 mi. SW. of junction of rd. E. to Sanderson, 130 ft. W. of trail crossing, at junction of telephone line S. to Kincaid-Taylor ranch house with main line, on S. side of rd., at foot of junction pole of telephone lines; iron post stamped "4270 1919"	4, 269. 801
Gourley ranch house, 14.8 mi. NE. of Marathon, at junction of rds. NE. to Fort Stockton and E. to Sanderson, on N. side of rd. to Fort Stockton, on top of concrete base of signpost reading "Marathon 14 miles, Stockton 44 miles, Sanderson 56 miles"; chiseled square	4, 235. 13
Gourley ranch house, 1.0 mi. NE. of, at crossing of NW.-SE. trail (leads SE. to Sanderson rd.), in SE. corner of crossing; iron post stamped "4217 1919"	4, 216. 295
Syl Adams (formerly Kendrick) ranch house, 3.3 mi. NE. of Gourley ranch house, 6.7 mi. SW. of Marathon Gap, on rd. to Fort Stockton, at crossing of E.-W. fence, 120 ft. W. of NW. corner of yard to dwelling, 25 ft. E. of gate across rd., at fence line; iron post stamped "4198 1919"	4, 197. 639

Near junction of Gilliland and Spring Canyons—a jog from Altuda quadrangle (by F. L. Shalibo in 1919)

Marathon, 19.9 mi. N. of, on Gilliland Canyon rd., 1.9 mi. S. of S. end of Gilliland Canyon, 30 ft. W. of rd.; iron post stamped "4391 1919"	4, 391. 056
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From Marathon quadrangle north along road to Skinner ranch house into Altuda quadrangle (by James Dod and R. C. Seitz in 1919)

Marathon, 5.3 mi. N. of, on SW. slope of knoll and about 800 ft. from its top, 75 ft. W. of rd., on boulder; chisel cut	4, 317. 87
Marathon, 6.3 mi. N. of, 2.2 mi. SE. of Skinner ranch house, about 0.5 mi. SW. of Hudson No. 2 oil well, in flat S. of Leonard Mountain, 8 ft. W. of rd.; iron post stamped "4361 1919"	4, 361. 233
Skinner ranch house, 500 ft. SE. of, near windmill, at concrete watering trough; SW. corner of top of trough	4, 496. 0

## HOOD SPRING QUADRANGLE

[Latitude 29°45'-30°; longitude 103°-103°15']

## BREWSTER COUNTY

From Santiago Peak quadrangle southeast along Marathon-Boquillas road to its forks near crossing of stream tributary to Maravillas Creek, thence southeast along west road fork into Bone Spring quadrangle (by D. S. Birkett in 1917)

Maravillas Gap, 7.1 mi. SE. of, on Marathon-Boquillas rd., almost opposite Ford ranch house, 5 ft. W. of rd., in hub; copper nail.....	Feet 3, 087. 09
Maravillas Gap, 8.4 mi. SE. of, 8.5 mi. NW. of Twin Mills, 2.2 mi. SE. of gate across rd., 1.3 mi. SE. of Ford ranch house, 3 ft. W. of rd.; top of rock.....	3, 021. 90
Twin Mills, 7.3 mi. NW. of, 2.5 mi. SE. of Ford ranch house, at junction of Marathon-Boquillas rd. (old rd.) with dim rd. S., in forks; iron post stamped "2981 1917".....	2, 982. 465
Twin Mills, 6.2 mi. NW. of, at junction of route rd. with rd. N., on SW. side of main rd.; top of rock.....	3, 018. 83
Twin Mills, 4.7 mi. NW. of, 0.3 mi. NW. of rd. fork leading W. to windmill, 20 ft. W. of rd.; top of rock.....	2, 923. 20
Twin Mills, 3.7 mi. NW. of, about 0.8 mi. NE. of windmill, 30 ft. W. of old Marathon-Boquillas rd.; iron post stamped "2891 1917".....	2, 891. 726
Twin Mills, 2.1 mi. NW. of, 300 ft. N. of rd. forks, 6 ft. W. of rd.; top of rock.....	2, 803. 43
Twin Mills, 0.6 mi. N. of, on W. side of gate across rd., in base of large post; spike.....	2, 742. 36

From Marathon quadrangle southeast along road by way of Kincaid Spring into Dove Mountain quadrangle at point near Kincaid Creek (by D. S. Birkett in 1917)

Gage Indian Creek ranch house (old Francis Smith place), about 19 mi. SE. of Marathon, near head of Indian Creek, 70 ft. S. of windmill, at fence line; iron post stamped "3716 1917".....	3, 716. 415
Gage Indian Creek ranch house and windmill, 1.3 mi. S. of, 200 ft. W. of rd., at east end of long, conspicuous, wall-like outcrop; top of rock.....	3, 793. 69
Gage Indian Creek ranch house, 3.9 mi. SE. of, 1.4 mi. NW. of Kincaid Spring (tinaja), 0.5 mi. E. of windmill, at fork of rds.; iron post stamped "3849 1917".....	3, 849. 951
Kincaid Spring, 0.4 mi. NW. of, about 1.3 mi. SE. of windmill, on high ridge, 4 ft. W. of rd.; top of rock.....	3, 867. 23
Kincaid Spring, 0.6 mi. SE. of, at point where rd. crosses dry bed of Kincaid Creek, 30 ft. W. of rd., 20 ft. S. of creek, on large limestone boulder; standard tablet stamped "3714 1917".....	3, 714. 220
Kincaid Spring, 3.1 mi. SE. of, 7 ft. S. of rd.; top of rock.....	3, 512. 84
Kincaid Spring, 4.2 mi. SE. of, at rd. fords, 200 ft. S. of point where rd. crosses Kincaid Creek, 250 ft. N. of point where rd. to old wax plant passes through pasture gate in rd. forks, 15 ft. W. of rd. leading down to Kincaid Creek; iron post stamped "3458 1917".....	3, 458. 940

From road forks 4.2 miles southeast of Kincaid Spring south and southwest along roads into Bone Spring quadrangle at point about 2 miles northeast of old wax plant (by D. S. Birkett in 1917)

Kincaid Spring, 5.7 mi. SE. of, 1.5 mi. S. of Kincaid Creek, about 100 ft. S. of summit in dim rd., in middle of rd.; top of boulder.....	3, 628. 92
Kincaid Spring, 6.8 mi. SE. of, on rd. to old wax plant and Twin Mills, 20 ft. W. of rd.; top of rock.....	3, 475. 16

Kincaid Spring, 7.5 mi. SE. of, 1.7 mi. S. of rd. summit, on rd. to old wax plant and Twin Mills, 0.2 mi. S. of fork in rds., 40 ft. W. of rd., on edge of ravine, on large limestone boulder; aluminum tablet stamped "3328 1917"-----	Feet 3, 328. 272
Kincaid Spring, 8.7 mi. SE. of, on rd. to old wax plant and Twin Mills, 2.9 mi. S. of rd. summit, 500 ft. N. of old gasoline engine, at rd. forks, at point where rd. crosses dry creek bed, on S. side of creek, on W. side of rd., at large limestone outcrop; top of rock-----	3, 196. 13
Kincaid Spring, 9.9 mi. SE. of, on rd. to old wax plant and Twin Mills, 4.1 mi. S. of rd. summit, 0.9 mi. S. of old gasoline engine, 100 ft. S. of dim rd. forks, 8 ft. W. of route rd.; top of rock outcrop-----	3, 149. 48
Kincaid Spring, 11.3 mi. SE. of, 6.5 mi. S. of rd. summit, on rd. to old wax plant and Twin Mills, 2.3 mi. S. of old gasoline engine, about 1 mi. N. of small black butte, 40 ft. W. of rd.; top of large boulder-----	3, 056. 80
Kincaid Spring 12.2 mi. SE. of, on rd. to old wax plant and Twin Mills, 14.5 mi. NE. of Persimmon Gap, 11.5 mi. NE. of old wax plant, about 0.5 mi. NE. of small black butte, 2.6 mi. NE. of fence corner, in rd. forks; iron post stamped "2962 1917"-----	2, 962. 631
Old wax plant, 10.3 mi. NE. of, on rd. to Kincaid Spring, about 0.2 mi. S. of small black butte, on N. side of rd.; top of rock-----	2, 880. 76
Old wax plant, 8.4 mi. NE. of, about 12 mi. NE. of Persimmon Gap, 1.5 mi. SW. of small black butte, at junction of Boquillas-Sanderson rd. and rd. to Kincaid Spring, at fence corner of Ford's pasture, on limestone rock; aluminum tablet stamped "2783 B. M. 1917"-----	2, 783. 652
Old wax plant, 2.4 mi. NE. of, 7 mi. NE. of Persimmon Gap, on E. side of dirt tank, about 150 ft. N. of dam, 25 ft. W. of rd. to Kincaid Spring; iron post stamped "2756 1917"-----	2, 756. 618

#### HOVEY QUADRANGLE

[Latitude 30°30'-31°; longitude 103°-103°30']

#### BREWSTER, DAVIS, PECOS, AND REEVES COUNTIES

At junction of Alpine-Fort Stockton road and road to Stroud ranch house—a jog from Altuda quadrangle (by F. L. Shalibo in 1919)

Stroud ranch house, 1.9 mi. NW. of, 18.5 mi. NE. of Alpine, on Fort Stockton rd., 10 ft. NE. of gate; iron post stamped "3883 1919"-----	Feet 3, 883. 454
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#### JORDAN GAP QUADRANGLE

[Latitude 29°45'-30°; longitude 103°45'-104°]

#### BREWSTER AND PRESIDIO COUNTIES

From Cienega quadrangle northeast and southeast along trail and roads near Jordan Gap, Paradise Draw, and Terlingua Creek into Buck Hill quadrangle (by D. S. Birkett in 1917)

Penitas ranch house, 2.8 mi. NE. of, 0.8 mi. W. of Jordan Gap rd., on lateral ridge; top of rock-----	Feet 4, 139. 78
Penitas ranch house, 3.5 mi. E. of, 3.6 mi. NW. of Jordan Gap, 0.2 mi. W. of Jordan Gap rd. and fence line, on point between forks of draw, near cairn, in conglomerate outcrop; standard tablet stamped "4146 1917"-----	4, 146. 544
Jordan Gap, 2.9 mi. NW. of, 20 ft. NE. of rd.; top of rock-----	4, 196. 24
Jordan Gap, 1.8 mi. W. of, 0.4 mi. N. of Crosson windmill, 80 ft. W. of rd.; top of rock-----	4, 288. 97
Jordan Gap, 1.2 mi. W. of, in concrete base of Crosson windmill; aluminum tablet stamped "4279 1917"-----	4, 279. 696

Jordan Gap, on summit of, 150 ft. N. of rd., in lava boulder; aluminum tablet stamped "4424 1917"-----	<i>Feet</i> 4, 423. 891
Jordan Gap, 1.2 mi. E. of, 6 ft. N. of rd.; top of large boulder-----	4, 290. 81
Jordan Gap, 2.1 mi. SE. of, 0.9 mi. W. of roundup corral, 125 ft. S. of rd.; top of boulder-----	4, 224. 28
Jordan Gap, 3.1 mi. SE. of, about 1,000 ft. S. of abandoned earth tank, 600 ft. SE. of roundup corral, 140 ft. S. of rd., in large lava boulder; aluminum tablet stamped "4184 1917"-----	4, 184. 629
Jordan Gap, 4.1 mi. SE. of, almost opposite windmill, on S. side of rd.; top of boulder-----	4, 125. 81
Jordan Gap, 6.2 mi. SE. of, 8.4 mi. NW. of O 2 Ranch House, 10 ft. E. of W. one of double windmill; iron post stamped "4038 1917"-----	4, 037. 989
O 2 ranch house, 6.9 mi. NW. of, 0.8 mi. by rd. NW. of Presidio-Brewster county line, about midway between double and lone windmills, 6 ft. S. of rd.; top of rock-----	3, 995. 30
O 2 ranch house, 6.0 mi. NW. of, 2.1 mi. E. of double windmill, 0.9 mi. W. of lone windmill, 0.2 mi. by rd. SE. of Brewster-Presidio county line, 5 ft. N. of rd.; top of rock-----	3, 965. 05
O 2 ranch house, 5.1 mi. NW. of, 30 ft. S. of Jordan Gap rd., 50 ft. NE. of windmill, at fence corner; iron post stamped "3936 1917"-----	3, 936. 180
O 2 ranch house, 3.2 mi. NW. of, 150 ft. S. of Jordan Gap rd., at little summit between outer and inner valleys, in solid rock; aluminum tablet stamped "3913 1917"-----	3, 913. 812

From Buck Hill quadrangle along trail and road generally west to Puerto Potrillo, thence west along road and across country into Cienega quadrangle (by D. S. Birkett in 1917)

Wilson ranch house, 3.4 mi. NW. of, 1.2 mi. by rd. SE. of Presidio-Brewster county line, 0.5 mi. W. of earth tank, at fence corner, on N. side of rd.; iron post stamped "1917 17"-----	3, 721. 303
Wilson ranch house, 4.9 mi. NW. of, 0.3 mi. W. of Presidio-Brewster county line, 60 ft. S. of rd.; top of boulder-----	3, 738. 37
Wilson ranch house, 5.6 mi. NW. of, 5.8 mi. E. of Puerto Potrillo (Colt Gap), 8 ft. N. of rd.; top of boulder-----	3, 735. 49
Puerto Potrillo (Colt Gap), 4.9 mi. E. of, 1.1 mi. E. of fence, 6.0 mi. W. of Wilson ranch house, 3.5 ft. N. of rd., on large lava boulder; aluminum tablet stamped "1917 18"-----	3, 768. 141
Puerto Potrillo, 3.8 mi. E. of, 2.5 mi. E. of windmill, 350 ft. E. of fence, 30 ft. N. of rd., near rd. forks; top of boulder-----	3, 818. 79
Puerto Potrillo, 1.9 mi. E. of, 0.6 mi. NE. of windmill, 12 ft. N. of rd.; top of boulder-----	3, 902. 57
Puerto Potrillo, 1.5 mi. SE. of, 0.2 mi. S. of rd., on trail, 100 ft. N. of David Weas windmill, in concrete water trough; aluminum tablet stamped "1917 19"-----	3, 927. 704
Puerto Potrillo, at summit of, 8 ft. N. of rd., in lava outcrop; standard tablet stamped "1917 20"-----	4, 138. 748
Puerto Potrillo, 1.2 mi. W. of, 1.6 mi. E. of double windmill, 10 ft. S. of rd.; top of rock-----	4, 030. 07
Puerto Potrillo, 2.3 mi. W. of, 0.5 mi. E. of double windmill, 12 ft. N. of rd.; top of rock-----	3, 935. 97
Puerto Potrillo, 2.8 mi. W. of, at crossing of trail and rd., at double windmill, on S. end of concrete water trough; aluminum tablet stamped "1917 21"-----	3, 904. 419
Puerto Potrillo, 3.8 mi. NW. of, 6.5 mi. by route SE. of Alamito, 1.0 mi. W. of double windmills, on S. side of old rd.; top of rock-----	3, 853. 65

## LAJITAS QUADRANGLE

[Latitude 29°15'-29°30'; longitude 103°45'-104°]

## BREWSTER AND PRESIDIO COUNTIES

From Tascotal Mesa quadrangle south and southeast along road to Terlingua  
into Chisos Mine quadrangle (by M. S. Bright in 1901 and 1902)

Mouth of Arroyo Segundo, 7.4 mi. N. of, about 2 mi. N. of Post Mountain, on spur of ridge, 75 ft. E. of draw, 14 ft. E. of rd.; iron post stamped "4262 Marfa"-----	Feet 4, 265. 810
Mouth of Arroyo Segundo, 4.2 mi. N. of, about 1 mi. S. of Post Mountain, 20 ft. E. of canyon, 2 ft. W. of rd., in limestone outcrop; standard tablet stamped "3808 Marfa"-----	3, 811. 547
Mouth of Arroyo Segundo, 0.5 mi. N. of, about 1 mi. N. of Rincon Mountain, in Fresno Canyon, at junction of trail to Howard ranch house, on W. side of rd., in large limestone outcrop; standard tablet stamped "3402 Marfa"-----	3, 405. 570
Rincon Mountain, about 2.5 mi. S. of, 0.8 mi. NW. of Arroyo Primero, on spur of ridge, 500 ft. W. of canyon, 20 ft. W. of rd.; iron post stamped "3119 Marfa"-----	3, 122. 726
Mouth of Arroyo Primero, 2.6 mi. SE. of, 500 ft. E. of canyon, at summit of small sharp ridge, near point where main rd. to Terlingua crosses and leaves Fresno Creek, 75 ft. W. of rd. forks; iron post stamped "2789 Marfa"-----	2, 792. 513
Fresno Creek, about 3.6 mi. along rd. to Terlingua SE. of, about 13 mi. W. of Terlingua, 0.2 mi. W. of Presidio-Brewster county line, at summit of sharp ridge, 60 ft. W. of rd. forks, on S. side of rd.; iron post stamped "2662 Marfa"-----	2, 665. 555

## McKINNEY SPRING QUADRANGLE

[Latitude 29°15'-29°30'; longitude 103°-103°15']

## BREWSTER COUNTY

From Paint Gap quadrangle northeast along roads by way of Avary Canyon  
and Stroud's mail box into Bone Spring quadrangle (by Chester Irvine in 1903)

Neville Spring, 0.4 mi. W. of, at rd. forks, on E. side of drain; iron post stamped "3293 Marfa 1903"-----	Feet 3, 296. 221
Neville Spring, 2.6 mi. NE. of, on end of ridge, 40 ft. S. of rd., on S. bank of creek, 600 ft. E. of where rd. leaves creek bed; standard tablet stamped "2968 Marfa"-----	2, 970. 862
Neville Spring, 5.8 mi. NE. of, 20 ft. W. of rd., at summit of low ridge bearing E.-W., 600 ft. S. of pasture gate; iron post stamped "2814 Marfa 1903"-----	2, 816. 891
Neville Spring, 8.5 mi. NE. of, at junction of Neville Spring-Marathon, and Boquillas-Marathon rds.; iron post stamped "2828 Marfa 1903"-----	2, 831. 096

From Stroud's mail box southeast along wagon road into Chilicotal quadrangle (by Chester Irvine in 1903)

Stroud's mail box, 4.5 mi. S. of, about 3.0 mi. NW. of Stillwell ranch house, 1.5 mi. N. of old goat ranch, in group of small hills, 30 ft. W. of rd.; standard tablet stamped "2744 Marfa 1903"-----	2, 747. 136
Stillwell ranch house (McKinney Well), 0.2 mi. N. of, 10 ft. N. of rd.; iron post stamped "2947 Marfa 1903"-----	2, 949. 975

Stillwell ranch house, 2.5 mi. SE. of, at E. foot of Roys Peak, on N. side of rd., in cut for roadway, on end of bridge; standard tablet stamped "2994 Marfa 1903"-----	Feet 2, 996. 895
Stillwell ranch house, 5.5 mi. SE. of, 6.1 mi. N. of Boquillas, 700 ft. S. of point where rd. leaves creek after crossing it, 10 ft. S. of rd., in small saddle; iron post stamped "2732 Marfa 1903"-----	2, 735. 114
Boquillas, 3.0 mi. N. of, in ridge where rd. leaves creek, 8 ft. W. of rd.; standard tablet stamped "2469 Marfa 1903"-----	2, 472. 184

## MARATHON QUADRANGLE

[Latitude 30°-30°15'; longitude 103°-103°15']

## BREWSTER AND PECOS COUNTIES

From Marathon south and southeast along roads into Hood Spring quadrangle at point near Gage Indian Creek ranch house (by D. S. Birkett in 1917)

U. S. C. & G. S. B. M. designated "Z 25"-----	Feet 4, 044. 674
Marathon, 1.9 mi. S. of, at junction of Marathon-Boquillas and Marathon-Terlingua rds., on W. side of Marathon-Boquillas rd., at fence corner; iron post stamped "4014 1917"-----	4, 013. 948
Marathon, 4.5 mi. S. of, on E. side of Marathon-Boquillas rd., 0.6 mi. S. of old prospect hole, at angle in rd.; iron post stamped "4014 1917"-----	4, 014. 813
Marathon, 7.0 mi. S. of, at junction of Marathon-Boquillas rd. and rd. to Gage Indian Creek ranch house and Kincaid Spring, 15 ft. E. of gate, in fence corner; iron post stamped "3905 1917"-----	3, 905. 399
Marathon, 8.4 mi. SE. of, on rd. to Gage Indian Creek ranch house and Kincaid Spring at point 1.4 mi. SE. of its junction with Marathon-Boquillas rd., 20 ft. S. of rd.; top of rock-----	3, 841. 53
Marathon, 9.5 mi. SE. of, on rd. to Gage Indian Creek ranch house and Kincaid Spring at point 2.5 mi. SE. of its junction with Marathon-Boquillas rd., 10.2 mi. NW. of Gage Indian Creek ranch house, 225 ft. E. of old earth dam across dry creek bed, on S. side of creek; top of rock-----	3, 774. 26
Gage Indian Creek ranch house, 8.8 mi. NW. of, 3.9 mi. SE. of junction of rd. to this ranch house with Marathon-Boquillas rd. and at its junction with dim rd. to Dagger Flat windmill, on dim. rd.; iron post stamped "3742 1917"-----	3, 742. 456
Gage Indian Creek ranch house, 4.9 mi. NW. of, about 1 mi. NW. of Hackberry windmill, 0.6 mi. SE. of junction of rd. S. to Gage's burnt ranch house with rd. to Gage Indian Creek ranch house (route rd.), 70 ft. W. of latter rd.; top of rock-----	3, 715. 24
Gage Indian Creek ranch house, 4.0 mi. NW. of, about 0.5 mi. NE. of Hackberry windmill, 130 ft. S. of group of Hackberry trees along dry creek bed, 30 ft. W. of rd.; iron post stamped "3708 1917"-----	3, 708. 427
Gage Indian Creek ranch house, 2.9 mi. NW. of, about 1.5 mi. E. of Hackberry windmill, at summit in rd.; top of rock-----	3, 860. 36

From Marathon northeast along Marathon-Fort Stockton road into Hess Canyon quadrangle (by James Dod and S. R. Archer in 1919)

Marathon, 1.0 mi. N. of, on rd. to Fort Stockton, 40 ft. NW. of fence corner, 15 ft. E. of center line of rd.; top of rock-----	4, 119. 40
Marathon, 2.1 mi. N. of, 150 ft. S. of gate, 30 ft. E. of rd., on rock; chisel cut-----	4, 173. 51

Marathon, 2.7 mi. NE. of, at junction of rd. to Fort Stockton with rd. to Hess ranch house, 3 ft. from W. fence line; iron post stamped "4202 1919"-----	Feet 4, 201. 541
Marathon, 3.6 mi. NE. of, 1.0 mi. NE. of junction of Fort Stockton rd. with rd. to Hess ranch house, 8 ft. E. of Fort Stockton rd., on top of rock; chisel cut-----	4, 184. 63

## MONUMENT SPRING QUADRANGLE

[Latitude 30°-30°15'; longitude 103°15'-103°30']

## BREWSTER COUNTY

From Santiago Peak quadrangle northeast along Terlingua-Marathon road to its intersection with east-west road, thence east and southeast along latter road to Combs Headquarters ranch (by D. S. Birkett in 1917)

Del Norte Gap (Paso del Norte), 2.6 mi. NE. of, 6.5 mi. W. of Combs Headquarters ranch, 1.6 mi. W. of abandoned house, 40 ft. S. of rd.; top of rock-----	Feet 4, 086. 90
Del Norte Gap, 3.7 mi. NE. of, 5.4 mi. W. of Combs Headquarters ranch, about 0.7 mi. SW. of old house on Wilson place, 70 ft. S. of Terlingua-Marathon rd., in telephone line; iron post stamped "3931 1917"-----	3, 931. 426
Combs Headquarters ranch, 3.3 mi. NW. of, 30 ft. S. of rd., alongside rock chiseled "NW. 69"; top of rock-----	3, 743. 59
Combs Headquarters ranch, 2.4 mi. NW. of, 40 ft. N. of rd., alongside small cairn; top of rock-----	3, 670. 64
Combs Headquarters ranch, 1.0 mi. NW. of, 80 ft. W. of gate near rd. forks, at fence corner; iron post stamped "3569 1917"-----	3, 569. 884

From road forks at Combs Headquarters ranch northwest and northeast along road to its junction with Terlingua-Marathon road, thence northeast along latter road into Marathon quadrangle (by D. S. Birkett in 1917)

Combs Headquarters ranch, 2.2 mi. NW. of, 3.8 mi. SW. of junction of rd. from these headquarters with Terlingua-Marathon rd., 0.7 mi. S. of crossing of Maravillas Creek, on small summit, 30 ft. E. of rd.; top of rock-----	3, 645. 72
Combs Headquarters ranch, 3.3 mi. NW. of, 2.7 mi. SW. of junction of rd. from these headquarters with Terlingua-Marathon rd., 0.4 mi. N. of crossing of Maravillas Creek, on small summit in rd., 110 ft. E. of rd.; top of rock-----	3, 651. 16
Combs Headquarters ranch, 6.1 mi. by rd. N. of, 11.5 mi. SW. of Marathon, on Terlingua-Marathon rd. at point 700 ft. NE. of its junction with rd. from Combs Headquarters ranch, 60 ft. E. of gate across rd., at fence line; iron post stamped "3773 1917"-----	3, 773. 88
Marathon, 7.8 mi. SW. of, 3.2 mi. SW. of old Fort Peña Colorada, on old Terlingua-Marathon rd., 0.2 mi. SE. of present rd., at low summit on old rd. and 15 ft. N. of old rd.; iron post stamped "3841 1917"-----	3, 841. 762
Marathon, 6.8 mi. SW. of, 2.2 mi. SW. of old Fort Peña Colorada, on Terlingua-Marathon rd., at point where telephone line crosses rd., on E. side of rd.; top of rock-----	3, 867. 82
Marathon, 4.9 mi. SW. of, on Terlingua-Marathon rd., on S. side of rd., at E. end of steel bridge over Peña Colorada Creek, in concrete abutment; aluminum tablet stamped "3889 1917"-----	3, 889. 459

From crossroads on Terlingua-Marathon road 3.7 mi. northeast of Del Norte Gap northwest across country and road to forks at mouth of Doubtful Canyon, thence northeast along rd. and across country to point on Southern Pacific Railroad 2.5 miles southeast of Lenox (by James Dod in 1919; permanent benchmarks set by R. C. Seitz)

Del Norte Gap, 3.7 mi. NE., thence 1.5 mi. NW. from, 15 ft. E. of small dry wash, on rock; chisel cut-----	<i>Feet</i> 3, 871. 56
Del Norte Gap, 3.7 mi. NE., thence 2.5 mi. NW. from, on S. slope of drain, on rock; chisel cut-----	3, 795. 60
Del Norte Gap, 3.7 mi. NE., thence 3.4 mi. NW. from, on Gage ranch (leased from Jim Anderson), 90 ft. SW. of small cabin, 40 ft. N. of windmill; iron post stamped "3854 1919"-----	3, 853. 582
Del Norte Gap, 3.7 mi. NE., thence 4.2 mi. NW. from, 30 ft. W. of fence, on N. side of draw; top of rock-----	3, 918. 00
Doubtful Canyon, at mouth of, 3.7 mi. NE., thence 6.5 mi. NW. from Del Norte Gap, 200 ft. NE. of rocky point, 200 ft. N. of stream bed; iron post stamped "4025 1919"-----	4, 025. 092
Doubtful Canyon, 1.2 mi. NE. of mouth, on N. side of small ridge near saddle, 65 ft. W. of rd., on rock; chisel cut-----	4, 025. 45
Doubtful Canyon, 2.1 mi. NE. of mouth, at top of flat raise, 15 ft. E. of rd., on rock; chisel cut-----	3, 972. 57
Doubtful Canyon, 3.3 mi. NE. of mouth, 25 ft. W. of rd.; iron post stamped "3981 1919"-----	3, 980. 844
Doubtful Canyon, 4.4 mi. NE. of mouth, near rd. forks, 50 ft. W. of rd., in root of mesquite bush; copper nail-----	3, 996. 68
Doubtful Canyon, 5.7 mi. NE. of mouth, 70 ft. W. of rd., 35 ft. NW. of short palmetto, on S. slope of hill, on rock; chisel cut-----	4, 072. 02
Doubtful Canyon, 6.8 mi. NE. of mouth, 150 ft. W. of Maravillas Creek, 25 ft. W. of rd.; iron post stamped "4037 1919"-----	4, 036. 789
Doubtful Canyon, 9.3 mi. NE. of mouth, 8.5 mi. SW. of Marathon, about 90 ft. E. of rd., on upturned rock in center of dry wash; chisel cut-----	4, 140. 31
Marathon, 8.0 mi. W. of, 2.6 mi. by rd. SE. of Lenox, on S. side of Marathon-Alpine rd., 25 ft. E. of fence corner; iron post stamped "4191 1919"-----	4, 190. 445

## NINE POINT MESA QUADRANGLE

[Latitude 29°30'-29°45'; longitude 103°15'-103°30']

## BREWSTER COUNTY

From Agua Fria quadrangle southeast and northeast along roads into Bone Spring quadrangle (by R. R. Monbeck in 1917; releveled by D. S. Birkett in the same year)

Bob Henderson ranch house, 9.9 mi. by rd. W. of, 1.8 mi. NW. of double tanks, 5 ft. S. of S. gatepost in pasture fence; iron post-----	<i>Feet</i> 3, 272. 051
Bob Henderson ranch house, 8.8 mi. W. of, 0.5 mi. NW. of corral and tank, 150 ft. W. of rd., on crest of low ridge, at angle of fence, in base of corner post; copper nail-----	3, 281. 94
Bob Henderson ranch house, 8.1 mi. W. of, 500 ft. SE. of earth tank, 50 ft. S. of dim rd. forks, in fold of small catclaw bush; copper nail----	3, 282. 29
Bob Henderson ranch house, 6.9 mi. W. of, 1.3 mi. E. of corral and tank, 1,800 ft. E. of rd. forks, at N. side of rd.; iron post-----	3, 317. 722
Bob Henderson ranch house, 5.9 mi. W. of, 2.3 mi. E. of corral and tank, 30 ft. N. of rd., in base of mesquite bush; copper nail-----	3, 362. 54



Bob Henderson ranch house, 4.9 mi. SW. of, 0.7 mi. W. of pass in low ridge, on E. bank of small drain, 15 ft. S. of rd., in butt of catclaw bush; copper nail.....	Feet 3, 384. 97
Bob Henderson ranch house, 4.2 mi. SW. of, in pass, 75 ft. S. of rd., in rock ledge beside small rock cairn; aluminum tablet.....	3, 463. 327
Bob Henderson ranch house, 3.4 mi. SW. of, 120 ft. SE. of rd. forks, 10 ft. S. of rd., on bank of drain, in base of catclaw bush; copper nail.....	3, 390. 11
Bob Henderson ranch house, 2.3 mi. SW. of, 20 ft. NW. of rd., in base of mesquite bush; copper nail.....	3, 308. 03
Bob Henderson ranch house, 1.0 mi. SW. of, 10 ft. SE. of rd., in base of mesquite bush; copper nail.....	3, 218. 42
Bob Henderson ranch house, 200 ft. NW. of, 40 ft. W. of steel water tank, 6 ft. NW. of mesquite bush, on ledge at foot of rocky bluff; aluminum tablet.....	3, 180. 119
Bob Henderson ranch house, 1.0 mi. E. of, on top of small ridge, 300 ft. NW. of main drain, 20 ft. N. of rd., beside small rock cairn, on top of large boulder; chiseled square.....	3, 103. 39
Bob Henderson ranch house, 2.0 mi. NE. of, at pasture gate, beside N. gatepost; iron post.....	3, 039. 578
Bob Henderson ranch house, 3.6 mi. NE. of, at SE. corner of pasture, 10 ft. N. of rd., on corner post, in knot; copper nail.....	2, 976. 04
Bob Henderson ranch house, 4.9 mi. NE. of, 800 ft. E. of small house on Buttrill ranch, at rd. forks, 25 ft. S. of rd., in butt of small mesquite bush; copper nail.....	2, 945. 76
Buttrill ranch house, 2.0 mi. NW. of western headquarters, 800 ft. E. of small house at rd. forks, 4 ft. S. of rd.; iron post stamped "2947" ..	2, 946. 609
Adobe House, 4.1 mi. W. of, about 3.3 mi. by rd. N. of western headquarters of Buttrill ranch, 300 ft. SE. of rd. forks, on N. bank of creek, in base of S. gatepost; copper nail.....	2, 906. 68
Adobe House, 3.2 mi. W. of, 2.5 mi. NE. of Buttrill ranch house, 20 ft. N. of rd., in base of mesquite bush; copper nail.....	2, 884. 41
Adobe House, 2.2 mi. W. of, at end of rocky point, 20 ft. N. of rd., in top of flinty ledge; aluminum tablet.....	2, 849. 881

From Bone Spring quadrangle northwest along road near Chalk Draw into  
Santiago Peak quadrangle (by R. R. Monbeck in 1917)

Adobe House, 2.0 mi. NW. of, 1,400 ft. NW. of earth tank, 50 ft. E. of rd., on limb of large catclaw bush; copper nail.....	2, 823. 56
Adobe House, 3.0 mi. NW. of, 1.2 mi. NW. of earth tank, 500 ft. SE. of small drain crossing, at W. side of rd.; iron post.....	2, 884. 542
Adobe House, 4.1 mi. NW. of, 1,500 ft. N. of rock outcrop, 25 ft. W. of rd., in trunk of mesquite bush; copper nail.....	2, 924. 02
Adobe House, 5.0 mi. NW. of, 1,750 ft. SE. of corral, 30 ft. W. of rd., in trunk of lone mesquite bush; copper nail.....	2, 960. 87
Adobe House, 6.0 mi. NW. of, 700 ft. N. of earth tank, 25 ft. W. of rd., in trunk of mesquite bush; copper nail.....	2, 981. 83
Adobe House, 6.8 mi. NW. of, 3.8 mi. SE. of Rixon ranch house, 0.6 mi. NW. of white gravel hill, 10 ft. E. of rd. off N. end of gravel bank; iron post.....	3, 019. 54
Rixon ranch house, 1.5 mi. SE. of, at pasture gate, beside E. gatepost; iron post.....	3, 122. 883
Rixon ranch house, 1.3 mi. NW. of, at S. edge of flat, 6 ft. E. of rd. near foot of gravel slope; iron post.....	3, 240. 739

Rixon ranch house, 2.2 mi. NW. of, 80 ft. E. of rd. forks, in butt of small mesquite bush; copper nail.....	<i>Feet</i> 3, 275. 73
Rixon ranch house, 3.2 mi. NW. of, 3.7 mi. SE. of Schuler ranch house, at pasture gate, in base of W. gatepost; copper nail.....	3, 298. 28
Schuler ranch house, 2.9 mi. SE. of, 25 ft. E. of rd., in base of lone catclaw bush; copper nail.....	3, 331. 27

## ORLA QUADRANGLE

[Latitude 31°45'-32°; longitude 103°45'-104°]

## LOVING AND REEVES COUNTIES

From Orla northeast along roads 4.2 miles, thence north to Texas-New Mexico State line, thence west to Atchison, Topeka & Santa Fe Railway (by H. P. Kilby in 1925) <sup>7</sup>

U. S. C. & G. S. B. M. designated "M 21".....	<i>Feet</i> 2, 860. 604
Orla, 0.9 mi. N. thence 1.2 mi. E. from, 1.3 mi. E. of school, 41 ft. W. of rd. and fence; iron post stamped "Y 6 K 6 1925".....	2, 813. 204
Orla, 4.2 mi. NE. of, at Mack Camp ranch, in fence corner at NW. corner of yard; iron post stamped "Sta. 211, Y 7 K 7".....	2, 760. 666
Orla, 4.2 mi. NE. thence 2.4 mi. N. from, 1,130 ft. S. of Taylor cabin, 900 ft. SE. of S. bank of Pecos River, near proposed dam site, 11.5 ft. W. of W. gatepost; iron post stamped "Y 8 K 8 1925".....	2, 770. 830
Pecos River, surface of water January 8, 1925.....	2, 743. 7
Pecos River, highwater mark on third bench; hub.....	2, 761. 62
Orla, 4.2 mi. NE. thence 3.5 mi. N. from, 2.0 mi. E. of Olds ranch house, 1.0 mi. N. 62°55' W. of Taylor cabin, on N. side of Pecos River, on top of ridge; iron post stamped "Y 9 K 9 1925".....	2, 809. 495
Reference mark, 100 ft. S. of post; top of bolt flush with ground....	2, 804. 71
Orla, 4.2 mi. NE., thence 4.9 mi. N. from, 10 ft. E. of sta. 224, on top of ledge rock on mesa; chiseled square.....	2, 889. 73
Orla, 4.2 mi. NE., thence 6.2 mi. N. from, top of rock.....	2, 873. 46
Orla, 4.2 mi. NE., thence 7.4 mi. N. from, 6.0 mi. N. 72° E. of Angeles, 5.5 mi. N. of Olds ranch house, on NE. corner of U-shaped earthen dam; iron post stamped "Y 10 K 10 1925".....	2, 881. 326
Angeles, 7.5 mi. NE. of, 2.0 mi. NW. of Collier and Love twin wind-mills, 1.1 mi. S. of Tex.-N. Mex. State line; iron post stamped "Y 11 K 11 1925".....	2, 923. 951
Angeles, 8.5 mi. NE. of, 9.1 mi. E. of R. R., at Tex.-N. Mex. line, in rock pile at old fence corner; top of bolt.....	2, 980. 52
Tex.-N. Mex. boundary survey milepost 48; <sup>8</sup> U. S. Boundary Commission iron post.....	2, 968. 312
Tex.-N. Mex. boundary survey milepost 49; U. S. Boundary Commission iron post.....	2, 919. 080
Tex.-N. Mex. boundary survey milepost 50; U. S. Boundary Commission iron post.....	2, 904. 712

<sup>7</sup> The first 8 miles of this line and 7 miles along the State line were leveled twice, and an error of 0.73 foot has been adjusted in the mean line.

<sup>8</sup> The mileposts set along the Texas-New Mexico boundary by the U. S. Boundary Commission are of the same type as the iron posts set as benchmarks by the U. S. Geological Survey and are stamped "U. S. Boundary Commission." The boundary is here slightly north of latitude 32°, in No. 8 (Tex.-N. Mex.) quadrangle, but these boundary elevations for monuments 25 and 26 and mileposts 44-53 are included here for convenience.

Tex.-N. Mex. boundary survey milepost 51; U. S. Boundary Commission iron post.....	<i>Feet</i> 2, 861. 350
Tex.-N. Mex. boundary survey milepost 52; U. S. Boundary Commission iron post.....	2, 859. 558
Tex.-N. Mex. boundary survey milepost 53; U. S. Boundary Commission iron post.....	2, 886. 084
U. S. C. & G. S. triangulation mark No. 53 E.....	2, 941. 436
Monument 25 (U. S. Boundary Commission concrete post), on W. bank of Pecos River; brass plate.....	2, 839. 956

From point 6.6 miles northeast of Orla along highways northeast to Texas-New Mexico State line, thence west to point 9.1 miles east of Atchison, Topeka & Santa Fe Railway (by H. P. Kilby in 1925)

Orla, 6.8 mi. NE. of, 100 ft. N. of Taylor cabin, on S. bank of Pecos River; top of 7-in. galvanized pipe.....	2, 756. 43
Orla, 9.0 mi. NE. of, on top of rock ledge on hill; chiseled square.....	2, 899. 96
Orla, 10.1 mi. NE. of, 1.5 mi. NE. of Taylor cabin, 1.0 mi. NE. of canal in river bottom, at head of flat draw; iron post stamped "Y 12 K 12 1925".....	2, 840. 115
Orla, 12.1 mi. NE. of, 3.5 mi. NE. of Taylor cabin, 1,340 ft. NE. of tall gatepost, on ridge at three-way fence corner, 3 ft. NW. of fence corner; iron post stamped "Y 13 K 13 1925".....	2, 929. 696
Orla, 14.8 mi. NE. of, on fence line between Kyle-Collier and Love pastures, 58 ft. S. of T-fence E., 65 ft. N. of N. fence post, 2.5 ft. W. of N.-S. fence; iron post stamped "Y 14 K 14 1925".....	2, 988. 008
Tex.-N. Mex. State line, near, at fence corner; nail in corner post at primary traverse sta. 301.....	3, 097. 54
Tex.-N. Mex. boundary survey milepost 44; U. S. Boundary Commission iron post.....	3, 084. 043
Tex.-N. Mex. boundary survey milepost 45; U. S. Boundary Commission iron post.....	3, 028. 737
Monument 26 (U. S. Boundary Commission concrete post); brass plate.....	3, 029. 390
Tex.-N. Mex. boundary survey milepost 46; U. S. Boundary Commission iron post.....	2, 992. 797
Tex.-N. Mex. boundary survey milepost 47; U. S. Boundary Commission iron post.....	2, 982. 665

From Delaware Creek quadrangle 7.8 miles northwest of Orla southeast along highways to Orla (by H. P. Kilby in 1925; leveled twice)

Orla, 6.6 mi. NW. of, 45 ft. S. of rd., on top of bare knoll, about 1,000 ft. W. of fence line, on top of flat rock; chiseled square.....	2, 894. 27
Orla, 5.9 mi. NW. of, on NW. bank of Screwbeam Creek, 750 ft. from stream, in sharp angle of cut-off rd. fork; stamped "Prim. Trav. Sta. Y 5 K 5 1925".....	2, 864. 488
Reference mark, 16 ft. W. of tablet and flush with ground; top of bolt.....	2, 865. 49
Screwbeam Creek; surface of water February 3, 1925.....	2, 842. 8
Orla, 5.1 mi. NW. of, at fence corner, 3 ft. S. of corner post; top of 3-in. galvanized iron pipe.....	2, 900. 779
Orla, 4.0 mi. NW. of, 10 ft. N. of rd.; top of 2-in. iron pipe.....	2, 905. 063

Orla, 3.0 mi. NW. of, at rd. forks, 6 ft. N. of point of Y, 3 ft. E. of fence post, top of flat rock, buried flush with ground; chiseled square-----	<i>Feet</i> 2, 881. 90
Orla, 1.6 mi. NW. of, on Atchison, Topeka & Santa Fe Ry., in concrete post; disk (reset broken U. S. C. & G. S. B. M. designated "L 21") <sup>o</sup> -----	2, 868. 47

## PAINT GAP QUADRANGLE

[Latitude 29°-29°30'; longitude 103°103'-30']

## BREWSTER COUNTY

From Chisos Mine quadrangle northeast and southeast along roads into Emory Peak quadrangle (by M. S. Bright in 1903)

Joe Black Spring, 3.2 mi. E. of, 100 ft. SE. of rd. and 50 ft. SW. of Creek, at foot of round hill; iron post stamped "2745 Marfa"-----	<i>Feet</i> 2, 748. 897
Joe Black Spring, 6.2 mi. NE. of, 40 ft. N. of rd., in volcanic rock; aluminum tablet stamped "2901 Marfa"-----	2, 904. 844
Gano Spring, 3.8 mi. NW. of, 9.3 mi. NE. of Joe Black Spring, 40 ft. S. of rd., in sandstone outcrop; aluminum tablet stamped "3134 Marfa"-----	3, 137. 752
Gano Spring, 2,000 ft. E. of rd. forks, 100 ft. N. of spring, on N. side of draw; iron post stamped "3492 Marfa"-----	3, 495. 914
Rock Hut, 1.8 mi. S. of, on flat ridge, 25 ft. E. of rd., in sandstone outcrop; aluminum tablet stamped "3731 Marfa"-----	3, 735. 010

From Gano Spring northeast and east along roads by way of Paint Gap into McKinney Spring quadrangle (by Chester Irvine in 1903)

Gano Spring, 5.0 mi. NE. of, 300 ft. E. of creek, on ridge, 5 ft. W. of rd.; iron post stamped "3504 Marfa 1903"-----	3, 507. 805
Gano Spring, 8.0 mi. NE. of, 7.3 mi. by rd. W. of Neville Spring, 5 ft. S. of rd. and about 0.5 mi. SW. of red ridge; iron post stamped "3523 Marfa 1903"-----	3, 526. 449
Neville Spring, 4.3 mi. NW. of, at Paint Gap crossroads; iron post stamped "3387 Marfa 1903"-----	3, 390. 130

## SAN ESTEBAN DAM QUADRANGLE

[Latitude 30°-30°15'; longitude 104°-104°15']

## PRESIDIO COUNTY

From Fort D. A. Russell quadrangle south along road east of Rancheria Hills and Frenchman Hills into Cienega quadrangle (by M. S. Bright in 1901)

Marfa, 6.8 mi. S. of, in rd. forks; iron post stamped "4550 Marfa"-----	<i>Feet</i> 4, 553. 068
Marfa, 10.0 mi. S. of, on W. side of rd., at W. gate, by wire fence; iron post stamped "4480 Marfa"-----	4, 483. 068
Marfa, 13.0 mi. S. of, at summit of ridge, on E. side of rd., at fence corner; iron post stamped "4324 Marfa"-----	4, 327. 096
Marfa, 16.2 mi. S. of, on W. side of rd., 5 ft. W. of gatepost; iron post stamped "4261 Marfa"-----	4, 264. 040
Marfa, 19.5 mi. S. of, on W. side of rd., 200 ft. S. of rd. forks; iron post stamped "4198 Marfa"-----	4, 201. 256
Marfa, 21.5 mi. S. of, on W. side of rd., in flat; iron post stamped "4114 Marfa"-----	4, 117. 328

<sup>o</sup> Line was continued from this point to U. S. G. S. B. M. designated "M 21", at Orla.

## SANTIAGO PEAK QUADRANGLE

[Latitude 29°45'-30°; longitude 103°15'-103°30']

## BREWSTER COUNTY

From Nine Point Mesa quadrangle northwest along roads near Chalk Draw and Calamity Creek into Buck Hill quadrangle (by R. R. Monbeck in 1917)

	<i>Feet</i>
Schuler ranch house, 2.2 mi. S. of; saddle.....	3, 398. 1
Schuler ranch house, 1.8 mi. S. of, 0.4 mi. N. of rd. forks, 25 ft. E. of rd. at bend, in top of white rock outcrop; aluminum tablet.....	3, 384. 868
Schuler ranch house, 0.6 mi. N. of, at E. side of Chalk Draw, on foot of rocky slope, at E. side of rd., on top of rock ledge; chiseled square.....	3, 451. 81
Schuler ranch house, 1.8 mi. NW. of, on N. side of Chalk Draw, at pasture gate, 6 ft. S. of S. gatepost; iron post.....	3, 478. 371
Schuler ranch house, 2.2 mi. NW. of, 0.5 mi. N. of rd. forks, 10 ft. W. of rd., in base of small mesquite; copper nail.....	3, 538. 17
Schuler ranch house, 4.6 mi. NW. of, on N. side of Santiago Draw, 30 ft. N. of rd. forks; iron post.....	3, 593. 622
Schuler ranch house, 6.6 mi. NW. of, 0.4 mi. S. of drain crossing, on W. side of rocky point, 60 ft. E. of rd., in heavy rock ledge beside small cairn; aluminum tablet.....	3, 627. 414
Schuler ranch house, 7.7 mi. NW. of, about 1,000 ft. E. of drain crossing, 80 ft. E. of rd. at bend, in base of mesquite bush; copper nail.....	3, 665. 71

From Buck Hill quadrangle northeast along Terlingua-Marathon road into Monument Spring quadrangle (by R. R. Monbeck in 1917)

Del Norte Gap (Paso del Norte), 4.4 mi. SW. of, 60 ft. SW. of crossroads; iron post.....	4, 093. 957
Del Norte Gap, 3.4 mi. SW. of, 1.0 mi. NE. of crossroads, 25 ft. S. of rd.; top of rock.....	4, 126. 20
Del Norte Gap, 2.0 mi. SW. of, 15 ft. S. of rd.; top of large piece of petrified wood.....	4, 259. 91
Del Norte Gap, 0.2 mi. NE. of, 70 ft. N. of rd., at fence corner; iron post stamped "4397 1917".....	4, 397. 500
Del Norte Gap, 1.2 mi. E. of, 50 ft. N. of rd.; top of large boulder.....	4, 248. 44

From Monument Spring quadrangle southeast along roads just east of Maravillas Creek into Hood Spring quadrangle (by D. S. Birkett in 1917)

Combs Headquarters ranch, 2.4 mi. S. of, 2.5 mi. NW. of forks of Combs Headquarters ranch rd. and Marathon-Boquillas rd., in forks of former rd. with dim rd. leading SW. across Maravillas Creek; iron post stamped "3443 1917".....	3, 443. 296
Combs Headquarters ranch, 3.9 mi. SE. of, 40 ft. W. of rd.; top of rock.....	3, 382. 33
Combs Headquarters ranch, 5.2 mi. SE. of, 0.9 mi. N. of Maravillas Gap, at fork of Marathon-Boquillas rd. and rd. NW., alongside mail box; iron post stamped "3342 1917".....	3, 342. 846
Maravillas Gap, 0.6 mi. SE. of, 250 ft. E. of rd., at windmill of G. W. Page, on SW. corner of concrete trough; chiseled square.....	3, 305. 70
Maravillas Gap, 1.6 mi. SE. of, 1.0 mi. S. of windmill, at fence corner, in base of fence post; spike.....	3, 261. 38
Maravillas Gap, 4.3 mi. SE. of, 5 ft. E. of rd.; top of rock.....	3, 158. 99
Maravillas Gap, 4.9 mi. SE. of, 2.6 mi. by direct rd. NW. of Ford ranch house, 100 ft. E. of Marathon-Boquillas rd., on small hill, in limestone outcrop; aluminum tablet stamped "3177 1917".....	3, 177. 693

## TASCOTAL MESA QUADRANGLE

[Latitude 29°30'–29°45'; longitude 103°45'–104°]

## BREWSTER AND PRESIDIO COUNTIES

From Jordan Gap quadrangle southeast along Marfa-Lajitas road into Lajitas quadrangle (by M. S. Bright in 1901)

San Jacinto ranch house, 0.3 mi. N. of, about 11 mi. S. of Alamito (Dysart), 100 ft. N. of windmill, on S. side of rd., at wire fence; iron post stamped "3536 Marfa"-----	<i>Feet</i> 3, 539. 496
San Jacinto ranch house, 3.2 mi. SE. of, 7.3 mi. N. of Wire Gap, on S. side of rd., in mound of stone; iron post stamped "3656 Marfa"-----	3, 659. 446
Wire Gap, 3.5 mi. N. of, on flat ridge, 4 ft. S. of rd., in mound of stone; iron post stamped "4071 Marfa"-----	4, 074. 499
Wire Gap, 0.5 mi. N. of, 40 ft. W. of draw, 6 ft. E. of rd., in limestone outcrop; aluminum tablet stamped "4022 Marfa"-----	4, 025. 615
Wire Gap, 2.6 mi. SE. of, 200 ft. SW. of water tank, 8 ft. W. of rd.; iron post stamped "4133 Marfa"-----	4, 136. 514
Wire Gap, 6.2 mi. SE. of, at E. ft. of hill, on W. side of rd.; iron post stamped "4204 Marfa"-----	4, 207. 366
Wire Gap, about 7 mi. SE. of, at summit of ridge, on E. side of rd., in mound of stone; iron post stamped "4496 Marfa"-----	4, 499. 856

From point just north of junction of Marfa-Lajitas road with T-road west to McCracken ranch house south along former road to its junction with Agua Fria trail, thence east along trail into Agua Fria quadrangle (by D. S. Birkett in 1917)

Wire Gap, 7.1 mi. SE. of, on top of first steep rise, 0.1 mi. N. of T-rd. W. to McCracken ranch house, on W. side of rd.; top of boulder-----	4, 401. 16
Wire Gap, 7.3 mi. SE. of, on Marfa-Lajitas rd., 100 ft. N. of junction of T-rd. W. to McCracken ranch house, 15 ft. W. of rd.; top of basalt boulder-----	4, 371. 54
Alamo de Cesario ranch house, 0.9 mi. W. of, on Agua Fria trail 1.0 mi. E. of its junction with Marfa-Lajitas rd., 20 ft. S. of trail; top of boulder-----	4, 307. 09
Alamo de Cesario ranch house, 40 ft. NE. of, on Agua Fria trail 1.9 mi. E. of its junction with Marfa-Lajitas rd., in fence corner; iron post stamped "1917"-----	4, 224. 522
Alamo de Cesario ranch house, 0.8 mi. E. of, 10 ft. S. of trail; top of rock-----	4, 280. 82
Alamo de Cesario ranch house, 1.6 mi. E. of, on N. edge of trail; top of large boulder-----	4, 191. 54
Alamo de Cesario ranch house, 2.3 mi. E. of, 20 ft. S. of trail, in small saddle; top of boulder-----	4, 226. 20
Alamo de Cesario ranch house, 3.6 mi. E. of, about 100 ft. E. of point where Agua Fria trail leaves small canyon and starts uphill, 8 ft. N. of trail, on large boulder; aluminum tablet stamped "1917"-----	4, 088. 347
Alamo de Cesario ranch, on E. edge of, 4.0 mi. E. of ranch house, on small summit, just E. of wire fence, on N. edge of trail; top of rock-----	4, 177. 93
Alamo de Cesario ranch house, 4.6 mi. E. of, in small saddle 20 ft. N. of dim trail; top of rock-----	4, 134. 32
Alamo de Cesario ranch house, 5.1 mi. E. of, 1.0 mi. E. of wire fence, on N. edge of dim trail to Agua Fria, about 30 ft. above bottom of canyon; top of rock-----	4, 037. 65

From junction of Marfa-Lajitas road and road to McCracken and Torneros ranch houses west along latter road to point near La Mota ranch house (by D. S. Birkett in 1917; leveled twice)

McCracken ranch house, 1.3 mi. E. of, about 1,000 ft. S. of windmill, 25 ft. N. of rd.; top of boulder-----	Feet 4, 225. 35
McCracken (Alazan) ranch house, 25 ft. N. of, 3.4 mi. W. of junction of Marfa-Lajitas rd., on W. side of gatepost; iron post-----	4, 135. 324
McCracken ranch house, 1.1 mi. W. of N. edge of Torneros Creek bed; top of large gray boulder-----	4, 080. 12
McCracken ranch house, 2.2 mi. W. of, in creek bed; top of large boulder-----	4, 003. 52
McCracken ranch house, 3.2 mi. W. of, in creek bed; top of large boulder-----	3, 929. 50
McCracken ranch house, 3.5 mi. W. of, 1.0 mi. NW. of Alazan Spring, 1.0 mi. E. of mouth of Alazan Canyon, 120 ft. S. of edge of dry bed of Torneros Creek, 8 ft. E. of trail leading to spring, in lava rock in place; aluminum tablet-----	3, 935. 151
La Mota ranch house, 1.8 mi. E. of, at bottom of creek bed; top of large boulder-----	3, 840. 98
La Mota ranch house, 0.9 mi. E. of, near bottom of creek bed, 10 ft. E. of wire fence; top of large boulder-----	3, 768. 84
La Mota ranch house, 1,200 ft. NW. of, 1,200 ft. W. of large, conspicuous cottonwood tree, in stream bed, 40 ft. S. of edge of dry bed of Torneros Creek, in large boulder; aluminum tablet-----	3, 714. 469

#### TERLINGUA ABAJA QUADRANGLE

[Latitude 29°-29°15; longitude 103°30'-103°45']

#### BREWSTER COUNTY

From mouth of Grand Canyon of Santa Helena north and northwest along roads into Chisos Mine quadrangle (by M. S. Bright in 1902)

Grand Canyon of Santa Helena, at mouth of, at junction of Terlingua Creek with the Rio Grande, in rock bench; aluminum tablet stamped "2147 Marfa"-----	Feet 2, 150. 080
Mexican settlement, 100 ft. W. of Terlingua Creek, 12 ft. W. of rd., at double cottonwood tree; iron post stamped "2211 Marfa"-----	2, 214. 988
Terlingua Abaja, 2.5 mi. NW. of, about 2 mi. NW. of Dryden ranch house, in rd. forks in open flat; iron post stamped "2316 Marfa"-----	2, 320. 074

From Emory Peak quadrangle northwest along road just north of Rio Grande to mouth of Terlingua Creek and Grand Canyon of Santa Helena (by M. S. Bright in 1902)

Cipriano Hernandez ranch house, 300 yd. N. of, 10 ft. N. of rd. forks, in embedded boulder; standard tablet or drill hole for tablet-----	2, 127. 509
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From Emory Peak quadrangle west along road from the Chimneys to Terlingua Creek (by M. S. Bright in 1902)

Peña Spring, 2.0 mi. NW. of, at summit of small divide, 40 ft. NE. of rd.; iron post stamped "2415 Marfa"-----	2, 419. 061
Peña Spring, 5.5 mi. W. of, 2.0 mi. E. of Dryden ranch house, 1.8 mi. E. of Dewees old smelter, in open flat, 12 ft. S. of rd. forks; iron post stamped "2344 Marfa"-----	2, 348. 071

## VAN HORN QUADRANGLE

[Latitude 31°-31°30'; longitude 104°30'-105°]

## CULBERSON AND HUDSPETH COUNTIES

From Van Horn east along Texas &amp; Pacific Railway to Plateau (by Chester Irvine in 1903)

	<i>Feet</i>
Van Horn, in front of Texas & Pacific Ry. sta.; top of rail.....	4, 047. 6
Van Horn, 240 ft. W. of sta., 100 ft. S. of main track, 4 ft. S. of telegraph pole; iron post stamped "4039 Van Hn 1903" (recovered by U. S. C. & G. S. in 1921).....	4, 047. 239
Van Horn, 3.0 mi. E. of, 0.3 mi. N. of Ry., 15 ft. N. of wagon rd., 10 ft. S. of dry ditch; iron post stamped "3922 Van Hn 1903".....	3, 929. 803
Wild Horse, 2.2 mi. W. of, 6 mi. E. of Van Horn, about midway between the second and third bridges W. of Wild Horse, 50 ft. S. of track, S. of abandoned rd.; iron post stamped "3867 Van Hn 1903" (recovered by U. S. C. & G. S. in 1921).....	3, 874. 710
Wild Horse, in front of section house; top of rail.....	3, 852
Wild Horse, 1.0 mi. E. of, 10 telegraph poles W. of milepost 726, 75 ft. S. of track, 25 ft. S. of right-of-way fence, on N. side of wagon rd.; iron post stamped "3826 Van Hn 1903" (recovered by U. S. C. & G. S. in 1921).....	3, 833. 719
Wild Horse, 4.0 mi. E. of, 9 telegraph poles W. of milepost 723, 15 ft. SE. of second telegraph pole E. of bridge 723.5, 54 ft. S. of center line of track, 5 ft. from right-of-way fence, N. of wagon rd.; iron post stamped "3840 Vn Hn 1903" (recovered by U. S. C. & G. S. in 1921).....	3, 848. 194
Plateau, 1.5 mi. W. of, about 1,000 ft. E. of milepost 727, about 100 ft. S. of track, 10 ft. N. of wagon rd.; iron post stamped "3889 Van Hn 1903" (not found by U. S. C. & G. S. in 1921; new highway grade at described location at that time).....	3, 897. 292
Plateau, in front of section house; top of rail.....	3, 944. 5

From Plateau north along road by way of Jones Ranch House to Jones tank  
(by Chester Irvine in 1903)

Plateau, 1.5 mi. N. of, 200 ft. W. of rd. forks, 100 ft. S. of tank, 10 ft. S. of rd. forks; iron post stamped "3916 Van Hn 1903".....	3, 924. 067
Plateau, 4.5 mi. N. of, 5 ft. W. of rd.; iron post stamped "3865 Van Hn 1903".....	3, 873. 220
Jones ranch house (formerly referred to as Marleys ranch), 300 ft. E. of, 300 ft. N. of corral; iron post stamped "3759 Van Hn 1903".....	3, 767. 205
Jones ranch house, 2.2 mi. N. of, at rd. forks; iron post stamped "3779 Van Hn 1903".....	3, 787. 132
Jones ranch house, 5.8 mi. N. of, 5 ft. E. of rd. to Luckett's camp; iron post stamped "3899 Van Hn 1903".....	3, 906. 874
Jones ranch house, 8.8 mi. N. of, at junction of Jones ranch rd. and Old Salt rd.; iron post stamped "3969 Van Hn 1903".....	3, 976. 949
Jones tank, 2,400 ft. E. of, 15 ft. S. of Figure 4-Van Horn rd.; iron post stamped "Van Hn 1903 4148".....	4, 155. 997

From Jones tank southwest by way of Bean's lower wells to Van Horn (by Chester Irvine in 1903)

Jones tank, 2.5 mi. W. of, 10 ft. E. of rd. on summit of small ridge; iron post stamped "3899 Van Hn 1903".....	3, 906. 946
Bean's lower wells, 1.8 mi. NE. of, 10 ft. E. of rd.; iron post stamped "3708 Van Hn 1903".....	3, 716. 161



Bean's lower wells, 1.6 mi. S. of, at rd. forks; iron post stamped "3663 Van Hn 1903"-----	<i>Feet</i> 3, 670. 938
Bean's lower wells, 4.6 mi. S. of, 10 ft. E. of rd.; iron post stamped "3715 Van Hn 1903"-----	3, 722. 754
Bean's lower wells, 7.6 mi. S. of, 0.5 mi. E. of small hill, 5 ft. E. of rd.; iron post stamped "3833 Van Hn 1903"-----	3, 840. 806
Bean's lower wells, 11.5 mi. S. of, 30 ft. W. of rd. forks; iron post stamped "4115 Van Hn 1903"-----	4, 123. 031
Van Horn, 4.4 mi. N. of, 15 ft. E. of rd.; iron post stamped "4081 Van Hn 1903"-----	4, 089. 151
Van Horn, 1.5 mi. N. of, 200 ft. SW. of tank, 5 ft. E. of rd.; iron post stamped "4074 Van Hn 1903"-----	4, 082. 051

From Van Horn west along Texas & Pacific Railway to road crossing 2.0 miles east of Allamore, thence northwest, northeast, and north along roads by way of Hall Canon ranch to Figure 2 ranch house (by Chester Irvine in 1903)

Van Horn, 3.1 mi. W. of, 1,240 ft. W. of Texas & Pacific Ry. mile-post 737 (formerly 745), 82 ft. N. of center line of track, 10 ft. N. of wagon rd.; iron post stamped "4239 Van Hn 1903" (not found by U. S. C. & G. S. in 1921)-----	4, 246. 881
Van Horn, 5.7 mi. W. of, 1.4 mi. W. of Hillside switch, 1,200 ft. W. of third bridge W. of Hillside switch, about 600 ft. N. of track, 10 ft. S. of old abandoned wagon rd.; iron post stamped "4395 Van Hn 1903" (recovered by U. S. C. & G. S. in 1921)-----	4, 403. 137
Allamore, 2.0 mi. E. of, 23 ft. E. of E. row of Spanish dagger trees, about 28 ft. N. of center line of track, near former location of sta. and section house; iron post stamped "4603 Van Hn 1903" (recovered by U. S. C. & G. S. in 1921)-----	4, 611. 585
Millican ranch house, 1.3 mi. SW. of, at Texas & Pacific Ry. pump sta., 150 ft. SW. of well, at SE. corner of fence; iron post stamped "4702 Van Hn 1903"-----	4, 709. 820
Millican ranch house, 1.5 mi. N. of, at rd. forks, on flat; iron post stamped "4865 Van Hn 1903"-----	4, 873. 288
Hazel mine, near Culberson-Hudspeth county line, 60 ft. E. of rd., 30 ft. SW. of old frame building; iron post stamped "4906 Van Hn 1903"-----	4, 913. 958
Hall Canon ranch house (Sulphur ranch), 200 ft. N. of, on W. side of gate; iron post stamped "4461 Van Hn 1903"-----	4, 469. 250
Hall Canon ranch house, 2.5 mi. N. of, 0.2 mi. N. of old tank, 600 ft. N. of rd. forks, 10 ft. W. of Salt Flat-Van Horn rd.; iron post stamped "4290 Van Hn 1903"-----	4, 297. 624
Hall Canon ranch house, 5.5 mi. N. of, 20 ft. E. of rd., on E. side of drain; iron post stamped "4048 Van Hn 1903"-----	4, 055. 922
Hall Canon ranch house, 8.5 mi. N. of, 10 ft. E. of rd.; iron post stamped "3806 Van Hn 1903"-----	3, 813. 888
Hall Canon ranch house, 11.6 mi. N. of, about 10 mi. S. of Figure 2 ranch house, 2,400 ft. N. of rd. forks, 20 ft. E. of rd., in drain; iron post stamped "3625 Van Hn 1903"-----	3, 632. 791
Figure 2 ranch house, 6.9 mi. S. of, about 1 mi. SW. of S. end of Salt Lake, 0.5 mi. S. of canyon windmills, 10 ft. W. of wagon rd.; iron post stamped "3648 Van Hn 1903"-----	3, 655. 442
Figure 2 ranch house, 3.8 mi. S. of, 0.5 mi. W. of N. end of Salt Lake, 10 ft. W. of wagon rd.; iron post stamped "3581 Van Hn 1903"-----	3, 588. 733
Figure 2 ranch house, 1,200 ft. S. of windmills, 20 ft. W. of rd., at corner of fence; iron post stamped "3585 Van Hn 1903"-----	3, 592. 613

From road forks west of Salt Lake southeast to junction of Jones ranch and Old Salt roads (by Chester Irvine in 1903)

Figure 2 ranch house, 8.2 mi. SE. of, on rd. to Bean ranch house and Seven-Heart Gap, 1.5 mi. across country NW. of Canon's Double Wells, 10 ft. N. of rd.; iron post stamped "3579 Van Hn 1903"-----	Feet 3, 586. 643
Figure 2 ranch house, 11.6 mi. SE. of, 1.2 mi. NW. of junction of rd. to Seven-Heart Gap with rd. to Bean ranch house, 2.5 mi. across country E. of Canon's Double Wells, at summit of small hill on flat, 10 ft. W. of rd.; iron post stamped "3622 Van Hn 1903"-----	3, 629. 907
Figure 2 ranch house, 14.7 mi. SE. of, 2.0 mi. E. of junction of rd. to Seven-Heart Gap with rd. to Bean ranch house, 10 ft. W. of rd.; iron post stamped "3670 Van Hn 1903"-----	3, 677. 534
Figure 2 ranch house, 17.5 mi. SE. of, 1.0 mi. W. of junction of rd. to Seven-Heart Gap with rd. SW. of Bean's lower wells and Van Horn, 4.5 mi. NW. of junction of rd. to Seven-Heart Gap (Old Salt rd.) and rd. S. to Jones ranch house, 10 ft. S. of rd.; iron post stamped "3763 Van Hn 1903"-----	3, 770. 659

From point 1.2 miles east of Wild Horse section house north along Salt Flat and Valentine roads 4.0 miles, thence west and south across country to point 6.0 miles east of Van Horn (by Stuart T. Penick in 1905)

Wild Horse, 3.0 mi. NE. of, 2.5 mi. E. of Medley ranch house, 0.8 mi. N. of crossroads, 20 ft. W. of Salt Flat-Valentine rd.; iron post stamped "Van Hn 1905"-----	3, 770. 707
Wild Horse, 4.0 mi. NW. of, 4.0 mi. W. of Salt Flat-Valentine rd., 3.0 mi. N. of Medley ranch house; iron post stamped "3793 Van Hn 1905"-----	3, 800. 669

From crossroads 3.0 miles northeast of Wild Horse, north along road to Medley's double wells, thence southeast across country to Jones gate, thence southwest along road to starting point (by Stuart T. Penick in 1905)

Wild Horse, 5.5 mi. N. of, 2.5 mi. S. of Medley's double wells, 30 ft. E. of Salt Flat-Valentine rd.; iron post stamped "3729 Van Hn 1905"-----	3, 736. 874
Medley's double wells, 1,200 ft. S. of, 20 ft. W. of Salt Flat-Valentine rd.; iron post stamped "3700 Van Hn 1905"-----	3, 708. 118
Medley's double wells, 3.2 mi. SE. of, 3.0 mi. NW. of Jones pasture gate; iron post stamped "3726 Van Hn 1905"-----	3, 733. 787
Jones' pasture gate, 12 ft. N. of, 10 ft. E. of rd.; iron post stamped "3782 Van Hn 1905"-----	3, 790. 234
Jones' pasture gate, 3.0 mi. SW. of, 15 ft. N. of rd.; iron post stamped "3782 Van Hn 1905"-----	3, 789. 519

From Medley's double wells northeast across country to Bean ranch house, thence along roads northwest and south to point 1.5 miles south of Bean's lower wells (by Stuart T. Penick in 1905)

Medley's double wells, 3.0 mi. N. of, 20 ft. W. of Salt Flat-Valentine rd.; iron post stamped "3679 Van Hn 1905"-----	3, 686. 894
Bean ranch house, 600 ft. W. of, 10 ft. S. of rd.; iron post stamped "3665 Van Hn 1905"-----	3, 672. 439

From crossroads 2.0 miles east of Canon's double wells southeast to tank, thence east to Bean pasture gate, thence northeast to Taylor-Salt Flat road (by Stuart T. Penick in 1905)

Canon's tank, 600 ft. S. of, in rock; standard tablet stamped "3641 Van Hn 1905"-----	3, 648. 960
Bean's pasture gate, 20 ft. S. of, 3 mi. NW. of Bean's lower wells, 10 ft. SW. of rd.; standard tablet stamped "3645 Van Hn 1905"-----	3, 653. 193

From Geasling Well northeast along road 3.2 miles, thence northwest along road to Freeman Well, thence northwest, east and northwest along trails and across country to Figure 2 ranch house (by Stuart T. Penick in 1905)

	<i>Feet</i>
Geasling Well, 600 ft. N. of; iron post stamped "3669 Van Hn 1905"-----	3, 676. 482
Geasling Well, 3.2 mi. NE. of, 0.5 mi. NW. of small hill; iron post stamped "3892 Van Hn 1905"-----	3, 900. 108
Freeman Well, 600 ft. S. of, 300 ft. S. of rd.; iron post stamped "3694 Van Hn 1905"-----	3, 702. 050
Drift Wells, 1.2 mi. N. of, in rd. forks; iron post stamped "3664 Van Hn 1905"-----	3, 671. 587
Johns Well, 2.5 mi. SE. of, 0.5 mi. E. of long, low ridge; iron post stamped "3939 Van Hn 1905"-----	3, 946. 611
Johns Well, 600 ft. N. of; iron post stamped "3784 Van Hn 1905"-----	3, 791. 153
Threemile Well, 30 ft. S. of tank, 20 ft. N. of rd.; iron post stamped "3644 Van Hn 1905"-----	3, 652. 040

From point 0.5 mile south of Canon windmills northwest and north along Highway 54 to Figure 2 ranch house (double-run line by J. M. Lawson in 1933)

Canon windmills, 0.5 mi. S. of, 14.5 mi. N. of Sulphur ranch house, 1.0 mi. SW. of Salt Lake, 10 ft. W. of wagon rd.; iron post stamped "3648 Van Horn 1903"-----	3, 655. 442
Figure 2 ranch house, 5.8 mi. S. of, on Highway 54, 2.4 mi. S. of cattle guard between Corn Ranch and Figure 2 ranch house, 30 ft. E. of rd., 10 ft. N. of small drain, on top of large boulder; chiseled square-----	3, 662. 75
Figure 2 ranch house, 4.8 mi. S. of, 1.5 mi. S. of cattle guard between ranches, on top of NW. corner of concrete dip; chiseled square----	3, 646. 89
Figure 2 ranch house, 3.4 mi. S. of, 1 ft. N. of fence line between ranches, 65 ft. W. of cattle guard across highway, in concrete post; standard tablet stamped "L 1 1933 3668"-----	3, 667. 170
Reference mark, 79 ft. E. of tablet, in E. guard rail of cattle guard; top of bolt-----	3, 667. 34
Figure 2 ranch house, 1.5 mi. S. of, in bed of small dry wash, 15 ft. W. of Highway, top of rock out crop; chiseled square-----	3, 657. 86
Figure 2 ranch house, 0.2 mi. S. of rd. forks, on S. side of dip, 60 ft. E. of highway, top of large concrete slab lying on ground; bolt-----	3, 619. 17
Figure 2 ranch house, 1,200 ft. S. of windmills, 20 ft. W. of rd., in corner of fence; iron post stamped "3585 Van Horn 1903"-----	3, 592. 613

From Figure 2 ranch house north along Highway 54 into Guadalupe Peak No. 3 quadrangle (by J. M. Lawson in 1933)

Figure 2 ranch house, 1.7 mi. N. of, 400 ft. N. of rd. junction at angle in highway at S. end of a 10-mi. tangent, on top of E. end of galvanized-iron culvert; circle-----	3, 611. 00
Figure 2 ranch house, 2.7 mi. N. of, about 1 mi. N. of angle in highway, on tangent, 80 ft. N. and 39 ft. W. of large double galvanized-iron pipe culvert and ditch to E., on S. side of small drift ditch SW., in concrete post; standard tablet stamped "L 2 1933 3613"-----	3, 612. 161
Reference mark, 100 ft. SE. of tablet, on top of E. end of galvanized-iron culvert; circle-----	3, 612. 06

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