

# TEXAS.

## TRIANGULATION STATIONS.

Alpine, Bone Spring, Bullis Gap, Cavins, Chisos Mountains, Dove Mountains, Hood Spring, Indian Wells, Longfellow, Marathon, Maravillas Canyon, and Sanderson quadrangles.

### BREWSTER AND TERRELL COUNTIES.

During the summer of 1917 J. R. Ellis extended triangulation over the above-named quadrangles, based on stations Brown, Ord, and Sanderson of the U. S. Coast and Geodetic Survey, on North American datum.

For additional geographic positions in Texas see U. S. Geological Survey Bulletins 122, 181, 245, 276, 310, 440, 496, 551, and 644 and the 18th and 21st Annual Reports; also U. S. Coast and Geodetic Survey Reports for 1905 and 1911 and Special Publications Nos. 11, 17, and 54.

The U. S. Coast and Geodetic Survey and the Corps of Engineers, U. S. Army, have many unpublished positions.

#### BLACK HILLS, BREWSTER COUNTY, TEX. (Not occupied.)

Situated on highest point of westernmost butte of group known as the Black Hills, about 25 miles due east of Santiago Mountain and 10 miles northwest of Dove Mountain. Located from two points only.

Station mark: Tablet cemented in solid rock.

Signal: Cairn 5 feet in diameter at base and 6 feet in height, partly covered with white cloth.

[Latitude 29° 49' 06.19". Longitude 102° 59' 28.53".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Tres Hermanas.....	192 28 39	12 30 08	4.34356	13.702
Dove.....	296 58 47	117 03 06	4.19574	9.756

#### BLUFF, TERRELL COUNTY, TEX. (Not occupied.)

Situated on a high point on the bluffs about 5 miles north of Rio Grande and about 14 miles south of Dryden railroad station and post office. New road south from Dryden passes about 1 mile east of station.

Signal: Three soto bushes about 6 feet high, covered with white cloth and forming a tripod, which is supported at the base by a cairn 5 feet in diameter and 3 feet high.

[Latitude 29° 53' 16.44". Longitude 102° 06' 44.26".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Indian Wells.....	101 30 15	281 20 56	4.48711	19.075
Twin.....	118 53 16	298 48 55	4.20414	9.942
Cactus.....	178 19 01	358 19 07	3.83110	4.212

**BROWN, BREWSTER COUNTY, TEX.**

A station of the U. S. Coast and Geodetic Survey on the southernmost and highest one of the Housetop Mountains, 4 miles northeast of Haymond railroad station, 2.5 miles southwest of Brown's goat ranch in Dry Valley, 10 feet from the sheer west face and 5 meters N. 24° E. from U. S. G. S. cairn.

Station mark: Coast and Geodetic Survey tablet in drill hole in boulder.

Reference mark: Coast and Geodetic Survey reference tablet 19.93 meters, true azimuth 218°, from station mark.

[Latitude 30° 09' 16.766''. Longitude 102° 57' 09.357''].]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
Horse.....	49	34	50	229	29	53	4.31872	12.944
Santiago.....	51	44	11.58	231	30	17.55	4.7561994	35.445
Marathon.....	111	31	22	291	24	20	4.38205	14.976
Longfellow.....	258	48	18	78	58	25	4.51723	20.445
Feodora.....	275	08	15.24	95	26	19.56	4.7639371	36.082
Indian Wells.....	294	35	59.44	114	51	52.54	4.7492758	34.884
Bullis Gap.....	316	23	17.28	136	34	14.95	4.7094542	31.828
Tres Hermanas.....	356	14	04.71	176	14	24.09	4.1979228	9.801
Ord (C. & G. S.).....	100	05	44.19	279	48	45.48	4.7403874	34.18
Nation (C. & G. S.).....	177	41	51.52	357	41	30.79	4.4365518	16.97
Pyle (C. & G. S.).....	229	09	59.90	49	18	26.69	4.5501692	22.06
Sanderson (C. & G. S.).....	264	14	55.17	84	33	04.30	4.7652047	36.19
Dry (C. & G. S.).....	267	12	27.69	87	17	57.24	4.2448541	10.92
New (C. & G. S.).....	284	17	34.32	104	29	29.96	4.5958056	24.50
Road (C. & G. S.).....	285	38	56.91	105	58	32.65	4.8149590	40.58

**BULLIS GAP, BREWSTER COUNTY, TEX.**

Situated on high part of ridge 1 mile south of Bullis Gap, 25 miles south and 4 miles east of Longfellow railroad station and post office. The Sanderson-Reagan Canyon wagon road passes through Bullis Gap.

Station mark: Aluminum tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, centered over station mark and covered with white cloth.

[Latitude 29° 49' 10.50''. Longitude 102° 35' 13.52''].]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
River Peak.....	49	24	54	229	17	30	4.50081	19.686
Dove.....	73	55	44.09	253	47	59.87	4.4171171	16.235
Tres Hermanas.....	122	04	56.40	301	54	19.43	4.6063404	25.101
Brown.....	136	34	14.95	316	23	17.28	4.7094542	31.828
Indian Wells.....	229	04	00.45	49	08	53.18	4.3192626	12.960

**CACTUS, TERRELL COUNTY, TEX.**

Situated on a low hill about 9 miles south of Dryden railroad station and post office. To reach the station from Dryden, follow the new road south about 9 miles to crossroad (just south of the crossroad the new road begins the descent of a long hill) take road to right and follow west along ridge about 2 miles. Station stands 100 feet south of road.

Station mark: Stone post with drill hole in top.

Signal: An 11-foot sawed-lumber tripod centered over station mark.

[Latitude 29° 56' 56.46''. Longitude 102° 06' 51.76''].]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
Twin.....	93	57	24	273	53	07	4.14117	8.600
Dryden.....	174	11	56	354	11	44	3.81252	4.035
Bluff.....	358	19	07	178	19	01	3.83110	4.212

**DOVE MOUNTAIN, BREWSTER COUNTY, TEX.**

Situated on highest point of middle one of three peaks forming Dove Mountain, about 24 miles south and 5 miles east of Tesnus railroad station and post office.

Station mark: Bronze tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, centered over station mark and covered with white cloth.

[Latitude 29° 45' 14.66". Longitude 102° 50' 47.99".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Rosi las.....	57	15	49	237	04	05	4.65881	28.324
South Pass.....	80	39	44	260	28	38	4.56315	22.725
Santiago.....	99	24	51.84	279	07	53.38	4.7464586	34.658
Black Hills.....	117	03	06	296	58	47	4.19574	9.752
Tres Hermanas.....	162	14	11.21	342	11	20.46	4.4786188	18.705
Bullis Gap.....	253	47	59.87	73	55	44.09	4.4171171	16.235
River Peak.....	355	23	47	175	24	07	4.12773	8.338

**DRYDEN, TERRELL COUNTY, TEX.**

Situated on a low ridge 3 miles south of Dryden railroad station and post office. To reach station from Dryden follow new road south about 2.5 miles to point where road crosses ridge, thence follow west along ridge 0.75 mile to station; 21 feet west to north and south wire fence; 5.166 feet north to T fence.

Signal: A 12-foot lumber tripod centered over station mark.

Station mark: Stone post 4 by 8 by 18 inches, with hole drilled in top, set 14 inches in ground.

[Latitude 30° 00' 26.29". Longitude 102° 07' 16.25".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Twin.....	67	16	51.62	247	12	46.51	4.1540515	8.859
Feodora.....	116	15	54.08	296	08	56.89	4.3956546	15.453
Sanderson.....	134	54	27.12	314	47	32.46	4.4944231	19.399
Dryden West Pump Tower.....	190	38	35	10	38	46	3.64105	2.719
Juniper.....	195	20	45	15	22	00	4.17738	9.348
Windmill.....	241	35	50	61	38	01	3.90026	4.939
Cactus.....	354	11	44	174	11	56	3.81252	4.035

**DRYDEN WEST PUMP TOWER, TERRELL COUNTY, TEX. (Not occupied.)**

Station mark: Center of tower 2.7 miles nearly north of Dryden.

[Latitude 30° 02' 45.97". Longitude 102° 06' 46.08".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Dryden.....	10	38	46	190	38	35	3.64105	2.719
Feodora.....	106	10	52	286	03	39	4.38134	14.952
Sanderson.....	127	44	34	307	37	24	4.46213	18.009

**FEODORA, TERRELL COUNTY, TEX.**

Situated on high flat-topped hill 3.25 miles southeast of Sanderson and about 1 mile northeast of Southern Pacific R. R. Station is on highest part of hill and 510 feet east of rim rocks on west end of hill, which faces the Southern Pacific R. R. tracks.

Station mark: Aluminum tablet cemented in solid rock.

Signal: A 12-foot sawed-lumber tripod, centered over tablet and covered with white cloth.

[Latitude 30° 06' 22.96". Longitude 102° 21' 09.21".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Indian Wells.....	20 47 25.39	200 45 16.93	4.2877370	12.053
Peak.....	74 24 25	254 09 29	4.69749	30.693
Tres Hermanas.....	79 47 20.09	259 29 37.44	4.7616903	35.896
Brown.....	95 26 19.56	275 08 15.24	4.7639371	36.082
Sanderson.....	180 52 18.48	0 52 21.64	4.0428240	6.858
Dryden West Pump Tower.....	286 03 39	108 10 52	4.38134	14.952
Dryden.....	296 08 56.89	116 15 54.08	4.3956546	15.453
Twin.....	330 53 29.38	150 56 20.78	4.2759375	11.730

#### GARDEN SPRINGS, BREWSTER COUNTY, TEX. (Not occupied.)

Sighted from two points only.

[Latitude 30° 04' 33.78". Longitude 103° 17' 01.50".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Santiago.....	25 35 17	205 31 19	4.47126	18.391
Ord.....	129 19 00	309 12 01	4.45930	17.892

#### INDIAN WELLS, TERRELL COUNTY, TEX.

Situated on a low bluff facing northwest, about 1 mile northeast of Indian Wells and about 16 miles south of Sanderson. Sanderson-Indian Wells wagon road passes one-third of a mile west of station. A dim road forks from main road and passes 300 feet west of station.

Station mark: A bronze tablet cemented in solid rock 1 foot below surface, over which a stone post 4 by 6 by 24 inches is centered. Post projects 1 foot above surface. A cross and U. S. G. S. is chiseled in top of post.

Signal: A 13-foot lumber tripod centered over station mark and covered with white cloth.

[Latitude 29° 56' 33.96". Longitude 102° 25' 25.94".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Bullis Gap.....	49 08 53.18	229 04 00.45	4.192656	12.960
Peak.....	96 32 29	276 19 41	4.61682	25.714
Tres Hermanas.....	98 56 25.09	278 40 53.34	4.7040468	31.434
Brown.....	114 51 52.54	294 35 59.44	4.7492758	34.884
Feodora.....	200 45 16.93	20 47 25.39	4.2877370	12.053
Twin.....	264 07 58.62	84 12 57.77	4.2082175	10.036
Bluff.....	281 20 56	101 30 15	4.48711	19.075

#### JUNIPER, TERRELL COUNTY, TEX.

Situated on east and west ridge, 8 miles due north of Dryden railroad station. The Dryden-Sheffield wagon road passes about 700 feet east of station; 22 feet southwest of station to center of juniper bush, 1,140 feet southeast of station to center of small conical hill.

Signal: A 12-foot sawed-lumber tripod centered over tablet.

Station mark: Bronze tablet cemented in solid rock.

[Latitude 30° 08' 17.44". Longitude 102° 04' 47.51".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Dryden.....	15 22 00	195 20 45	4.17738	9.348
Sanderson.....	106 07 17	285 59 07	4.43389	16.875
Windmill.....	344 20 55	164 21 51	4.04695	6.923

**LONGFELLOW, PECOS COUNTY, TEX. (Not occupied.)**

Situated on a high hill on the Downey ranch, about 5 miles due north of Longfellow railroad station and post office. The Longfellow-Downey ranch wagon road passes about two-thirds of a mile east of the station.

Station mark: Tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, covered with white cloth and centered over tablet.

[Latitude 30° 12' 42.67". Longitude 102° 37' 02.55".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Tres Hermanas.....	54	51	34	234	41	48	4.58301	23.788
Brown.....	78	58	25	258	48	18	4.51723	20.445
Sanderson.....	271	24	23	91	31	57	4.40965	15.959

**MARATHON, BREWSTER COUNTY, TEX. (Not occupied.)**

Situated on a small butte, about 3½ miles east and 2 miles north of Marathon railroad station and post office.

Signal: White flag attached to a 6-foot scantling, around the base of which was built a cairn.

[Latitude 30° 14' 03.18". Longitude 103° 11' 07.86".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Ord.....	91	19	07	271	09	11	4.50155	19.720
Brown.....	291	24	20	111	31	22	4.38205	14.976
Tres Hermanas.....	316	13	25	136	20	45	4.53119	21.113

**ORD, BREWSTER COUNTY, TEX.**

A station of the U. S. Geological Survey located in 1884, occupied in 1892, and relocated by the U. S. Coast and Geodetic Survey in 1917. On highest point of Mount Ord, 12 miles southeast of Alpine and 2 miles east of Alpine-Terlingua road.

Station mark: Triangle and letters "U. S." cut in a flat rock flush with ground, near center of ridge.

Reference mark: Old U. S. Geological Survey cairn; azimuth 337° 07', distance 16.4 meters, from station mark.

[Latitude 30° 14' 25.542". Longitude 103° 30' 54.67".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Flat.....	173	04	51	353	03	53	4.40571	15.815
Gillion.....	226	36	17	46	42	42	4.44781	17.424
Leonard.....	250	58	09	71	06	55	4.45900	17.879
Marathon.....	271	09	11	91	19	07	4.50155	19.720
Tres Hermanas.....	284	24	54.34	114	42	10.29	4.7835027	37.744
Horse.....	300	52	09	121	04	09	4.65081	27.807
Garden Springs.....	309	12	01	129	19	00	4.45930	17.892
Santiago.....	347	57	19.77	168	00	18.48	4.6621042	28.540
Baldy (C. & G. S.).....	124	52	19.22	304	32	18.58	4.8860644	47.80
Star (C. & G. S.).....	155	50	37.83	335	42	07.80	4.8147855	40.56
Beard (C. & G. S.).....	179	35	23.42	359	35	14.51	4.8137612	40.47
Chancellor (C. & G. S.).....	219	27	56.62	39	41	00.25	4.8110102	40.22
Nation (C. & G. S.).....	251	18	17.17	71	34	58.88	4.7475357	34.74
Brown (C. & G. S.).....	279	48	45.48	100	05	44.19	4.7403874	34.18

**PEAK, BREWSTER COUNTY, TEX. (Not occupied.)**

A sharp peak on the north end of a high butte, which lies about 5 miles east and 1 mile south of Tres Hermanas Mountain.

[Latitude 29° 59' 04.58". Longitude 102° 50' 59.64".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Tres Hermanas.....	109 20 46	289 18 04	3.97314	5.841
Feodora.....	254 09 29	74 24 25	4.69749	30.963
Indian Wells.....	276 19 41	96 32 29	4.61682	25.714

**RIVER PEAK, BREWSTER COUNTY, TEX. (Not occupied.)**

The center of a cone-shaped peak near the Rio Grande, about 7.5 miles due south of Dove Mountain.

[Latitude 20° 38' 00.24". Longitude 102° 50' 07.96".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Tres Hermanas.....	166 17 37	346 14 26	4.63628	26.892
Dove.....	175 24 07	355 23 47	4.12773	8.338
Bullis Gap.....	229 17 30	49 24 54	4.50081	19.686

**ROSILLOS, BREWSTER COUNTY, TEX. (Not occupied.)**

About 70 miles south of Marathon and 20 miles north of Boquillas. About 4 miles west of the Marathon and Boquillas road, on highest peak in the range. Sighted from two points only.

Station mark: A bronze triangulation tablet cemented in solid rock under center of a cairn 8 feet high.

[Latitude 29° 31' 51.94". Longitude 103° 14' 31.92".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Santiago.....	153 30 53	333 25 43	4.57599	23.407
Dove.....	237 04 05	57 15 49	4.65881	23.324

**SANDERSON, TERRELL COUNTY, TEX.**

A station of the U. S. Coast and Geodetic Survey on highest point of mountain 4 miles northeast of Sanderson, 1 mile east from the first summit of the by-road which leads northeast from Sanderson-Sheffield wagon road, 2.5 miles from Sanderson. Station is 1 mile from top of ridge and on highest point in this vicinity.

Station mark: Identical with U. S. Geological Survey mark, a tablet in top of stone post.

Reference marks: (1) Azimuth 217° 51', distance 34.05 meters; (2) azimuth 312° 35', distance 28.75 meters; (3) azimuth 22° 47', distance 37.70 meters.

[Latitude 30° 12' 21.331". Longitude 102° 21' 02.932".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Feodora.....	0	52	21.64	180	52	18.48	4.0428240	6.858
Tres Hermanas.....	69	32	22.18	249	14	34.79	4.7843411	37.817
Longfellow.....	91	31	57	271	24	23	4.40965	15.959
Jumper.....	285	59	07	106	07	17	4.43389	16.875
Dryden West Pump Tower.....	307	37	24	127	44	34	4.49213	18.009
Dryden.....	314	47	32.46	134	54	27.12	4.4944231	19.399
Twin.....	341	52	03.72	161	54	52.23	4.4618980	17.999
Russell.....	184	50	11.36	4	50	36.46	4.1978092	9.798
King.....	248	01	10.71	68	07	31.14	4.3378546	13.527
New (C. & G. S.).....	52	02	00.46	231	55	48.97	4.4003477	15.62
Dry (C. & G. S.).....	83	16	26.20	263	03	46.76	4.6095729	25.29
Pyle (C. & G. S.).....	119	30	00.09	299	20	14.73	4.5516103	22.13
Hen (C. & G. S.).....	293	14	54.43	113	21	57.14	4.3893883	15.23
Eldredge (C. & G. S.).....	320	58	32.83	141	04	05.89	4.4512005	17.56

**SANTIAGO, BREWSTER COUNTY, TEX.**

On highest point of Santiago Mountain, about 18 miles a little north of east from Mr. Collin's ranch.

Station mark: Cross mark on a small post set in the earth under center of a cairn 10 feet high.

Reference marks: Bronze tablet cemented in solid rock under the cairn and bearing from station mark N. 30° W., distance 1.6 feet; cross mark and the letters "U. S." cut deep in the rock and bearing from station mark S. 22° 59' W., distance 15.3 feet.

[Latitude 29° 50' 06.57". Longitude 103° 24' 57.66".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Ord.....	168	00	18.48	347	57	19.77	4.6621042	28.540
Garden Springs.....	205	31	19	25	35	17	4.47126	18.391
Brown.....	231	30	17.55	51	44	11.58	4.7561994	35.445
Tres Hermanas.....	246	37	32.87	66	51	44.39	4.6975279	30.965
Dove.....	279	07	53.38	99	24	51.84	4.7404586	34.658
South Pass.....	308	10	59	128	16	48	4.38387	15.039
Rosillos.....	333	25	43	153	30	53	4.57599	23.407

**SOUTH PASS, BREWSTER COUNTY, TEX. (Not occupied.)**

Situated on high point of north and south ridge, about 4 miles north of South Pass.

Signal: Quadripod of poles covered with white cloth and anchored at the base with rock.

[Latitude 29° 42' 00.05". Longitude 103° 13' 10.42".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Santiago.....	128	16	48	308	10	59	4.38387	15.039
Tres Hermanas.....	217	40	46	37	49	04	4.64178	27.235
Dove.....	260	28	38	80	39	44	4.56315	22.725

**STILLWELL, BREWSTER COUNTY, TEX. (Not occupied.)**

About 14 miles east and a little north of Marathon, beyond the old, lower pump in Center schoolhouse, 2 miles northeast of Yarbrow's ranch, 1 mile north of Mathews's ranch, on the highest point of a low ridge running north and south, and just east of and below Cedar Mountains. An old road runs from Mathews's ranch to the foot of the hill.

Station mark: Bronze tablet in outcrop of ledge.

Signal: Small lumber quadripod covered with white cloth and centered over station.

[Latitude 30° 16' 17.52". Longitude 103° 01' 28.32".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Horse.....	18 36 04	198 34 00	4.44614	17.358
Leonard.....	106 29 48	286 23 31	4.31901	12.953
Nation.....	202 03 46	22 05 36	4.18982	9.620

**TRES HERMANAS, BREWSTER COUNTY, TEX.**

Situated on the middle and highest one of three peaks known as the Three Sisters, which are located about 7 miles due south of Tesnus railroad station and post office.

Station mark: Stone post 6 by 8 by 24 inches, with hole drilled in top, set 15 inches in ground.

Signal: Cairn of 7-foot base and 7-foot height, centered over station mark.

[Latitude 30° 00' 45.61". Longitude 102° 56' 30.70".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Black Hills.....	12 30 08	192 28 39	4.34356	13.706
South Pass.....	37 49 04	217 40 46	4.64178	27.235
Santiago.....	66 51 44.39	246 37 32.87	4.6975279	30.965
Horse.....	97 31 59	277 26 44	4.23152	10.589
Ord.....	114 42 10.29	294 24 54.34	4.7835027	37.744
Marathon.....	136 20 45	316 13 25	4.53119	21.113
Brown.....	176 14 24.09	356 14 04.71	4.1979228	9.801
Longfellow.....	234 41 48	54 51 34	4.58301	23.788
Sanderson.....	249 14 34.79	69 32 22.18	4.7843411	37.817
Feodora.....	259 29 37.44	79 47 20.09	4.7616903	35.896
Indian Wells.....	278 40 53.34	98 56 25.09	4.7040488	31.434
Peak.....	289 18 04	109 20 46	3.97314	5.841
Bullis Gap.....	301 54 19.43	122 04 56.40	4.6063404	25.101
Dove.....	342 11 20.46	162 14 11.21	4.4786186	18.705
River Peak.....	346 14 26	166 17 37	4.63628	26.892

**TWIN, TERRELL COUNTY, TEX.**

Situated near center of northwest and smaller of two buttes 11 miles southwest of Dryden railroad station and 7 miles south and 2 miles west of Eldridge railroad station.

Station mark: Aluminum tablet cemented in solid rock.

Signal: A 12-foot sawed-lumber tripod centered over tablet; sides of signal are covered with white cloth.

[Latitude 29° 57' 27.20". Longitude 102° 15' 26.73".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Indian Wells.....	84 12 57.77	264 07 58.62	4.2082175	10.036
Feodora.....	150 56 20.78	330 53 29.38	4.2759375	11.730
Sanderson.....	161 54 52.23	314 52 03.72	4.4618980	17.999
Dryden.....	247 12 46.51	67 16 51.62	4.1540515	8.859
Cactus.....	273 53 07	93 57 24	4.14117	8.600
Bluff.....	298 48 55	118 53 16	4.20414	9.942



**WINDMILL, BREWSTER COUNTY, TEX. (Not occupied.)**

Sighted from two points only.

[Latitude 30° 02' 29.00". Longitude 102° 02' 55.31".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Dryden.....	61 38 01	241 35 50	3.90026	4.939
Juniper.....	164 21 51	344 20 55	4.04695	6.923

Alpine, Buck Hill, Chisos Mountains, Hood Springs, Jordan Gap, Nine Point Mesa,  
and Santiago Peak 15' quadrangles.

**BREWSTER COUNTY.**

Secondary triangulation by C. G. Anderson in 1917, based on Santiago, Hen Egg, and San Jacinto stations of the U. S. Geological Survey, on approximate North American datum.

**BLACK CAP, BREWSTER COUNTY, TEX.**

On a sharp black peak 2 miles south of Santiago Draw and 10 miles east of Alpine-Terlingua road.

Station mark: Bronze tablet set at highest point of hill.

Signal: A cairn.

[Latitude 29° 43' 18.9". Longitude 103° 22' 35.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buck.....	102 29 24	282 22 18	4.35703	14.138
Santiago.....		343 06 35	4.11783	8.150

**BUCK, BREWSTER COUNTY, TEX.**

On south edge of a low, flat hill, locally known as Buck Hill, 2 miles west of the Alpine-Terlingua road.

Station mark: Bronze tablet set in the highest boulder on the hill.

[Latitude 29° 45' 57.9". Longitude 103° 36' 22.8".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Santiago.....	247 21 30	67 27 10	4.29948	12.383
Hen Egg.....	357 24 17	177 24 44	4.51096	20.152

**DEL NORTE, BREWSTER COUNTY, TEX.**

On a sharp peak 2 miles south of Del Norte Gap.

Station mark: Bronze tablet.

Signal: Rock monument.

[Latitude 29° 58' 53.7". Longitude 103° 25' 38.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Elephant.....	106 42 15	286 39 08	4.02081	6.519
Santiago.....	356 07 25	176 07 45	4.21129	10.107

**DOME, BREWSTER COUNTY, TEX.**

On a hill known as Round Up Hill, 5 miles west of Kohernit's ranch.

Station mark: Bronze tablet.

Signal: Brush 4 feet north of tablet.

[Latitude 29° 58' 29.8". Longitude 103° 38' 20.5".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buck.....	.. .. .	172 14 15	4.36861	14.520
Santiago.....	.. .. .	125 47 16	4.42379	16.487

**ELEPHANT, BREWSTER COUNTY, TEX.**

On south edge of Elephant Mountains, 2 miles northeast of Kohernit's ranch.

Station mark: Bronze tablet.

Signal: Rock monument.

[Latitude 30° 00' 31.4". Longitude 103° 31' 53.6".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
San Jacinto.....	55 29 03	235 16 24	4.69630	30.878
Santiago.....	329 51 56	149 55 23	4.34715	13.820

**LA NEGRA, BREWSTER COUNTY, TEX.**

On sharp black peak in flat, 1 mile east of Alpine-Terlingua road, 1 mile north of road to Henderson's ranch.

Station mark: Bronze tablet set at highest point of hill.

Signal: Rock monument.

[Latitude 29° 37' 38.9". Longitude 103° 31' 02.2".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
San Jacinto.....	108 26 00	288 13 00	4.64949	27.723
Santiago.....	203 01 32	23 04 33	4.39826	15.546

**LAVA, BREWSTER COUNTY, TEX.**

On a lava cone 2 miles east of Marathon-Boquillas road and 12 miles south of Annal's ranch.

Station mark: Bronze tablet.

Signal: Rock monument.

[Latitude 29° 52' 24.7". Longitude 103° 14' 23.9".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Santiago.....	76 00 24	255 55 09	4.24388	10.895
Elephant.....	118 06 16	297 57 32	4.50366	19.816

**MITCHELL, BREWSTER COUNTY, TEX.**

On south edge of Mitchell Mesa 2 miles west of Grab Creek.

Station mark: Bronze tablet set under rock monument. Another tablet set 4 feet northwest stamped "5351."

[Latitude 29° 58' 32.4". Longitude 103° 43' 51.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Turney.....	18 24 47	198 23 21	4.16484	9.082
Buck.....	332 35 32	152 39 15	4.41768	16.257

**SHARP ROCK, BREWSTER COUNTY, TEX. (Not occupied.)**

A very sharp rock 200 or 300 feet south of the south edge of mesa and about same elevation. Sighted from two points only.

[Latitude 29° 57' 57.0". Longitude 103° 52' 50.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Turney.....	.. .. .	142 24 39	4.20765	10.023
Mitchell.....	.. .. .	85 43 05	4.16111	9.004

**SHARP WHITE PEAK, BREWSTER COUNTY, TEX. (Not occupied.)**

A sharp white peak on ridge half way between Del Norte and Santiago, being the middle and highest of three peaks on a prominent summit. Sighted from two points only.

[Latitude 29° 53' 49.9". Longitude 103° 24' 16.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Elephant.....	.. .. .	315 11 54	4.24095	10.822
Buck.....	.. .. .	233 15 56	4.38604	15.114

**TURNEY, BREWSTER COUNTY, TEX.**

On summit of gray peak on white ridge 2 miles west of the 0-2 ranch. Other peaks to north are slightly higher.

Station mark. Bronze tablet on highest point of peak.

Signal: Rock monument.

[Latitude 29° 51' 02.0". Longitude 103° 46' 43.1".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
San Jacinto.....	57 54 54	237 49 39	4.30359	12.501
Buck.....	299 17 53	119 23 08	4.28124	11.874

**WHITE ENDS, BREWSTER COUNTY, TEX. (Not occupied.)**

A prominent peak on ridge southeast of Santiago and 4 miles northeast of Black Cap. Peak has noticeable white spots on northwest and southeast sides.

Signal: Highest point of mountain.

[Latitude 29° 45' 15.0". Longitude 103° 18' 34.0".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Buck.....	92 42 19	272 33 30	4.45844	17.856
Carazones.....	21 39 14	201 35 42	4.49558	19.450

**WILSON WINDMILL, BREWSTER COUNTY, TEX. (Not occupied.)**

A windmill on Wilson's ranch.

[Latitude 29° 47' 13.7". Longitude 103° 44' 08.7".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Turney.....	.. ..	329 27 09	3.91175	5.071
Buck.....	.. ..	100 36 00	4.10486	7.910

**Crane, Fort Stockton, Free, Longfellow, Marathon, Monument Springs, Sanderson, Sawyer, Sherwood, and Stiles quadrangles.**

**BREWSTER, IRION, PECOS, REAGAN, TERRELL, AND UPTON COUNTIES.**

During 1919 and 1920 triangulation was extended over the above-named quadrangles by R. M. Wilson, R. B. Steele, and B. H. Yoakum. Starting from stations Chancellor, Madera, Hen, and Sanderson of the U. S. Coast and Geodetic Survey, North American datum, the work was carried north and east and connected with U. S. Geological Survey stations Bolt, Lopez, and Funk, the positions of which on Cisco datum, are published on pages 223 and 224, Bulletin 122.

**ARBUCKLE, PECOS COUNTY, TEX.**

About 25 miles north of Marathon, on road running past Iron Mountains, north down Gillion Canyon, and crossing low divide into "Draw No. 3" past Elmer Taylor's house. Station is about 2 miles south and a little west of Elmer Taylor's house, about 0.50 mile southwest of Arbutle Tank, on a mesa just west of the road. The mesa is in the foothills and overlooks the valley on the northwest. The point is about 100 yards west of the highest point of the mesa.

Station mark: Bronze tablet in solid rock.

Signal: Cairn topped by a branch of cedar, the whole about 10 feet high and centered over station.

[Latitude 30° 31' 46.08". Longitude 103° 11' 41.24".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	<i>Log. meters.</i>	<i>Miles.</i>
Chancellor.....	210 18 57	30 22 17	4.31542	12.846
Madera.....	255 23 36	75 32 12	4.44583	17.345
Glass.....	316 48 01	136 51 44	4.24405	10.899

**BAKER, PECOS COUNTY, TEX.**

About 30 miles by road southeast of Girvin, toward Sheffield, and about 2 miles east of Baker's headquarters ranch. The station is on a small round knob, about 0.25 miles east of the point where the road from Baker's ranch to Pouton Crossing on the river crosses the divide. The station is visible from the ranch.

Station mark: An aluminum tablet set in solid rock about 10 inches below the surface of the ground, surmounted by a pointed rock projecting above the surface.

Signal: Cairn about 7 feet high, standing northwest of the station, azimuth  $140^{\circ} 24'$ , distance 7.6 feet.

[Latitude  $30^{\circ} 52' 52.79''$ . Longitude  $102^{\circ} 03' 51.11''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Corner.....	69	47	34.52	249	41	03.32	4.3346478	13.428
Sherbina.....	80	26	55	260	20	17	4.31730	12.902
Indian.....	115	37	59.98	295	34	28.19	4.0843183	7.545
Pecos.....	166	47	20.00	346	45	32.77	4.3829782	15.008
Murphy.....	227	33	06.05	47	37	59.21	4.3116886	12.736

**BARNHART, IRION COUNTY, TEX.**

About 4.5 miles southeast of Barnhart and 1.2 miles east of Barnhart-Ozona road, on top of flat ridge in Blackstone & Slaughter pasture, S.  $38^{\circ} 30'$  E. about 1 mile from windmill and tank.

Signal: 2 by 4 inch scantling with 3-foot cross targets, centered over station mark and guyed with wire.

Station mark: Aluminum tablet in top of stone set in place and referenced as follows: Stone marked 1+ is S.  $73^{\circ} 30'$  W., 21.70 feet distant; stone marked 2+ is S.  $50^{\circ} 45'$  E., 20.98 feet distant; stone marked 3+ is N.,  $22^{\circ} 00'$  E., 20.83 feet distant.

Instrument on center.

[Latitude  $31^{\circ} 04' 11.80''$ . Longitude  $101^{\circ} 09' 02.72''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Nine-Mile.....	40	50	21.10	220	48	27.81	3.9500161	5.538
Owens.....	100	18	45.69	280	15	43.24	3.9787497	5.917
Hobbs.....	175	37	52	355	37	36	4.02876	6.639
Monte.....	202	13	47.73	22	15	32.06	4.1499645	8.776
Nouges.....	287	48	41.05	107	53	22.02	4.1811351	9.429

**BAR S, REAGAN COUNTY, TEX.**

Is 13.0 miles northwest of Barnhart, 3.5 miles southwest of Bar S headquarters ranch house, 1.75 miles north of road from Bar S ranch to Big Lake. On northern edge of mesa overlooking Concho Valley.

Signal: 4 by 4 inch scantling with cross targets centered over station mark and guyed with wire.

Station mark: Aluminum tablet in top of stone set in place and referenced as follows: Rock marked + is 32.31 feet distant; rock marked + is 33.05 feet distant.

Instrument elevated 8 feet and on center.

[Latitude  $31^{\circ} 15' 50.01''$ . Longitude  $101^{\circ} 18' 08.79''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Cox.....	31	43	17.73	211	40	38.89	4.1888021	9.597
Japson.....	98	20	48.32	278	13	07.86	4.3748626	14.730
Concho.....	153	31	01.39	333	28	04.56	4.3038976	12.510
Sawyer.....	193	02	14.97	13	03	16.46	4.1415669	8.608
Ketchum.....	247	10	09.07	67	18	02.56	4.4171336	16.236
Monte.....	293	00	47.63	113	07	15.35	4.3327271	13.368
Owens.....	345	32	29.87	165	34	09.58	4.3106586	12.706

**BELDING, PECOS COUNTY, TEX. (Not occupied.)**

Is 12 miles southwest of Fort Stockton, 2 miles southeast of Belding, on the Kansas City, Mexico & Orient R. R. The point is on the southeast corner of a high mesa and commands a view east and south from about N. 30° E. to about S. 80° W., the rest of the horizon being obscured by the flat top of the mesa.

Station mark: Drill hole in center of a triangle cut in the outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over the station.

[Latitude 30° 45' 44.96''. Longitude 102° 59' 25.24'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Chancellor.....	48 53 30	228 50 34	4.08451	7.548
Three-Mile.....	238 01 07	58 06 39	4.30566	12.561
Madera.....	338 31 45	158 34 07	4.30596	12.569

**BIG LAKE, REAGAN COUNTY, TEX.**

In the town of Big Lake, at the southeast corner of the large brick school building.

Station mark and signal: A flag pole standing 1 foot diagonally out from the southeast corner of the schoolhouse with its top about 8 feet above the roof of the building.

[Latitude 31° 11' 41.43''. Longitude 101° 27' 47.60'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Carroll.....	15 04 39	195 07 23	3.92395	5.216
Low.....	92 05 39	271 59 06	4.30301	12.484
Japson.....	143 39 27	323 36 47	4.13824	8.543
Cox.....	307 14 59	127 17 19	3.95707	5.629

**BLACKSTONE, TERRELL OR PECOS COUNTY, TEX.**

About 10 miles southwest of Sheffield post office, 4 miles south of Blackstone & Slaughter's headquarters ranch, 4 miles north of "South Camp," Blackstone & Slaughter's old headquarters, 8 miles northeast of Carruther's place, in Independence Draw, 2 miles southeast of Blackstone & Slaughter's "North well" in Surveyors' Canyon, 2 miles east of Sanderson-Sheffield road, which is in Surveyors' Canyon at this point, on highest point of dividing mesa, and 300 yards east of a north-south fence line.

Station is best reached from the west by taking road leading off from Sanderson-Sheffield road in Surveyors' Canyon, following this road east by "North well," thence east and south up canyon to divide, thence northeast through fence line to station.

Station mark: Bronze tablet cemented in rock set flush with ground.

Signal: Quadripod of lumber covered with black and white cloth, and bearing a white flag. Signal centered over station mark.

[Latitude 30° 38' 56.90''. Longitude 101° 57' 48.56'']

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Mitchell.....	25 45 20.06	205 42 44.83	4.2725376	11.638
Corder.....	54 52 58.75	234 44 54.85	4.4916887	19.277
Independence.....	68 08 43	248 06 28	3.88482	4.766
Windmill.....	96 56 47.13	276 49 52.59	4.3384336	13.545
Cedar.....	123 12 03.29	303 05 37.64	4.3802250	14.913
Slaughter.....	141 06 36.67	321 04 50.84	3.9440184	5.462
Oil Derrick.....	301 00 35	121 05 30	4.25512	11.181

**BOLT, IRION COUNTY, TEX.**

Description from Bulletin 122, page 224, as follows:

In Irion County, on northeast end of high flat ridge between Dove and Spring creeks, about 8 miles, W. S. about 20°, from spring at head of Dove Creek and about 3.5 miles north of line between Irion and Schleicher counties.

Signal: Piece of scantling bolted to stump of mesquite tree, stone marked  $\frac{U}{G} + \frac{S}{S}$  is 4 feet S. 65° 53' E., from center of station.

From the above description could not locate stone marked  $\frac{U}{G} + \frac{S}{S}$  but found stump of mesquite tree through which a hole had been bored and a 1 by 12 inch bolt inserted, showing evidence of having been placed there several years before.

Mr. Fayette Tankersly, a resident of this part of the State for 30 years, states that this stump had the signal bolted to it when the engineers were working this territory 20 years ago, and that it was the only signal the engineers had in this vicinity.

Description of new station:

In Irion County, about 6 miles east of Monument, and about 2.5 miles southeast of W. P. Teal's ranch home, on northeast end of high ridge, between Dove and Spring creeks.

Signal: A 2 by 4 scantling with cross targets, centered over station and guyed with wire.

Station mark: Aluminum tablet cemented in stone and referenced as follows: Rock marked 1+ is 24.87 feet distant, 316° 45' magnetic azimuths; rock marked + is 20.09 feet distant, 95° 40'; rock marked 3+ is 23.84 feet distant, 195° 10'.

[Latitude 31° 08' 11.59". Longitude 100° 50' 52.89". Cisco datum, Bull. 122, latitude 31° 08' 19.11"; longitude 100° 50' 47.98".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Monument.....	45	51	01.17	225	49	20.33	3.8578300	4.479
Monte.....	103	39	38.25	283	31	58.73	4.3837553	15.035
Suggs.....	138	33	25.08	318	29	27.55	4.2631553	11.390
Lopez.....	178	54	25.79	358	54	17.25	4.3585343	14.187
Lopez (Cisco datum).....	178	54	29.61	358	54	21.07	4.3584995	14.186

**BROWN (2), TERRELL COUNTY, TEX.**

About 30 miles north along Sheffield road from Dryden, 4 miles east from Brown's headquarters ranch in Big Canyon, 2 miles northeast from Brown's No. 2 well in Big Canyon, 1.5 miles west from Scott's well on mesa, 3 miles west from Dryden-Sheffield road, on high point of mesa which is divide between Big Canyon and Dry Creek drainage, near south end of highest part of mesa, 800 feet west of gate on road leading from Brown's ranch to Scott's ranch.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets of white and black cloth and braced with four guy wires, centered over station mark.

[Latitude 30° 21' 50.69". Longitude 101° 59' 27.30".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
King.....	56	57	33.28	236	53	00.50	4.2362009	10.704
Center.....	123	19	09.39	303	15	22.96	4.1550102	8.879
Mitchell.....	159	30	20.98	339	28	36.42	4.1966017	9.771
Oil Derrick.....	218	56	48	39	02	34	4.45816	17.845

## CARROLL, REAGAN COUNTY, TEX.

Is 7 miles south and a little west of Big Lake and 0.5 mile southeast of the Big Lake-Sheffield road. The station is on the north part of the top of a gradual rise and is 0.75 mile southeast of a gate through which the above-mentioned road passes as it comes up on the mesa from the draw. Carroll's ranch lies about 3 miles east and a little north from the station. A small pile of rocks is centered over the tablet.

Station mark: An aluminum tablet cemented in a boulder set flush with ground.

Signal: A 12-foot 2 by 4 scantling, bearing cross targets, guyed with wire, and centered over the station.

[Latitude  $31^{\circ} 07' 18.66''$ . Longitude  $101^{\circ} 29' 09.61''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Big Lake.....	195	07	23	15	04	39	3.92395	5.216
Cox.....	254	27	10	74	30	13	3.98856	6.052
Last.....	282	42	30	102	46	11	4.06543	7.224

## CASTLE, BREWSTER COUNTY, TEX. (Not occupied.)

About 10 miles northwest of Marathon, on Cathedral Mountain. The highest point of a rather blunt pinnacle of rock approximately 50 feet in diameter near the top, standing as a continuation of the east end of the rock cliff that forms the south side of the top of Cathedral Mountain. The point is not as high as the top of Cathedral Mountain.

Station mark and signal: Highest point of rock.

[Latitude  $30^{\circ} 18' 32.38''$ . Longitude  $103^{\circ} 20' 47.10''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Nation.....	254	24	23	74	35	59	4.58152	23.707
Horse.....	324	07	46	144	14	43	4.57716	23.470
Post.....	337	19	38	157	21	51	4.25651	11.217

## CEDAR, PECOS COUNTY, TEX.

About 30 miles southeast of Girvin and about 2 miles southeast of Shebina's ranch, near an old road running from the ranch east and south over the divide to a "tank." The station is on the highest part of the divide in this vicinity and is about half a mile west of the tank, 85 feet northwest of the road at a point 400 feet southwest from a dim road fork.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground with a pile of rocks about 2 feet high over it.

Signal: A pile of cedar brush 25.1 feet northwest from the station.

[Latitude  $30^{\circ} 46' 03.07''$ . Longitude  $102^{\circ} 10' 23.73''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Windmill.....	8	19	04.90	188	18	35.42	4.0261434	6.599
Tower.....	81	03	36.17	261	00	06.83	4.0422684	6.849
Corner.....	117	35	09.90	297	32	00.37	4.0455126	6.900
Indian.....	178	19	22.93	358	19	13.24	4.2522870	11.108
Slaughter.....	293	17	07.16	113	21	47.14	4.2005237	9.860
Blackstone.....	303	05	37.64	123	12	03.29	4.3802250	14.913



**CENTER, TERRELL COUNTY, TEX.**

Is 40 miles by road northeast of Sanderson and 35 miles southwest of Sheffield, 1 mile east of Sanderson-Sheffield road where it crosses mesa south of Dry Creek, 3 miles northeast of Corder's "55" well in McKay Draw near Anderson-Sheffield road, 0.25 mile south of a very dim road which runs east and west along top of mesa and joins Sanderson-Sheffield road at a point where it breaks over south slope of mesa, 0.25 mile southeast of a natural depression or water hole (dry) beside the road, on a point of mesa which juts out to the south from main mesa.

Station mark: Standard bronze bench-mark tablet cemented in drill hole in a rock set flush with ground.

Signal: Quadripod of lumber, covered with white and black cloth, with white flag over center, centered over station mark.

[Latitude 30° 26' 05.37". Longitude 102° 06' 54.76".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
King.....	8	11	18.98	188	10	32.06	4.2410999	10.826
Russell.....	65	40	19.57	245	33	35.66	4.3692453	14.541
Corder.....	118	34	40.79	298	31	15.33	4.0902116	7.648
Mitchell.....	223	01	04.85	43	03	07.05	3.9740934	5.854
Brown.....	303	15	22.96	123	19	09.39	4.1550102	8.879

**CHANCELLOR, PECOS COUNTY, TEX.**

A station of the U. S. Coast and Geodetic Survey, about 20 miles southwest of Fort Stockton, 3 miles due east from Chancellor station on Kansas City, Mexico & Orient R. R., and near the highest point of a small conical hill locally known as Pikes Peak. The Chancellor-Elsinor ranch road passes 1 mile south of the station.

Station mark: Disk in flat top of rock flush with ground.

Reference mark: Standard disk reference mark wedged in a drill hole in outcrop in bedrock. Mark is 2 inches above ground and 3 meters north of highest point of hill.

[Latitude 30° 41' 25.463". Longitude 103° 05' 09.138".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Arbuckle.....	30	22	17	210	18	57	4.31542	12.846
Rooney.....	205	15	18.48	25	20	00.32	4.5341086	21.255
School.....	200	38	09	40	44	11	4.45958	17.903
Belding.....	228	50	34	48	53	30	4.08451	7.548
Three-Mile.....	234	32	49.03	54	41	15.20	4.5087417	20.049
Round.....	271	32	56	91	41	22	4.42123	16.390
Divide.....	323	22	43	143	27	40	4.41591	16.190
Glass.....	357	07	02	177	07	31	4.48677	19.060
Ord (C. & G. S.).....	39	41	00.25	219	27	56.62	4.8110102	40.22
Beard (C. & G. S.).....	110	14	48.00	290	01	28.59	4.6461849	27.51
Star (C. & G. S.).....	98	16	31.00	277	54	47.71	4.8358451	42.58
Madera (C. & G. S.).....	303	09	27.52	123	14	44.44	4.2964052	12.29
Nation (C. & G. S.).....	339	56	54.99	160	00	37.93	4.5334195	21.22

**CONCHO, REAGAN COUNTY, TEX.**

No description available.

[Latitude 31° 25' 34.99". Longitude 101° 23' 48.71".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Japson.....	44	45	05.15	224	40	20.52	4.3127239	12.767
Stiles.....	87	11	48.95	267	06	01.20	4.2404993	10.961
Sawyer.....	290	26	36.12	110	30	34.88	4.1112824	8.028
Bar S.....	333	28	04.56	153	31	01.39	4.3038976	12.510

## CORDER, TERRELL COUNTY, TEX.

About 30 miles northeast of Sanderson, 15 miles southeast of Free post office, 6 miles southeast of Corder headquarters ranch along Sanderson-Free road, 2 miles east of Dick Corder's ranch, 2 miles south of Corder's "17" well, 1 mile north of Monty & Corder's ranch, on highest part of ridge, 750 feet east of road leading north from Monty & Corder's place to "17" well.

Station mark: Bronze bench-mark tablet cemented in drill hole in rock 10 inches square, set flush with ground.

Signal: A 2 by 4 pole 14 feet high, with cross targets of white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 29' 16.40". Longitude 102° 13' 40.05".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Russell.....	34	02	44.09	213	59	25.06	4.2730771	11.653
Downie.....	92	50	08.33	272	42	51.91	4.3610386	14.269
Free.....	149	45	48	329	43	42	4.11808	8.155
Windmill.....	190	12	24.89	10	13	35.40	4.3184949	12.937
Dean.....	193	09	26	13	10	13	4.03173	6.685
Blackstone.....	234	44	54.85	54	52	58.75	4.4916887	19.277
Mitchell.....	266	37	19.84	86	42	47.79	4.2371737	10.728
Center.....	298	31	15.33	118	34	40.79	4.0902116	7.648
King.....	340	08	39.17	160	11	17.20	4.3906821	15.277

## CORNER, PECOS COUNTY, TEX.

About 20 miles southeast of Girvin, on the most northerly part of the high mesa west of Shebina's ranch, and about 3 miles from the ranch. The station is near a fence corner, being in the southwest corner of Mr. Shebina's spring pasture. There is also a fence forming a T corner a few hundred feet north of this corner and running west. The station is 327.8 feet east of the north and south fence and 105.2 north of the east and west fence. The instrument was set on an 8-foot observing tower in order to see stations Parles, Baker, and Cedar. There is a small pile of rocks over the station.

Station mark: Aluminum tablet cemented into boulder set flush with the ground.

Signal: Twenty-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 30° 48' 49.955". Longitude 102° 16' 34.04".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Tower.....	8	37	19.20	188	36	59.20	3.8410218	4.309
McKenzie.....	74	00	25.17	253	54	07.88	4.3094617	12.671
Square.....	90	38	22	270	34	27	4.08596	7.574
Parks.....	127	48	55.31	303	42	50.92	4.3776045	14.824
Livingston.....	162	11	10.76	342	09	03.83	4.3310450	13.317
Shebina.....	177	05	57	357	05	53	3.60460	2.500
Pecos.....	205	21	59.20	25	26	44.49	4.5354817	21.322
Indian.....	216	09	43.70	36	12	43.59	4.1979385	9.801
Baker.....	249	41	03.32	69	47	34.52	4.3346478	13.428
Cedar.....	297	32	00.37	117	35	09.90	4.0455126	6.900

## COX, REAGAN COUNTY, TEX.

About 7 miles southeast of Big Lake and about 1.5 miles south of the Kansas City, Mexico & Orient R. R. track at point where track crosses the divide east of Big Lake. The station is on a grassy rise near a fence corner, being about 600 feet south of an east and west fence and about 1,500 feet west of a north and south fence.

Station mark: Standard bench-mark post projecting 8 inches above ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 08' 43.30". Longitude 101° 23' 15.37".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Carroll.....	74 30 13	254 17 10	3.98856	6.052
Law.....	102 52 27.52	282 43 34.04	4.4469734	17.391
Big Lake.....	127 17 19	307 14 59	3.95707	5.629
Japson.....	137 11 26.07	317 06 25.30	4.3537886	14.033
Bar S.....	211 40 38.89	31 43 17.73	4.1888021	9.597
Owens.....	290 41 29.92	116 45 47.89	4.1705519	9.202
Last.....	339 18 24	159 19 02	3.74245	3.434

**COW, UPTON COUNTY, TEX.**

About 11 miles northeast of Rankin, about 1 mile southeast of the old Rankin-Stiles road, now no longer used as a first-class road, and about at right angles across the road from a windmill in a large open flat northwest of the road. The station is on the highest part of a low gradual rise that forms the highest point within several miles.

Station mark: Standard iron bench-mark post, projecting 10 inches above ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 20' 12.23". Longitude 101° 50' 44.98".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Nolke.....	16 50 32.95	196 48 24.85	4.3537798	14.032
Kling (2).....	60 12 20.46	240 02 44.73	4.5295724	21.034
Fence.....	231 47 06.24	51 50 05.64	4.0639973	7.200
Japson.....	279 16 57.61	99 26 13.39	4.4572214	17.876
Low.....	312 28 37.63	132 33 58.89	4.3466931	13.805
Gunny.....	335 29 38.74	155 32 18.95	4.2947502	12.249

**DEAN, TERRELL COUNTY, TEX.**

About 50 miles northeast of Sanderson, 10 miles east by road from Free post office, on mesa along south side of Independence Draw, 2 miles southeast from the Mansfield ranch in Independence Draw now occupied by D. Dean, 1 mile east of Corders "little mill" in draw on south side of Independence Draw, half a mile north of road leading from Independence Draw near the Mansfield place, southeast and south over divide to "Dick" Corder's ranch, 20 feet south of an east-west fence line where it crosses highest point of mesa.

Station is best reached from the south by leaving above-mentioned road where it crosses divide, about 0.5 mile southeast of the "little mill," and following highest part of mesa northward to fence line near which station is located.

Station mark: Bench-mark tablet cemented in solid outcropping rock.

Signal: A cedar tree about 10 feet high, with white flag in top and white cloth around bottom, centered over station mark.

[Latitude 30° 34' 56.58". Longitude 102° 12' 08.14".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Corder.....	13 10 13	193 09 26	4.03173	6.685
Windmill.....	187 04 34	7 04 45	4.00398	6.271
Mitchell.....	302 37 08	122 41 50	4.24434	10.907

## DIVIDE, PECOS COUNTY, TEX.

A 3-point station on top of the highest cone-shaped hill in the near vicinity, about 28 miles south of Fort Stockton, and about 1.5 miles east of the Fort Stockton road where the road passes the divide.

Not marked.

[Latitude 30° 30' 06.00". Longitude 102° 55' 26.28".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	"	
Glass.....	55	18	18	235	13	50	<i>Log. meters.</i> 4.23161 <i>Miles.</i> 10.592
Chancellor.....	143	27	40	323	22	43	4.41591 16.190
Madera.....	185	52	26	5	52	46	4.00607 6.301
Tally.....	267	40	53	87	44	37	4.07156 7.327

## DOWNIE, PECOS COUNTY, TEX.

About 30 miles by road north of Sanderson, 15 miles southwest by road from Free post office, on divide between Big Canyon and South Fork of Independence Draw, 500 feet northeast from second-class road which runs from Downie's north well in Big Canyon up over divide into Independence Draw and joins the Sanderson-Fort Stockton road at McGregor's well, 1 mile west of Wakefield's ranch.

Station is near north end of a narrow-topped ridge extending northwest and southeast about 0.5 mile, in McGregor's pasture, and in southwest corner of his holdings, 1 mile southeast of Rachel's south well.

A rock monument 4 feet high is 25 feet north of station.

Station mark: Bronze tablet cemented in solid outcropping rock.

Signal: Quadripod of poles, covered with white and black cloth, with white flag over center. Signal centered over station mark.

[Latitude 30° 29' 52.51". Longitude 102° 28' 00.10".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	"	
Madera.....	103	53	15.06	283	39	38.25	<i>Log. meters.</i> 4.6445023 <i>Miles.</i> 27.406
Rachel.....	135	10	03	315	08	24	3.82272 4.131
McKenzie.....	177	21	29.75	357	21	03.77	4.4686511 18.281
Trent.....	187	21	31	7	22	29	4.37396 14.700
Tower.....	211	24	32.05	31	30	01.65	4.5187990 20.519
Windmill.....	233	51	47.13	54	00	15.27	4.5174156 20.453
Free.....	237	52	33	57	57	44	4.28449 11.963
Corder.....	272	42	51.91	92	50	08.33	4.3610386 14.269

## FENCE, UPTON COUNTY, TEX.

About 17 miles northeast of Rankin and about 2 miles north of a prominent windmill with a large tree standing near it. There is a line fence running north about 0.25 mile west of this tree and windmill, and the station is 2 feet west of this fence at the highest point that the fence passes over.

Station mark: Aluminum tablet cemented in a rock set with its upper face about 2 inches above the ground. A small pile of rocks is centered over the mark.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 24' 04.86". Longitude 101° 45' 00.34".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	"	
Gunny.....	2	09	58.03	182	09	39.41	<i>Log. meters.</i> 4.4000638 <i>Miles.</i> 15.610
Cow.....	51	50	05.64	231	47	06.24	4.0639973 7.200
Stiles.....	263	10	35.23	83	15	50.30	4.2063496 9.993
Japson.....	301	38	05.42	121	44	22.43	4.3524043 13.988
Low.....	341	52	03.59	161	54	26.12	4.3680416 14.501

**FREE, TERRELL COUNTY, TEX.**

About 40 miles north and east by road from Sanderson, 2 miles east from Free post office, 1 mile southeast from nearest point on road leading from Free post office up over mesa north to Harrall's ranch, on highest point of mesa lying between Main Fork and South Fork of Independence Draw, and due north about 1 mile from Kerris well in South Fork of Independence Draw.

Station may be reached in wagon or buckboard by leaving road which runs up over mesa north from F. M. Edwards's well, near Free post office, at a point about 0.25 mile south of where it leaves mesa on north side and following highest part of mesa southeast about 1 mile.

Station mark: Standard bronze tablet cemented in rock set flush with ground.

Signal: Quadripod of poles, covered with white and black cloth, with white flag over center. Signal centered over station mark.

[Latitude 30° 35' 24.55". Longitude 102° 17' 48.12".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Downie.....	57 57 44	237 52 33	4.28449	11.963
Windmill.....	228 20 11	48 23 28	4.13918	8.561
Corder.....	329 43 42	149 45 48	4.11808	8.155

**FLAT, BREWSTER COUNTY, TEX.**

About 9 miles north and a little east of Alpine, 3 miles west of the Alpine-Fort Stockton road, and about 2 miles northwest of Jackson Harmon ranch, on the south end of a short high ridge consisting of three hills.

Station mark: Aluminum tablet on highest part of hill.

Signal: A 20-foot cedar tree in natural position, in azimuth 159° 55' from station, and distant 13.7 feet.

[Latitude 30° 28' 06.03". Longitude 103° 32' 49.63".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Gillion.....	284 20 23	104 27 48	4.38378	15.036
Ord.....	353 03 53	173 04 51	4.40571	15.815

**FORT STOCKTON SCHOOL, PECOS COUNTY, TEX. (Not occupied.)**

High tower and windmill standing beside the high-school building in Fort Stockton. The schoolhouse stands on high ground, and the windmill is the most prominent one in town.

Station mark: Center of tower.

Signal: Tower and windmill.

[Latitude 30° 53' 14.95". Longitude 102° 53' 22.68".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Madera.....	3 56 47	183 56 04	4.51537	20.356
Chancellor.....	40 44 11	220 38 09	4.45958	17.903
Three-Mile.....	292 47 32	112 49 57	3.91122	5.065

## FUNK, IRION COUNTY, TEX.

In Irion County, in Funk's pasture, about 10 or 12 feet east of line of fence through which road from San Angelo to Kiowa Creek passes, and about 2 miles north of the Kiowa Creek road. The gate through which the road goes is about 2 miles west from first house on right of road after crossing Dry Rocky Creek going westward. Signal is at top of 12-foot observing platform. Center of station is marked by a rock sunk in ground, on which is cut "U. S. G. S." (See Bulletin 122, page 223.)

This station was found as described, rock marking station showed evidence of having been disturbed in the last few years, U. S. Geological Survey standard bronze tablet set in old depression that evidently was place of old station mark for several years. Tablet is 115 feet east of new fence line, 17 feet east of old fence line.

Signal: 2 by 4 scantlings nailed together, with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet, cemented in stone set in place, and referenced as follows: Rock marked +30.4 feet distant. Rock marked +32.75 feet distant.

[Latitude  $31^{\circ} 31' 12.88''$ ; Cisco datum, Bull. 122,  $31^{\circ} 31' 20.22''$ . Longitude  $100^{\circ} 48' 52.31''$ ; Cisco datum, Bull. 122,  $100^{\circ} 48' 47.32''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Lopez (Cisco datum).....	10	25	13.80	190	24	02.29	4.3018760	12.452
Lopez.....	10	24	50.42	190	23	38.95	4.3019550	12.454
Ketchum.....	50	41	56.49	230	34	35.59	4.4604851	17.941
Irion.....	85	21	51.32	265	15	45.16	4.2682521	11.524

## GAGE, BREWSTER COUNTY, TEX. (Not occupied.)

About 6 miles southwest of Marathon, on the highest knob of a group of low hills in Gage's pasture, near old road running to Robert's ranch from "The Post."

Signal: Small flat-topped bush on the highest part of the hill.

[Latitude  $30^{\circ} 07' 51.12''$ . Longitude  $103^{\circ} 21' 10.24''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Leonard.....	208	19	39	28	23	16	4.38782	15.176
Nation.....	231	14	11	51	25	56	4.68052	29.776
Horse.....	295	31	01	115	38	07	4.40160	15.666

## GILLION, BREWSTER COUNTY, TEX.

On the last high knob on north end of a high ridge, about 18 miles north and a little east of Marathon. Can be reached from that town by wagon 12 miles to Hess ranch, thence about 6 miles on horseback northwest over into Gillion Canyon and west over a low gap to the foot of the hill. Difficult to climb on horseback.

Station mark: Bronze tablet in solid rock on highest part of last knob.

Signal: Cairn centered over station, about 6 feet in diameter at base and about 8 feet high.

[Latitude  $30^{\circ} 24' 50.56''$ . Longitude  $103^{\circ} 18' 11.28''$ .]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Ord.....	46	42	42	226	36	17	4.44781	17.424
Flat.....	104	27	48	284	20	23	4.38378	15.036
Leonard.....	325	28	54	145	31	07	4.07959	7.463
Horse.....	336	58	39	157	04	16	4.66198	28.532

**GIRVIN, PECOS COUNTY, TEX. (Not occupied.)**

Sighted from two stations only. No description available.

[Latitude 31° 01' 40.24". Longitude 102° 25' 36.62".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Parks.....	26	00	31	205	59	4. 00583	6. 298
Livingston.....	292	55	41	112	58	3. 92995	5. 288

**GLASS, PECOS COUNTY, TEX.**

(Called "Last tree" in previous notes.) About 20 miles northeast of Marathon, about 6 miles northwest of Decie ranch, on the last high knob on northeast end of high ridge of Glass Mountains. Point is on the last high spur running north, overlooking country to north and west, and is not on the highest part of ridge. It is 2 miles west of a tank near the top of the lowest part of the ridge, from which a poor road runs northwest.

Station mark: Bronze tablet in solid rock on highest part of hill.

Signal: Small cairn, with top of a cedar tree in its top, the whole standing about 8 feet high, centered over station.

[Latitude 30° 24' 50.62". Longitude 103° 04' 11.34".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Arbuckle.....	136	51	44	316	48	4. 24405	10. 899
Chancellor.....	177	07	31	357	07	4. 48677	19. 060
Divide.....	235	13	50	55	18	4. 23151	10. 592
Nation.....	278	06	49	98	10	4. 01156	6. 381

**GUNNY, UPTON COUNTY, TEX.**

Approximately 12 miles east of Rankin, about 3 miles south of the railroad section house, on the highest part of the mesa lying south of the Kansas City, Mexico & Orient R. R., just east of a low gap. There is an old road running through this gap and an old road crossing the mesa toward the south, about 1 mile east of the station. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground.

Signal: A 16-foot 2 by 4 scantling with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 10' 29.70". Longitude 101° 45' 36.20".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Nolke.....	76	01	07.19	255	56	4. 1810473	9. 428
Cow.....	155	32	18.95	335	29	4. 2947502	12. 249
Fence.....	182	09	39.41	2	09	4. 4000638	15. 610
Low.....	250	22	47.46	70	25	3. 9404255	5. 417
Mex.....	357	51	15.63	177	51	4. 2280958	10. 506

**HALFF, UPTON COUNTY, TEX.**

About 2 miles north and a little west of Rankin, and about 1,500 feet west of the Rankin-Upland road, being about northwest from the gate and cattle guard through which this road passes approximately 1.5 miles north of Rankin. The station is on the highest part of the mesa, a small pile of rocks being centered over it. (A secondary point.)

# 822 TRIANGULATION AND PRIMARY TRAVERSE, 1916-1918.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.  
Signal: A 20-foot 4 by 4 timber with cross targets, guyed with wire and centered over station.

[Latitude 31° 14' 59.35". Longitude 101° 57' 01.46".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Pecos.....	43	23	44	223	18	21	4.37732	14.814
King (2).....	69	37	36	249	31	16	4.31605	12.865
Nolke.....	344	01	22	164	02	29	4.09555	7.743

## HEN, TERRELL COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey 6 miles by road north of Dryden, 1 mile west of Dryden-Sheffield road, and 100 meters east of old stone quarry.

Station mark: Coast and Geodetic Survey tablet in concrete post.

Reference mark: Coast and Geodetic Survey reference tablet 8.5 meters distant, true azimuth 238° 40'.

[Latitude 30° 07' 06.358." Longitude 102° 07' 01.624".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Russell.....	140	15	53.19	320	09	14.65	4.5194506	20.549
King.....	172	39	17.23	352	38	33.98	4.2546929	11.170
Eldridge (C. & G. S.).....	21	10	13.73	201	08	44.90	4.1192181	8.176
Dryden W. Base (C. & G. S.).....	33	43	34.97	213	42	04.59	3.9394482	5.405
Road (C. & G. S.).....	52	10	39.50	232	05	08.15	4.3511906	13.95
Sanderson.....	113	21	57.14	293	14	54.43	4.3893883	15.23
Hoddy (C. & G. S.).....	274	13	47.92	94	22	55.67	4.4671135	18.22
Peggy (C. & G. S.).....	337	15	30.13	157	18	06.62	4.3363467	13.48

## HOBBS, IRION COUNTY, TEX.

Is 2.5 miles northeast of Barnhart, 1 mile northeast of A. D. Hobbs's ranch house, on top of the highest hill in his pasture.

Signal: A 2 by 4 scantling with cross targets, guyed with wire and centered over station mark.

Station mark: Aluminum tablet stamped, "Texas," cemented in stone set in place and referenced as follows:

Rock marked 1+ is 30.70 feet distant, S. 18° 42' W., true. Rock marked 2+ is 28.55 feet distant, N. 71° 33' W., true. Instrument on center.

[Latitude 31° 09' 57.72". Longitude 101° 09' 33.45".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Owens.....	43	42	20	223	39	39	4.09271	7.692
Monte.....	248	52	17	68	34	17	3.82059	4.111
Barnhart.....	355	37	36	175	37	52	4.02876	6.639

## HOCK, PECOS COUNTY, TEX.

About 25 miles by road southeast from Fort Stockton, 8 miles north of Rachel's headquarters ranch, 2 miles north of Colonel Hock's windmill and tank, 1 mile north of large earth tank in draw on south slope of mesa, on top of mesa near head of main branch of this same draw.

Station is on highest point of mesa between two draws, but a higher point is across flat divide, distant about 1 mile northwest of same mesa.



Station may be reached in car or wagon by turning off road about 0.5 mile northwest of Hock's well and tank just after passing through gate, going north up draw past earth tank, taking a dim road and cattle trail to the left about 0.5 mile past this tank and continuing up point of ridge to top.

Station mark: Drill hole in rock with triangle cut around it, the rock being set in top of a large pile of small crushed rock known as an Indian "Sotol Oven."

Signal: Cairn of rock 5 feet high with large "Spanish Dagger" plant set in top, the whole being about 8 feet high, and with white flags over center. Signal centered over station mark.

[Latitude 30° 39' 50.49". Longitude 102° 34' 30.26".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Madera.....	76	21	58	256	11	4.52327	20.731
McKenzie.....	219	24	24	39	27	4.15256	8.829
Rachel.....	337	21	47	157	23	4.17149	9.222

#### HORSE, BREWSTER COUNTY, TEX.

Situated on the highest part of Horse Mountain, about 13 miles southeast of Marathon railroad station and post office.

Station mark: Bronze tablet cemented in solid rock.

Signal: Cairn centered over tablet.

[Latitude 30° 01' 57.65". Longitude 103° 07' 01.06".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Gage.....	115	38	07	295	31	4.40160	15.666
Ord.....	121	04	09	300	52	4.65081	27.807
Post.....	132	42	31	312	37	4.31416	12.809
Castle.....	144	14	43	324	07	4.57716	23.470
Gillion.....	157	04	16	336	58	4.66198	28.532
Leonard.....	161	05	03	341	01	4.53444	21.271
Stillwell.....	198	34	00	18	36	4.44614	17.358
Nation.....	199	47	47	19	52	4.63747	20.966

#### INDEPENDENCE, TERRELL COUNTY, TEX.

Is 20 miles southwest of Sheffield post office, 3 miles northwest of Curruther's place (Blackstone & Slaughter's), in Independence Draw, 2 miles north of Blackstone & Slaughter's "west well," in Independence Draw; 1 mile west of old road from "west well" to "north well" in Surveyors' Canyon, on highest part of mesa lying north of Independence Draw and west of road. Station is best reached by turning west from this old road at point where it crosses low divide and following highest part of mesa west to station.

Station mark: Drill hole in solid outcropping rock, with triangle cut around it.

Signal: Cedar tree with white flag in top, braced with four guy wires, and centered over station mark.

[Latitude 30° 37' 24.11". Longitude 102° 02' 15.87".]

To station—	Azimuth.			Back azimuth.		Distance.	
	°	'	"	°	'	Log. meters.	Miles.
Windmill.....	110	40	48	290	36	4.19099	9.646
Slaughter.....	189	19	57	9	20	3.99249	6.107
Blackstone.....	248	06	28	68	08	3.88482	4.766

## INDIAN, PECOS COUNTY, TEX.

About 15 miles southeast of Girvin, on the large mesa north of the Fort Stockton-Sheffield road, and west of the Baker ranch. The station is about in the middle of the high part of the mesa, of which the axis runs about east and west, and commands a view north and south, but from the ground the ends of the high part of the mesa obstruct the view east and west. The theodolite was elevated about 8 feet in order to see stations Livingston and Baker.

Station mark: Aluminum tablet cemented in boulder and set flush with the ground. A small pile of rocks is centered over the tablet.

Signal: A 16-foot 4 by 4 scantling, guyed with wire, bearing cross targets, is centered over station.

[Latitude 30° 55' 43.36". Longitude 102° 10' 43.46".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Corner.....	36	12	43.59	216	09	43.70	4.1979385	9.801
Livingston.....	115	50	56.53	295	45	49.01	4.2460119	10.949
Pecos.....	196	29	40.03	16	31	25.17	4.2799091	11.837
Baker.....	295	34	28.19	115	37	59.98	4.0843183	7.545
Cedar.....	358	19	13.24	178	19	22.93	4.2522870	11.108

## IRION, IRION COUNTY, TEX.

Is 14 miles northwest of Arden, and about 8 miles north and 2 miles west of Irion City, 1.5 miles south, 27° 00' east from a windmill and earth tank which is on a road running northwest from Arden. Is 100 feet north of an east-west fence line, near top of flat ridge.

Signal: A 4 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet cemented in stone set in place, and referenced as follows: Rock marked + distant 27.73 feet southeast. Rock marked + distant 27.73 feet southwest.

[Latitude 31° 30' 23.68". Longitude 101° 00' 32.83".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Ketchum.....	12	50	13.03	192	48	57.52	4.2361876	10.704
Rock.....	63	50	32.77	243	48	00.97	3.9318105	5.311
Funk.....	265	15	45.16	85	21	51.32	4.2682521	11.524
Lopez.....	320	41	00.79	140	45	54.56	4.3712161	14.607

## JAPSON, REAGAN COUNTY, TEX.

About 10 miles northwest of Big Lake and about 3 miles northwest of Roy Japson's ranch. The station is on the western one of two low hills, which are the only prominent rises in the vicinity. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

[Latitude 31° 17' 40.90". Longitude 101° 32' 55.64".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Low.....	49	02	31.91	228	58	38.29	4.1983148	9.810
Cow.....	99	26	13.39	279	16	57.61	4.4572214	17.806
Fence.....	121	44	22.43	301	38	05.42	4.3524043	13.988
Stiles.....	166	58	55.62	346	57	53.11	4.1487866	8.753
Concho.....	224	40	20.52	44	45	05.15	4.3127239	12.767
Bar S.....	278	13	07.86	98	20	48.32	4.3748626	14.730
Cox.....	317	06	25.30	137	11	26.07	4.3537886	14.033
Big Lake.....	323	36	47	143	39	27	4.13824	8.543

**KETCHUM, IRION COUNTY, TEX.**

About 17 miles northeast of Barnhart, about 4.5 miles southwest from Irion City; on north edge near west end of highest and most prominent flat-topped peak on Ketchum Mountain.

Signal: A 2 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Aluminum tablet cemented in stone set in place and referenced as follows: Hole drilled in solid rock, 54.3 feet distant, N. 69° 00' W.; hole drilled in solid rock, 37.3 feet distant, N. 38° 00' E.

[Latitude 31° 21' 18.32". Longitude 101° 02' 57.63'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Monte.....	13	07	31.56	193	06	06.81	4.2795966	11.289
Bar S.....	67	18	02.56	247	10	09.07	4.4171336	16.236
Windmill.....	77	31	43	257	26	04	4.24634	10.957
Sawyer.....	99	14	05.32	279	07	12.57	4.3268392	13.188
Rock.....	163	32	17.60	343	31	01.60	4.1329992	8.440
Irion.....	192	48	57.52	12	50	13.03	4.2361876	10.704
Funk.....	230	34	35.59	50	41	56.49	4.4604851	17.941
Lopez.....	274	13	48.44	94	19	56.01	4.2735494	11.665
Suggs.....	326	07	56.25	146	10	14.57	4.1016615	7.853

**KING, TERRELL COUNTY, TEX.**

Is 25 miles by road north from Dryden, 5 miles northeast of King Spring ranch, 0.75 mile east of road from King Spring ranch to Brown headquarters ranch in Big Canyon, on small knoll on mesa, 600 feet east of fence corner, and about 20 feet north of the line of the east-west fence. A dim wagon road leading off from the King Spring-Brown ranch road at a point near where it reaches top of mesa, about 5 miles north of King Spring leads up to corner of fence mentioned above.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets of white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 16' 45.35". Longitude 102° 08' 27.61'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Sanderson.....	68	07	31.14	248	01	10.71	4.3378546	13.527
Russell.....	111	57	50.32	291	51	54.21	4.3078936	12.625
Corder.....	160	11	17.20	340	08	39.17	4.3906821	15.277
Center.....	188	10	32.06	8	11	18.98	4.2410999	10.826
Brown.....	236	53	00.50	56	57	33.28	4.2362009	10.704
Hen.....	352	38	33.98	172	39	17.23	4.2546929	11.170

**KING (2), UPTON COUNTY, TEX.**

On the southeast part of the big mesa lying north of the road between Girvin and Rankin and about halfway between these two towns. The station is on the highest part of the mesa in the near vicinity, about 1 mile west of the southeastern point of the mesa, and about 4 miles southeast of King's ranch, which is on the top of the mesa. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 11' 04.74". Longitude 102° 09' 14.43.".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Livingston.....	41	22	06.60	221	16	11.96	4.4403965	17.130
King's Mill.....	152	50	03	332	49	07	3.78902	3.903
Cow.....	240	02	44.73	60	12	20.46	4.5295724	21.034
Half.....	249	31	16	69	37	36	4.31605	12.865
Nolke.....	281	41	51.58	101	49	17.87	4.3679341	14.497
Pecos.....	343	12	54.90	163	13	54.39	4.0236284	6.561

**KING'S MILL, UPTON COUNTY, TEX. (Not occupied.)**

On the big mesa about halfway between Girvin and Rankin, and north of the Kansas City, Mexico & Orient R. R. The station is the prominent windmill and tower at King's ranch, about 15 miles west of Rankin, and is accessible by road on the east side of the mesa.

Station mark and signal: Windmill and tower.

[Latitude 31° 14' 06.17". Longitude 102° 11' 02.78".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Livingston.....	30	16	47	210	11	48	4.48334	18.910
King (2).....	332	49	07	152	50	03	3.78902	3.903
Pecos.....	339	19	53	159	21	46	4.22467	10.424

**LAST, REAGAN OR CROCKETT COUNTY, TEX.**

Is 8 miles southeast of Big Lake and about 2.5 miles northeast of an old ranch on the Big Lake-Ozona road. There is a windmill and tank 0.5 mile east of the ranch house, and from this tank there is a dim road running northeast. The station is 0.5 mile southeast of this road, on the highest rise in the vicinity, commanding a clear view to the south. A prominent windmill stands 2 miles northwest of the station. A small pile of rocks is centered over the tablet.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground. Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 05' 55.42". Longitude 101° 22' 01.68".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Carroll.....	102	46	11	282	42	30	4.06543	7.224
Low.....	111	19	18	291	09	46	4.49669	19.500
Cox.....	159	19	02	339	18	24	3.74245	3.434
Owens.....	277	30	05	97	33	45	4.05599	7.069

**LEONARD, BREWSTER COUNTY, TEX.**

On the highest part of Mount Leonard, about 10 miles north of Marathon, and about 2 miles south of the Hess ranch. Can be climbed on horseback from the Hess ranch.

Signal mark: A bronze tablet set in solid rock.

Signal: A cairn about 7 feet in diameter and 8 feet high, centered over the station.

[Latitude 30° 19' 29.16". Longitude 103° 13' 56.49".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Gage.....	28	23	16	208	19	39	4.38782	15.176
Ord.....	71	06	55	250	58	09	4.45900	17.879
Gillion.....	145	31	07	325	28	54	4.07959	7.463
Nation.....	251	48	16	71	56	24	4.43368	16.867
Stillwell.....	286	23	31	106	29	48	4.31901	12.953
Horse.....	341	01	34	161	05	03	4.53444	21.271

## LIVINGSTON, PECOS COUNTY, TEX.

Six miles south of Girvin, on the east side of the road running south from Girvin to Sheffield. The station is about half a mile east of the road, on the highest part of the mesa, near the junction of the northwestern wing with the main body of the mesa. There are two small piles of rock as witness marks, in approximate bearings, S. 84° 30' E. and N. 68° 15' W. from the station, and 9 and 13 feet distant, respectively.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 30° 59' 52.44". Longitude 102° 20' 41.17".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Square.....	15	29	39	195	27	49	4.32295	13.071
McKenzie.....	26	35	33.08	206	31	21.60	4.4640341	18.088
Parks.....	64	47	21.76	244	43	23.56	4.1329012	8.433
Twelve-Mile.....	83	09	44.43	262	59	21.40	4.5099118	20.103
Girvin.....	112	58	13	292	55	41	3.92995	5.288
King's Mill.....	210	11	48	30	16	47	4.48334	18.910
King (2).....	221	16	11.96	41	22	06.60	4.4403965	17.130
Pecos.....	243	27	17.04	63	34	11.14	4.3757449	14.760
Indian.....	295	45	49.01	115	50	56.53	4.2460119	10.949
Corner.....	342	09	03.83	162	11	10.76	4.3310450	13.317

## LOPEZ, IRION COUNTY, TEX.

(From Bulletin 122, page 223.) In Irion County, on easternmost of the Lopez peaks, about 6 miles northwest of Sherwood. Road from Sherwood to Komer's ranch passes about 0.5 mile west of station. Signal: Scantling set in pile of rocks. Rock marking station is 6.04 feet S. 62° 58' E. from center.

This station was found as described; the station mark showed no evidence of having been disturbed. U. S. Geological Survey standard tablet was set in place of original station mark, which was rock marked "U. S. G. S."

Supplement to original description as follows.

Signal: A 2 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet cemented in stone set in place and referenced as follows: Solid rock marked + 36.75 feet distant, true azimuth 199° 10'. Solid rock marked + 37.56 feet distant, true azimuth 266° 10'. Instrument on center.

[Latitude 31° 20' 32.81"; Cisco datum, Bulletin 122, 31° 20' 40.27". Longitude 100° 51' 09.36"; Cisco datum, Bulletin 122, 100° 51' 04.44".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Suggs.....	52	09	13.42	232	05	23.74	4.1706024	9.203
Ketchum.....	94	19	56.91	274	13	48.44	4.2735484	11.665
Irion.....	140	45	51.56	320	41	00.79	4.3712161	14.607
Funk.....	190	23	38.95	10	24	50.42	4.3019550	12.454
Bolt.....	358	54	17.25	178	54	25.79	4.3585343	14.187
Bolt (Cisco datum).....	358	54	21.07	178	54	29.61	4.3584995	14.186

## LOW, REAGAN COUNTY, TEX.

Thirteen miles west of Big Lake, about 2 miles south of the Kansas City, Mexico & Orient R. R. track at a point approximately 3 miles west of the grade crossing of the main Rankin-Big Lake road. The station is on the highest part of a point of the mesa, and far enough north on this point to afford a clear view of all low country to the north. There is an old road running along the mesa about 1.5 miles south of the station, which drops into the head of a draw toward Big Lake at a point about due south of the station. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground.

Signal: A 16-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 12' 04.65". Longitude 101° 40' 26.00".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Gunny.....	70	25	28.00	250	22	47.46	3.9404255	5.417
Cow.....	132	33	58.89	312	28	37.63	4.3466931	13.805
Fence.....	161	54	26.12	341	52	03.59	4.3680416	14.501
Stiles.....	199	54	34.90	19	57	26.51	4.4084697	15.915
Japson.....	228	58	38.29	49	02	31.91	4.1983148	9.810
Big Lake.....	271	59	06	92	05	39	4.30301	12.484
Cox.....	282	43	34.04	102	52	27.52	4.4469734	17.391
Last.....	291	09	46	111	19	18	4.49669	19.500

#### McKENZIE, PECOS COUNTY, TEX.

About 30 miles east and a little south of Fort Stockton, about 5 miles east of the McKenzie ranch, on the highest part of the mesa-like divide. A dim road leaving the McKenzie ranch-Anderson ranch road about half a mile east of "Bull tank" and crossing the divide to Mr. Williams's place, passes within a mile of the station, which is northwest along the divide from the point where the road crosses the ridge. The station is about 2 miles north and a little east of "Bull tank" and is about a quarter of a mile east of a north and south fence, on the top of a rounded rise.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground. A pile of rocks about 2 feet high is centered over the station.

Signal: A 24-foot 6 by 6 timber, with cross targets, guyed with wire, standing about north from the station, and distant 4.1 feet.

[Latitude 30° 45' 46.96". Longitude 102° 28' 51.16".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	<i>Log. meters.</i>	<i>Miles.</i>
Rachel.....	7	40	55	187	39	51	4.39619	15.472
Hock.....	39	27	17	219	24	24	4.15256	8.829
Madera.....	65	35	50.75	245	22	36.78	4.6582591	28.288
Three-mile.....	108	40	41.95	288	30	33.08	4.5229418	20.715
Tunis.....	118	25	17	298	18	26	4.38469	15.067
Twelve-mile.....	139	12	26.47	319	06	16.92	4.4663350	18.184
Parks.....	182	02	06.02	2	02	19.92	4.3066250	12.589
Livingston.....	206	31	21.60	26	35	33.08	4.4640341	18.088
Corner.....	253	54	07.88	74	00	25.17	4.3094617	12.671
Tower.....	273	42	36.93	93	48	33.89	4.2696082	11.560
Downie.....	357	21	03.77	177	21	29.75	4.4686511	18.281

#### MADERA, PECOS COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey. About 20 miles south of Fort Stockton, 2 miles southeast of Elsinore Cattle Co.'s headquarters, half a mile east of Fort Stockton-Marathon road, on southeastern one of the two summits of the Sierra Madre Mountains.

Surface station mark: Standard disk reference mark wedged in a drill hole in outcropping bedrock.

Reference mark: Standard disk reference mark wedged in a drill hole in outcropping bedrock. Reference mark is on southwest edge of ridge, 1 meter lower than station, and about 2 meters above the ground.

[Latitude 30° 35' 33.588". Longitude 102° 54' 47.326".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Divide.....	5	52	46	185	52	26	4.00607	6.301
Arbuckle.....	75	32	12	255	23	36	4.44583	17.345
Belding.....	158	34	07	338	31	45	4.30596	12.569
Rooney.....	177	23	05.68	357	22	28.88	4.6212431	25.977
Stockton.....	177	36	38	357	36	11	4.50306	19.788
School.....	183	56	04	3	56	47	4.51537	20.356
Three-Mile.....	198	17	53.55	18	21	01.29	4.4926987	19.322
Tunis.....	213	20	17	33	26	42	4.56135	22.631
Round.....	224	12	04	44	15	12	4.14865	8.750
Scarboro.....	231	57	58	52	03	31	4.34314	13.693
McKenzie.....	245	22	36.78	65	35	50.75	4.6582591	28.288
Downie.....	283	39	38.25	103	53	15.06	4.6445023	27.406
Tally.....	311	49	08	131	52	33	4.15879	8.957
Hock.....	256	11	35	76	21	58	4.52327	20.731
Rachel.....	278	31	21	98	43	33	4.58635	23.972
Nation (C. & G. S.).....	12	57	20.79	192	55	47.84	4.3385909	13.55
Chancellor (C. & G. S.).....	123	14	44.44	303	09	27.52	4.2964052	12.29
Pyle (C. & G. S.).....	317	42	33.50	137	49	51.56	4.5349776	21.30

**MEX, CROCKETT COUNTY, TEX.**

About 20 miles southeast of Rankin, near the road running east from Nolke's ranch toward Ozona. The station is on the high part of the mesa at the head of the canyon heading up southwest from an earth tank, which is near the road, about 8 miles east of Nolke's ranch, and just around the northeast point of the big mesa. The station can also be reached by way of the first big canyon that is west of the point of the mesa about 6 miles from Nolke's ranch and heads up south into the mesa, the station being at the head of the first big east fork of the canyon and about 2 miles from the road. The station is on the highest part of the divide between these two canyons, on the northeast edge of a flat-topped rise. A small pile of rocks is centered over the station.

Station mark: An iron bolt cemented in a drill hole in a boulder set flush with the ground.

Signal: A 14-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 01' 21.06". Longitude 101° 45' 12.34".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Murphy.....	82	53	44.23	262	49	01.54	4.1663369	9.114
Nolke.....	130	45	06.42	310	40	07.17	4.3068397	12.595
Gunny.....	177	51	27.96	357	51	15.63	4.2280958	10.506

**MITCHELL, TERRELL COUNTY, TEX.**

About 45 miles by road northeast of Sanderson, 30 miles southwest of Sheffield, 1.5 miles east of Sanderson-Sheffield road, 3 miles south of Alex. Mitchell's ranch, on highest part of mesa lying east of Sanderson-Sheffield road and between Independence Draw and Dry Creek; station is 700 feet northwest of second gate on dim road leading east from Sanderson-Sheffield road to Mitchell's Dry Creek Mill.

Station mark: Standard bronze tablet cemented in drill hole in rock 10 inches square set flush with ground.

Signal: Cedar tree 12 feet high, with white flag in top, braced with 4 guy wires, and centered over station mark.

[Latitude 30° 29' 48.99". Longitude 102° 02' 53.75".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Center.....	43	03	07.05	223	01	04.85	3.9740934	5.854
Corder.....	86	42	47.79	266	37	19.84	4.2371737	10.728
Dean.....	122	41	50	302	37	08	4.24434	10.907
Windmill.....	145	16	09.36	325	11	51.03	4.3751464	14.740
Blackstone.....	205	42	44.83	25	45	20.06	4.2725376	11.638
Oil Derrick.....	252	04	48	72	12	17	4.39368	15.382
Brown.....	339	28	36.42	159	30	20.98	4.1966017	9.771

**MONTE, IRION COUNTY, TEX.**

About 8 miles northeast of Barnhart, about 6 miles northwest of W. M. Nolke's residence, 400 feet north of road running northwest, and on the north end of high ridge in McMullin's pasture; take road east 3.5 miles then the left-hand road to station.

Signal: Cross targets 3 feet square at top of 12-foot observing platform and centered over station mark.

Station mark: Aluminum tablet set in solid rock and referenced as follows: Hole drilled in rock 26.9 feet distant, S. 85° 00' W.; hole drilled in rock 22.95 feet distant, N. 13° 30' E.

Theodolite elevated 17 feet and centered over station mark.

[Latitude 31° 11' 16.30". Longitude 101° 05' 40.90".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Barnhart.....	22	15	32.06	202	13	47.73	4.1499645	8.776
Owens.....	52	19	54.70	232	15	07.58	4.2693610	11.553
Hobbs.....	68	34	17	248	32	17	3.82059	4.111
Bar S.....	113	07	15.35	293	00	47.63	4.3327271	13.368
Ketchum.....	193	06	06.81	13	07	31.56	4.2795966	11.829
Suggs.....	234	40	46.61	54	44	29.24	4.1438110	8.653
Bolt.....	283	31	58.73	103	39	38.25	4.3837553	15.035
Monument.....	300	12	53.59	120	18	51.90	4.3273798	13.305
Nouges.....	332	49	49.88	152	52	47.06	4.2992614	12.377

**MONUMENT, IRION OR SCHLEICHER COUNTY, TEX.**

About 3.5 miles southeast of Monument, a flag station 14.5 miles east of Barnhart, on the Kansas City, Mexico & Orient R. R. The station is in W. M. Nolke's pasture, on ridge covered with cedar brush, at head of big draw running northwest.

Station mark: Aluminum tablet set in stone flush with surface of ground.

Reference marks as follows: Stone marked 1+, 27.0 feet distant, true azimuth 180° 58'; stone marked 2+, 31.4 feet distant, true azimuth 255° 37'; stone marked 3+, 27.0 feet distant, true azimuth 343° 17'.

Signal: A 2 by 4 inch scantling, with cross targets, centered over station mark, and guyed with wire.

[Latitude 31° 05' 28.52". Longitude 100° 54' 08.03".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Nouges.....	52	56	02.48	232	53	01.93	4.0656116	7.227
Monte.....	120	18	51.90	300	12	53.59	4.3273798	13.205
Suggs.....	159	37	05.78	339	34	49.42	4.3012553	12.434
Bolt.....	225	49	20.33	45	51	01.17	3.8578300	4.479



**MURPHY, CROCKETT COUNTY, TEX.**

About 16 miles south of Rankin, on a draw heading up from Nolke's ranch past two windmills and a cement-block tank. A road runs south up this draw from the Nolke ranch about 5 miles to an earth tank, the station being about 2 miles farther south, at the head of the west fork of the draw, and on the highest part of the divide in the near vicinity. There is another high part of the divide at the head of the east fork of the draw, to the east of which the divide drops in a lower gap, and which is about 0.75 mile southeast of the station. A small pile of rocks is centered over the station, which is the top of an Indian mound of small rocks, about 2 feet higher than the surrounding ground.

Station mark: Aluminum tablet cemented in a boulder, set flush with top of mound.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

[Latitude 31° 00' 21.83". Longitude 101° 54' 20.98'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Baker.....	47	37	59.21	227	33	06.05	4.3116888	12.736
Pecos.....	115	12	13.54	295	05	32.05	4.3379500	14.168
Nolke.....	176	52	30.32	356	52	14.32	4.1780188	9.362
Mex.....	262	49	01.54	82	53	44.23	4.1663369	9.114

**NATION, PECOS COUNTY, TEX.**

A station of the United States Coast and Geodetic Survey. Near Marathon-Fort Stockton road about 15 miles north from Marathon, 1 mile north from the Pumpkin Center schoolhouse, three-fourths of a mile east of the Marathon-Fort Stockton road, on prominent rounded knob at southeast end of range of hills.

Surface station mark: Standard disk station mark wedged in a drill hole in a boulder.

Underground station mark: Standard disk station mark wedged in a drill hole.

Reference mark: Standard disk reference mark wedged in a drill hole in a boulder.

Reference mark flush with the ground on eastern slope; 1.5 meters lower than station.

° [Latitude 30° 24' 03.421". Longitude 102° 57' 50.479'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Horse.....	19	52	24	199	47	47	4.63747	26.966
Stillwell.....	22	05	36	202	03	46	4.18982	9.620
Post.....	48	05	58	227	56	35	4.60365	24.946
Gage.....	51	25	56	231	14	11	4.68052	29.776
Leonard.....	71	56	24	251	48	16	4.43368	16.887
Castle.....	74	35	59	254	24	23	4.58152	23.707
Glass.....	98	10	02	278	06	49	4.01156	6.381
Talley.....	233	18	02	53	22	54	4.28080	12.110
Ord (C. & G. S.).....	71	34	58.88	251	18	17.17	4.7475357	34.74
Chancellor (C. & G. S.).....	160	00	37.93	339	56	54.99	4.5334195	21.22
Madera (C. & G. S.).....	192	55	47.84	12	57	20.79	4.3385009	13.55
Fyle (C. & G. S.).....	278	19	29.89	98	28	19.34	4.4510478	17.56
Brown (C. & G. S.).....	357	41	30.79	177	41	51.52	4.4365518	16.98

**NINE-MILE, CROCKETT COUNTY, TEX.**

Is 9 miles south of Barnhart, 500 feet southwest of mile post, 9,250 feet west of Barnhart-Ozona highway, in Owen's pasture.

Signal: A 2 by 4 scantling, with cross targets, centered over station mark, and guyed with wire.

Station mark: Aluminum tablet cemented in stone set in place and referenced as follows: Rock marked +, 22.9 feet distant, true azimuth 177° 56'; rock marked +, 21.91 feet distant, true azimuth 257° 51'.

Theodolite elevated 8 feet.

[Latitude 31° 00' 32.79". Longitude 101° 12' 42.43".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Owens.....	157	13	52.81	337	12	43.84	3.9618723	5.691
Barnhart.....	220	48	27.81	40	50	21.10	3.9500161	5.538
Nouges.....	264	03	08.76	84	09	42.70	4.3093075	12.666

**NOLKE, UPTON COUNTY, TEX.**

About 6 miles south of Rankin, at the head of the draw running north from the Nolke Ranch, being about 4 miles northwest of the ranch. The station is on the most northeasterly of a series of prominent rises, or humps, on the highest part of the mesa. It can be reached either by way of the draw from Nolke's ranch or from the point where the road from Rankin to Nolke's ranch crosses the divide, thence southwest along the divide about 3 miles to the station. A small pile of rocks is centered over the station, which is about in the center of the top of the hump.

Station mark: Aluminum tablet, cemented in a boulder, set flush with the ground.

Signal: A 20-foot 2 by 4, with cross targets, guyed with wire, and cemented over the station.

[Latitude 31° 08' 30.34". Longitude 101° 54' 51.98".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Pecos.....	74	55	24.33	254	48	58.07	4.3120707	12.747
King (2).....	101	49	17.87	281	41	51.58	4.3679341	14.497
Half.....	164	02	29	344	01	22	4.09555	7.743
Cow.....	196	48	24.85	16	50	32.95	4.3537998	14.032
Gunny.....	255	56	19.63	76	01	07.19	4.1810473	9.428
Mex.....	310	40	07.17	130	45	06.42	4.3068397	12.595
Murphy.....	356	52	14.32	176	52	30.32	4.1780188	9.362

**NOUGES, CROCKETT COUNTY, TEX.**

Is 11 miles southeast of Barnhart, 1.5 miles southeast of Wm. Nouges's ranch house, in "O 9" pasture near head of big draw running northwest, on top of long flat ridge. To reach station, go through gate on right, follow road to Nouges's house.

Signal: A 2 by 4 scantling with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet cemented in rock set in place, and referenced as follows: Stone marked + is 30.39 feet, true azimuth 113° 17'; stone marked + is 30.80 feet, true azimuth 218° 41'.

[Latitude 31° 01' 40.75". Longitude 100° 59' 57.96".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Nine-Mile.....	84	09	42.70	264	03	08.76	4.3093075	12.666
Barnhart.....	107	53	22.02	287	48	41.05	4.1811351	9.429
Monte.....	152	52	47.06	332	49	49.88	4.2992614	12.377
Monument.....	232	53	01.93	52	56	02.48	4.0656116	7.227

**OIL DERRICK, CROCKETT COUNTY, TEX. (Not occupied.)**

Is 15 miles south of Sheffield post office, on the Cannon lease. This is a Standard Oil derrick apparently on top or near to top of high mesa on the Cannon holdings. Station not visited, all sights taken to center of derrick.

[Latitude 30° 33' 55.51". Longitude 101° 48' 09.85".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Brown.....	39 02 34	218 56 48	4.45816	17.845
Mitchell.....	72 12 17	252 04 48	4.39368	15.382
Blackstone.....	121 05 30	301 00 35	4.25512	11.181

**OWENS, CROCKETT COUNTY, TEX.**

Is 8 miles southwest of Barnhart, 1.5 miles south of road from Barnhart to Clint Owens's ranch house, in Owens's pasture on top of low flat-topped ridge.

Signal: A 2 by 4 scantling with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet, cemented in rock set in place and referenced as follows: Rock marked + is 30.55 feet distant; rock marked + is 26.95 feet distant.

[Latitude 31° 05' 07.02". Longitude 101° 14' 56.17".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Last.....	97 33 45	277 30 05	4.05599	7.069
Cox.....	116 45 47.89	296 41 29.92	4.1705519	9.202
Bar S.....	165 34 09.58	345 32 29.87	4.3106586	12.706
Hobbs.....	223 39 39	43 42 20	4.09271	7.692
Monte.....	232 15 07.58	52 19 54.70	4.2693610	11.553
Barnhart.....	280 15 43.24	100 18 45.69	3.9787497	5.917
Nine-Mile.....	337 12 43.84	157 13 52.81	3.9618723	5.691

**PARKS, PECOS COUNTY, TEX.**

About 12 miles southwest of Girvin, on the large mesa south of the Livingston headquarters ranch. The station is on the point of the mesa east of the big draw running south of the Livingston ranch, and is about 3 miles from the ranch house. It is set on the highest part of this point of the mesa, and is as far south as it is possible to go and still see the top of the small prominent isolated mesa about 5 miles northeast.

Station mark: Aluminum tablet set in the top of a boulder, about 3 inches above the surface of the ground, and covered with a small pile of rocks.

Signal: A 20-foot 2 by 4 scantling with cross targets, guyed with wire, and centered over station.

[Latitude 30° 56' 44.43". Longitude 102° 28' 24.05".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
McKenzie.....	2 02 19.92	182 02 06.02	4.3066250	12.589
Twelve-Mile.....	95 29 55.16	275 23 30.69	4.2995046	12.384
Girvin.....	205 59 05	26 00 31	4.00583	6.298
Livingston.....	244 43 23.56	64 47 21.76	4.1329012	8.438
Shebna.....	299 32 28	119 38 29	4.33142	13.328
Corner.....	307 42 50.92	127 48 55.31	4.3776045	14.824
Square.....	335 13 15	155 15 24	4.20269	9.909

**PECOS, UPTON OR CROCKETT COUNTY, TEX.**

About 15 miles east and a little north of Girvin, on the middle part of the first big mesa east of Girvin, between the Pecos River and the Kansas City, Mexico & Orient R. R. From the station there is a clear view northeast, and the town of Rankin is visible, approximately N. 50° E., and appears a few degrees to the left of a small high isolated mesa about 2 miles distant. The station is on a low stony rise; there are two

small piles of rock as witness marks in approximate bearings S. 49° 10' E. and S. 69° 40' W. from station, and distant 18.3 feet and 20.9 feet, respectively.

Station mark: Aluminum tablet set in the top of a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 05' 36.46'' Longitude 102° 07' 19.38'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
Indian.....	16	31	25.17	196	29	40.03	4.2799091	11.837
Corner.....	25	26	44.49	205	21	59.20	4.5354817	21.322
Livingston.....	63	34	11.14	243	27	17.64	4.3757449	14.760
King's Mill.....	159	21	46	339	19	53	4.22467	10.424
King (2).....	163	13	54.39	343	12	54.90	4.0236284	6.561
Half.....	223	18	21	43	23	44	4.37732	14.814
Nolke.....	254	48	58.07	74	55	24.33	4.3120707	12.747
Murphy.....	295	05	32.05	115	12	13.54	4.3579590	14.168
Baker.....	346	45	32.77	166	47	20.00	4.3829782	15.008

#### POST, BREWSTER COUNTY, TEX.

From Marathon south and a little west about 4 miles, and about 1 mile east of old Fort Pena, Colorado, locally known as "The Post." Up over a low rocky hill south-east of the Marathon-Del Norte road.

Station mark: Bronze tablet set in solid rock.

Signal: Cairn of about 5 feet base and 6 feet high, centered over station.

[Latitude 30° 09' 31.38'' Longitude 103° 16' 27.14'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
Castle.....	157	21	51	337	19	38	4.25651	11.217
Nation.....	227	56	35	48	05	58	4.60365	24.946
Horse.....	312	37	47	132	42	32	4.31416	12.809

#### RACHEL, PECOS COUNTY, TEX.

About 12 miles west by road from Free post office, 2 miles east from Rachel's headquarters ranch, 2 miles east from Rachel's "South" well in head of Independence Draw.

Station is on north slope of high point of ridge about 0.75 mile south of point on Free-Fort Stockton road where it passes over divide between Free post office and Rachel ranch, near north edge of cedar brush which covers top of ridge, and about 100 feet west from a plain cattle trail running north over top of ridge.

Station mark: Standard bronze tablet cemented in top of rock about 8 inches square and set flush with ground.

Signal: Built of poles and cedar brush wired together, with white flag over top, the whole being about 10 feet high, and braced with four guy wires. Signal centered over station mark.

[Latitude 30° 32' 25.58'' Longitude 102° 30' 55.96'']

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	''	°	'	''	Log. meters.	Miles.
Madera.....	98	43	33	278	31	21	4.58635	23.972
Hock.....	157	23	36	337	21	47	4.17149	9.222
McKenzie.....	187	39	51	7	40	55	4.39619	15.472
Downie.....	315	08	24	135	10	03	3.82272	4.131

**ROCK, IRION COUNTY, TEX.**

Is 8 miles northwest of Arden, 2 miles north of road following Middle Concho River, on top of high ridge, at head of big draw which intersects the above-named road 0.5 mile east of Evans's ranch house.

Signal: Two pieces of 2 by 4 scantling nailed together, with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet stamped "Texas," cemented in stone set in place, and referenced as follows: Rock marked + distant 30.50 feet, true azimuth 299° 12'; rock marked + distant 31.35 feet, true azimuth 10° 00'.

[Latitude 31° 28' 21.25". Longitude 101° 05' 23.44".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Windmill.....	38	25	58	218	21	44	4.33243	13.359
Sawyer.....	60	37	05.27	240	31	27.86	4.2927134	12.192
Irion.....	243	48	00.97	63	50	32.77	3.9318105	5.311
Ketchum.....	343	31	01.60	163	32	17.60	4.1329992	8.440

**ROONEY, PECOS COUNTY, TEX.**

About 7 miles a little west of north of Fort Stockton, about 3 miles west of the Fort Stockton-Grand Falls road, on the highest part of a prominent cone-shaped knob that stands about 100 feet higher than the surrounding flat country. The foot of this knob can be easily reached by auto, by turning off from the Grand Falls road and passing through the old Frank Rooney ranch.

Station mark: Bronze tablet cemented in outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over tablet.

[Latitude 30° 58' 09.74". Longitude 102° 55' 59.20".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Chancellor.....	25	20	00.32	205	15	18.48	4.5341086	21.255
Twelve-Mile.....	271	41	06.05	91	48	53.07	4.3820106	14.975
Tunis.....	297	19	45	117	26	48	4.39235	15.336
Three-Mile.....	316	21	13.72	136	24	59.43	4.2281858	10.508
Stockton.....	356	39	02	176	39	13	3.99832	6.190
Madera.....	357	22	28.88	177	23	05.68	4.6212431	25.977

**ROUND, PECOS COUNTY, TEX.**

About 15 miles south and a little east of Fort Stockton, on a flat-topped hill standing alone just northwest of the end of a large mesa running toward the east. The hill is not quite as high as the highest part of the mesa at a point several miles east, known locally as "Round Mountain." Can be reached by road southwest from the Martin ranch, or from the Marathon-Fort Stockton road east past the "Six Shooter" wells.

Station mark: Aluminum tablet cemented in solid rock, on highest part of the hill.

Signal: Cairn about eight feet high centered over tablet.

[Latitude 30° 41' 01.26". Longitude 102° 48' 38.50".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Madera.....	44	15	12	224	12	04	4.14865	8.750
Chancellor.....	91	41	22	271	32	56	4.42123	16.390
Three-Mile.....	179	53	39	359	53	36	4.28843	12.072
Talley.....	357	21	53	177	22	10	4.29507	12.258

## RUSSELL, TERRELL COUNTY, TEX.

Is 20 miles by road north from Sanderson, 7 miles northeast of "41" well on Sanderson-Free road, 3 miles south from Russell's "Big Canyon" ranch in Big Canyon on Sanderson-Free road, on divide between Big Canyon drainage and drainage southeast into Meyer Canyon, on top of high ridge on east side of canyon which opens into Big Canyon, about 1 mile east of Big Canyon ranch, and about 1 mile north from the main head of this canyon. Point on which station is located may be seen from the intersection of Sanderson-Free and Sanderson-Sheffield roads by looking south up canyon and over point of low ridge which runs east from Big Canyon ranch and is about 5 miles distant from this point. Station is best reached from Big Canyon ranch by taking old road leading east along north side of field fence and turning south up first canyon, following this about 2 miles, and turning east to top of ridge. Station is on highest point.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets covered with white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 20' 51.62". Longitude 102° 20' 13.15".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Sanderson.....	4	50	36.46	184	50	11.36	4.1078092	9.798
Corder.....	213	59	25.06	34	02	44.09	4.2730771	11.653
Center.....	245	33	35.66	65	40	19.57	4.3692453	14.541
King.....	291	51	54.21	111	57	50.32	4.3078936	12.625
Hen.....	320	09	14.65	140	15	53.19	4.5194506	20.549

## SAWYER, IRION OR REAGAN COUNTY, TEX.

Is 21 miles north of Barnhart, 8 miles north of Bar S headquarters ranch house, 20 miles northeast of road running from Bar S headquarters northwest, on top of high flat ridge in Bar S pasture.

Signal: A 2 by 4 scantling, with cross targets, centered over station mark, and guyed with wire.

Station: Bronze tablet cemented in stone, set in place, and referenced as follows: Rock marked + is 31.70 feet distant, true azimuth 255° 39'; rock marked + is 31.95 feet distant, true azimuth 344° 52'.

[Latitude 31° 23' 08.23". Longitude 101° 16' 10.51".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Bar S.....	13	03	16.46	193	02	14.97	4.1415669	8.608
Concho.....	110	30	34.88	290	26	36.12	4.1112824	8.028
Rock.....	240	31	27.86	60	37	05.27	4.2927134	12.192
Ketchum.....	279	07	12.57	99	14	05.32	4.3268392	13.188
Windmill.....	332	31	53	152	33	07	3.90968	5.047

## SCARBORO, PECOS COUNTY, TEX.

The station is about 15 miles southeast of Fort Stockton, and about 200 yards northeast of the Fort Stockton-Sanderson road, where the road enters a group of low hills, between two mesa-like points bounded by rim rock. The station is on the highest part of the northeastern of these two points.

Station mark: Aluminum tablet cemented in outcrop of solid rock.

Signal: Low pile of rocks, surmounted by a temporary frame and cloth signal, centered over the tablet.

[Latitude 30° 42' 54.04". Longitude 102° 43' 55.01".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Madera.....	52 03 31	231 57 58	4.34314	13.693
Three-Mile.....	154 37 38	334 35 12	4.24703	10.974

**SHEBINA, PECOS COUNTY, TEX. (Not occupied.)**

About 16 miles southeast of Girvin, about 3 miles southwest of a main-road fork at a cement culvert, where the road from Girvin to Shebina's ranch crosses the Fort Stockton-Sheffield road, on the northeast end of the highest flat-topped hill of a mesa-like ridge.

Station mark: Drill hole in the center of a triangle chiseled in a solid rock.

Signal: Cairn about 8 feet high centered over the station.

[Latitude 30° 51' 00.47". Longitude 102° 16' 41.73".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Parks.....	119 38 29	299 32 28	4.33142	13.328
Baker.....	260 20 17	80 26 55	4.31730	12.902
Corner.....	357 05 53	177 05 57	3.60460	2.500

**SLAUGHTER, PECOS OR TERRELL COUNTY, TEX.**

About 10 miles west of Sheffield post office, 5 miles northwest of Blackstone & Slaughter's headquarters ranch, 1 mile north of their "New well," 0.5 mile west of road leading from this well north over divide into Hackberry Canyon, on top of a small knoll on dividing mesa between Hackberry Canyon and canyon in which Blackstone & Slaughter's headquarters ranch is located. Is 200 feet south of an east-west fence line which crosses above-mentioned road about 100 yards north of highest point on divide.

Station is best reached from the south by taking second-class road leading off from Sanderson-Sheffield road at forks of canyon about 1 mile west of Blackstone & Slaughter's headquarters ranch, take right-hand road at "New well" and follow this north over divide to fence then west along fence to station.

Station mark: Standard bronze tablet cemented in solid outcropping rock.

Signal: A 2 by 4 scantling 12 feet high, with cross targets of black and white cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 42' 39.05". Longitude 102° 01' 15.97".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Independence.....	9 20 28	189 19 57	3.99249	6.107
Windmill.....	75 20 51.64	255 15 42.59	4.2216624	10.352
Cedar.....	113 21 47.14	293 17 07.16	4.2005237	9.860
Blackstone.....	321 04 50.84	141 06 36.67	3.9440184	5.462

**SQUARE, PECOS COUNTY, TEX. (Not occupied.)**

About 30 miles east of Fort Stockton, 5 miles southeast of Park's ranch, and 3 miles south of the Fort Stockton-Sheffield road. The station is on the highest part of a north wing of the main mesa, which is the highest point in the vicinity.

Station mark: Bronze tablet driven in the stump of a cedar tree.

Signal: Pile of cedar brush centered over station.

[Latitude 30° 48' 54.19". Longitude 102° 24' 12.59".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Parks.....	155 15 24	335 13 15	4.20269	9.909
Livingston.....	195 27 49	15 29 39	4.32295	13.071
Corner.....	270 34 27	90 38 22	4.08596	7.574

**STILES, REAGAN COUNTY, TEX.**

Two miles northwest of the town of Stiles, the county seat of Reagan County, and about 0.25 mile west of the Stiles-Grand Falls road. Station is the old unused windmill tower standing at the middle of the north side of an old earth tank, or reservoir.

Station mark: Center of well casing.

Signal: Old windmill tower, centered over the station.

[Latitude 31° 25' 06.50". Longitude 101° 34' 55.77".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Low.....	19 57 26.51	199 54 34.90	4.4084697	15.915
Fence.....	83 15 50.30	263 10 35.23	4.2063496	9.993
Concho.....	267 06 01.20	87 11 48.95	4.2464993	10.961
Japson.....	346 57 53.11	166 58 55.62	4.1487866	8.753

**STOCKTON, PECOS COUNTY, TEX. (Not occupied.)**

About 2 miles west of Fort Stockton, on a low flat-topped hill, on the eastern slope of which is a quarry. The point is on the highest part of the eastern side of the hill, just at the upper edge of the quarry. There is a windmill a few hundred feet northeast of the station, whose top is at about the same elevation as the top of the signal, though it stands on much lower ground.

Station mark: Drill hole in the center of a triangle cut in the outcrop of solid rock.

Signal: Cairn about 6 feet high centered over station.

[Latitude 30° 52' 46.82". Longitude 102° 55' 37.29".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Rooney.....	176 39 13	356 39 02	3.99832	6.190
Three-Mile.....	281 41 08	101 44 42	4.05404	7.037
Madera.....	357 36 11	177 36 38	4.50306	19.788

**SUGGS, IRION COUNTY, TEX.**

Is 18 miles northeast of Barnhart, in Suggs's pasture, 0.8 mile northeast of Suggs's "South Line tank and windmill," on flat-topped short ridge.

Signal: A 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

Station mark: Aluminum tablet in top of rock, set in place, and referenced as follows: Rock marked + 23.3 feet distant, true azimuth 184° 18'; rock marked + 25.0 feet distant, true azimuth 300° 54'.



[Latitude 31° 15' 37.52". Longitude 100° 58' 31.44".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Monte.....	54	44	29.24	234	40	46.61	4.1438110	8.653
Ketchum.....	146	10	14.57	326	07	56.25	4.1016615	7.853
Lopez.....	232	05	23.74	52	09	13.42	4.1706024	9.203
Bolt.....	318	29	27.55	138	33	25.08	4.2631553	11.390
Monument.....	339	34	49.42	159	37	05.78	4.3012553	12.434

**TALLEY, PECOS COUNTY, TEX.**

About 30 miles south of Fort Stockton and about 2.5 miles southeast of Tom Talley's ranch. The point is on the highest flat-topped hill in the near vicinity, on the northern end of the flat top, overlooking all country to the north.

Station mark: An aluminum tablet cemented in solid rock.

Signal: A piñon tree, with brush piled around its base, and so trimmed as to make a cone-shaped pile. It is distant 15.6 feet from the station, in azimuth 92° 42' (west of station).

[Latitude 30° 30' 21.31". Longitude 102° 48' 04.48".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Nation.....	53	22	54	233	18	02	4.28980	12.110
Divide.....	87	44	37	267	40	53	4.07156	7.327
Madera.....	131	52	33	311	49	08	4.15879	8.957
Round.....	177	22	10	357	21	53	4.29507	12.258

**THREE-MILE, PECOS COUNTY, TEX.**

About 4 miles southeast of Fort Stockton, on the highest part and approximately in the center of "Three-Mile Mesa." The point is about 300 feet from the northwest edge of the mesa, S. 20° E. from the top of a small but prominent disconnected hill that is nearly as high as the main part of the mesa and appears higher as seen from Fort Stockton.

Station mark: Aluminum tablet cemented in a large flat rock lying flush with ground.

Signal: Lumber quadripod, standing about 15 feet high, the upper 8 feet being wrapped with cloth, black above, and white below.

[Latitude 30° 51' 32.16". Longitude 102° 48' 39.87".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Madera.....	18	21	01.29	198	17	53.55	4.4926987	19.322
Chancellor.....	54	41	15.20	234	32	49.03	4.5087417	20.049
Belding.....	58	06	39	238	01	07	4.30566	12.561
Stockton.....	101	44	42	281	41	08	4.05404	7.037
School.....	112	49	57	292	47	32	3.91122	5.065
Rooney.....	136	24	59.43	316	21	13.72	4.2281858	10.508
Twelve-Mile.....	227	11	10.72	47	15	11.30	4.2290093	10.528
McKenzie.....	288	30	33.08	108	40	41.95	4.5229418	20.715
Scarboro.....	334	35	12	154	37	38	4.24703	10.974
Round.....	359	53	36	179	53	39	4.28843	12.072

**TOWER, PECOS COUNTY, TEX.**

About 30 miles south of Girvin, and about 4 miles south and west of Shebina's ranch, on the south edge of large mesa forming a main divide. The point is approximately 1.64 miles west of the gate at the summit of the divide through which the road from Shebina's ranch to Will Harral's ranch runs, the gate being in the fence sepa-

rating these two ranches, and about 857 feet south of the fence running west from that gate. There is another fence corner 1.65 miles west of the station. A pile of rocks about 2 feet high is centered over station.

Station mark: Aluminum tablet cemented in a boulder, and set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

The theodolite was set on an 8-foot observing tower, making the line of sight about 13 feet above the station, in order to see the signal at "Cedar."

[Latitude 30° 45' 07.27". Longitude 102° 17' 13.10".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Downie.....	31	30	01.65	211	24	32.05	4.5187990	20.519
Trent.....	71	40	34	251	36	02	4.17447	9.286
McKenzie.....	93	48	33.89	273	42	36.93	4.2696082	11.560
Corner.....	188	36	59.20	8	37	19.20	3.8410218	4.309
Cedar.....	261	00	06.83	81	03	36.17	4.0422684	6.849
Windmill.....	313	11	13.68	133	14	13.28	4.1085118	7.977

#### TRENT, PECOS COUNTY, TEX.

About 35 miles southeast from Fort Stockton, 3 miles north of J. L. Trent's headquarters, 1 mile northeast of Trent's "North" well, and 1 mile east of road leading from Trent's place northward to Fort Stockton road. On south point of high mesa, 0.25 mile west of fence line crossing mesa.

Station may be reached by wagon from Trent's place by taking road leading northward, turning off this road and up first main canyon to the east, and going up this canyon about 1 mile to fence line, which is about 1 mile south of station. By going through fence one can follow up draw to top of mesa.

Station mark: Drill hole in solid and outcropping rock, with triangle cut around it.

Signal: Eight-sided pyramid of poles weighted down at bottom with rocks, and covered with black cloth, with white flag over center, the whole being centered over station mark.

[Latitude 30° 42' 34.40". Longitude 102° 26' 06.23".]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	'	"	°	'	"	Log. meters.	Miles.
Downie.....	7	22	29	187	21	31	4.37396	14.700
McKenzie.....	143	30	48	323	29	26	3.86768	4.582
Tower.....	251	36	02	71	40	34	4.17447	9.286

#### TUNIS, PECOS COUNTY, TEX.

A three-point station, about 10 miles east of Fort Stockton and about 2 miles south of the Fort Stockton-Sheffield road.

The station is on the highest part of the flat mesa-like ridge, on the longest hill of the ridge, at a point about one-third of the distance from the northeast end of this hill or mesa to the southwest end, and is about 3 miles southwest of the point where the Fort Stockton-Sheffield road crosses the ridge.

Station mark: Aluminum tablet cemented in a large flat rock, flush with the ground. There is a line of rocks about 30 feet long, placed in the form of an arrow, across the open grassy part of the top of the hill, pointing to the station, which is about 25 feet from the point of the arrow.

Signal: A small pile of rocks over the station.

[Latitude 30° 52' 01.05". Longitude 102° 42' 13.90".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Madera.....	33 26 42	213 20 17	4.56135	22.631
Rooney.....	117 26 48	297 19 45	4.39235	15.336
McKenzie.....	298 18 26	118 25 17	4.38469	15.067

**TWELVE-MILE, PECOS COUNTY, TEX.**

About 12 miles northeast of Fort Stockton, on the highest part of the northwestern end of "Twelve-Mile Mesa," which is the second large mesa from Fort Stockton lying south of the Kansas City, Mexico & Orient R. R. and north of the Fort Stockton-Sheffield road. The station is on a small rocky rise about 4 feet higher than the rest of that part of the mesa.

Station mark: Drill hole in the center of a triangle chiseled in outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over the station.

[Latitude 30° 57' 45.84". Longitude 102° 40' 51.54".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Three-Mile.....	47 15 11.30	227 11 10.72	4.2290093	10.528
Rooney.....	91 48 53.07	271 41 06.05	4.3820106	14.975
Livingston.....	262 59 21.40	83 09 44.43	4.5099118	20.103
Parks.....	275 23 30.69	95 29 55.16	4.2995046	12.394
McKenzie.....	319 06 16.92	139 12 26.47	4.4663350	18.184

**WINDMILL, TERRELL COUNTY, TEX.**

Windmill with cement water tank, known as the Corder "75" well. About 55 miles northeast of Sanderson, about 55 miles southwest of Girvin, 3 miles northwest of the W. H. Corder ranch "51" well, in Independence Draw. On highest part of mesa in this vicinity.

Station may be reached by road from the W. H. Corder place on the southeast or from Arthur Harrol's place on the west.

Reference mark: Bronze tablet cemented in drill hole in cement well base.

Station mark and signal: Windmill tower. The center of tower is 2 feet southeast of station mark.

[Latitude 30° 40' 21.81". Longitude 102° 11' 21.45".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Dean.....	7 04 45	187 04 34	4.00398	6.271
Corder.....	10 13 35.40	190 12 24.89	4.3184949	12.937
Free.....	48 23 28	228 20 11	4.13918	8.561
Downie.....	54 00 15.27	233 51 47.13	4.5174156	20.453
McKenzie.....	109 47 38.23	289 38 42.06	4.4722870	18.435
Tower.....	133 14 13.28	313 11 13.68	4.1085118	7.977
Cedar.....	188 18 35.42	8 19 04.90	4.0261434	6.599
Slaughter.....	255 15 42.59	75 20 51.64	4.2216624	10.352
Blackstone.....	276 49 52.59	96 56 47.13	4.3384336	13.545
Independence.....	290 36 10	110 40 48	4.19099	9.646
Mitchell.....	325 11 51.03	145 16 09.36	4.3751464	14.740

**WINDMILL, IRION COUNTY, TEX. (Not occupied.)**

Station mark: Center of windmill tower.

[Latitude 31° 19' 14.21". Longitude 101° 13' 48.82".]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ' "	° ' "	Log. meters.	Miles.
Sawyer.....	152 33 07	332 31 53	3.90968	5.047
Rock.....	218 21 44	38 25 58	4.33243	13.359
Ketchum.....	257 26 04	77 31 43	4.24634	10.957

# PRIMARY TRAVERSE.

Anahuac and Liberty quadrangles.

## LIBERTY COUNTY.

The following geographic positions were determined in 1916 by D. S. Birkett and W. F. Hicks.

A line was run from Primary Traverse Station 202, 1915, of Harris County work, to U. S. Corps of Engineers' Station 1619, of Trinity River Survey.

Positions are on North American datum.

## ANAHUAC QUADRANGLE.

Along highway near northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Crosby, about 6.3 miles northeast of, on road to Liberty, 125 feet south of Texas & New Orleans R. R., 250 feet west of bridge across Cedar Bayou, 30 feet south of public road and 6 feet north of wire fence; iron post stamped "Prim. Trav. Sta. No. 202, 1915." Elevation 54.666 feet.....	° ' " 29 58 14.90	° ' " 94 59 16.33	<i>Fect.</i> .....
Dayton, 6.6 miles southwest of, opposite cattle guard No. 333 B, Texas & New Orleans R. R., on east end of concrete abutment of highway bridge; chiseled square.....	29 59 16.53	94 57 56.25	9,397
Dayton, 5.7 miles southwest of, opposite trestle 33 A A on Texas & New Orleans R. R., northeast corner of highway bridge, on concrete abutment; chiseled square.....	29 59 49.04	94 57 13.74	4,971

## LIBERTY QUADRANGLE.

Along highways near southwest corner of quadrangle.

Stations.	Latitude.	Longitude.	Distance between stations.
Dayton, 4.4 miles southwest of, opposite trestle No. 330 Texas & New Orleans R. R., southwest corner of bridge on Dayton-Crosby road, in concrete abutment; bronze tablet stamped "Prim. Trav. Sta. No. 1, 1916".....	° ' " 30 00 31.87	° ' " 94 56 16.83	<i>Fect.</i> 6,612
Dayton, 4.1 miles southwest of; crossroads.....	30 00 58.09	94 55 41.92	4,050
Dayton, 2.5 miles southwest of, 150 feet southeast of trestle No. 329 A Texas & New Orleans R. R., northwest corner of highway bridge; chiseled square.....	30 01 33.58	94 54 56.04	5,392
Dayton, 1.6 miles southwest of, T road south.....	30 02 03.90	94 54 16.14	4,653
Dayton, 1.2 miles southwest of, T road northwest.....	30 02 23.15	94 53 50.69	2,960
Dayton, 0.8 mile southwest of Texas & New Orleans R. R. depot, forks of Houston and Mount Bellview roads, 1,200 feet east of Texas & New Orleans R. R., in north end of concrete culvert; bronze tablet stamped "Prim. Trav. Sta. No. 2, 1916".....	30 02 24.28	94 53 36.90	1,213
Dayton, 0.15 mile northeast of Texas & New Orleans R. R. depot, 100 feet northwest of track, on west end of concrete culvert; chiseled square.....	30 03 00.65	94 53 06.02	4,565
Dayton, 0.5 mile northeast of, fork of Beaumont-Kinefick road.....	30 03 33.77	94 52 47.21	3,729
Dayton, 0.95 mile northeast of, on Dayton-Liberty road, concrete bridge over Linney Creek, on top of wing wall at southeast corner; chiseled square.....	30 03 45.07	94 52 25.22	2,240
Liberty bridge over Trinity River, Texas & New Orleans R. R. crossing at west end of.....	30 03 32.04	94 49 17.46	16,548
U. S. C. E. Prim. Trav. Sta. No. 1619.....	30 03 38.06	94 49 01.71	1,507

Magnetic declination for south border of quadrangle, 8° 32' E.

## Bobbin and Brenham quadrangles.

## WALLER COUNTY.

The following geographic positions were determined in 1916 by D. S. Birkett. A line was run from Primary Traverse Station No. 80, 1915, of Harris County work, to Primary Traverse Station No. 26, 1909, on Brazos River bridge.

Positions are on North American datum.

## BOBBIN QUADRANGLE.

Along Houston & Texas Central R. R. near southwest corner of quadrangle. (By D. S. Birkett in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Waller station, about 1,900 feet southeast of, 47 feet south of Houston & Texas Central R. R., 23 feet southeast of county-line post, 2.5 feet north of fence line; iron post stamped "Prim. Trav. Sta. No. 80, 1915." Elevation 241.632 feet....	30 03 16.48	95 55 16.59	.....
Waller, 0.95 mile west of, southwest corner of bridge No. 41 C on Houston & Texas Central R. R., concrete abutment; chiseled square.....	30 03 34.45	95 56 29.12	6,623
Waller, 1.5 miles west of, center of bridge 42 C.....	30 03 42.83	95 57 03.47	3,130
Waller, 1.8 miles west of, road crossing.....	30 03 46.15	95 57 17.12	1,241
Center of bridge No. 43 A.....	30 04 02.90	95 58 26.14	6,291
Waller, 4.2 miles west of, road crossing.....	30 04 19.53	95 59 34.57	6,239
Prairie View, 0.6 mile east of, on southeast abutment of bridge 45 C; chiseled square.....	30 04 24.00	95 59 53.92	1,754

## BRENNHAM QUADRANGLE.

Along Houston & Texas Central R. R. near southeast corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Prairie View, 0.2 mile west of, road crossing.....	30 04 35.89	96 00 41.75	4,366
Prairie View, 0.7 mile west of, seven telephone poles east of milepost 47, west concrete emergency rail stand; chiseled square.....	30 04 43.30	96 01 12.95	2,838
Prairie View, 2.4 miles west of, Houston & Texas Central R. R. bridge over Clear Creek, southeast corner, in concrete abutment; bronze tablet stamped "Prim. Trav. Sta. No. 4, 1916".....	30 05 07.03	96 02 50.58	8,902
Hempstead, 1 mile east of Houston & Texas Central R. R. depot, road crossing.....	30 05 24.36	96 04 01.80	6,493
Hempstead, front entrance of Waller County court house, in top of limestone balustrade of steps; bronze tablet stamped "Prim. Trav. Sta. No. 5, 1916".....	30 05 50.80	96 04 37.48	4,113
Hempstead, 1.7 miles northwest of Houston & Texas Central R. R. depot crossing.....	30 06 17.05	96 05 33.47	5,583
Hempstead, 1.95 miles west of, culvert No. 1 D, on south end; chiseled square.....	30 06 24.30	96 06 20.68	4,206
Pointer, 0.5 mile east of, 20 feet south of milepost 3 Houston & Texas Central R. R.; top of steel-rail bench mark.....	30 06 33.92	96 07 23.36	5,586
Pointer, 0.3 mile west of, road crossing.....	30 06 42.05	96 08 12.05	4,349
Milepost 5, center of Houston & Texas Central R. R. opposite Harmon, 0.5 mile east of, 30 feet south of Houston & Texas Central R. R., top of short steel rail; railroad engineer's bench mark.....	30 06 53.43	96 09 21.87	6,235
Houston & Texas Central R. R. bridge over Brazos River, in top of south end of east pier; aluminum tablet stamped "Prim. Trav. Sta. No. 26, 1909, Texas".....	30 06 57.78	96 09 51.64	2,647
Bulletin 496 value from the west.....	30 07 01.30	96 11 22.62	8,081
	30 07 01.60	96 11 23.60	.....

Magnetic declination for southeast corner of quadrangle, 8° 48' E.

## Rosenberg and Sealy quadrangles.

## WALLER COUNTY.

Line run by D. S. Birkett in 1916, from Primary Traverse Station No. 47, 1915, along Missouri, Kansas & Texas Ry. to Primary Traverse Station No. 10, 1909.

## ROSENBERG QUADRANGLE.

Along Missouri, Kansas & Texas Ry. near center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Katy, 520 feet west of station, 42 feet south of center of track, 4 feet east by 2 feet south of telephone pole; iron post stamped "Prim. Trav. Sta. No. 47, 1915." Elevation 140.984 feet.....	29 47 08.32	95 49 18.65	<i>Feet.</i> .....
Harris County and Waller County line post.....	29 47 08.90	95 49 57.15	3,394
Katy, 1 mile west of, north end of concrete culvert, Missouri, Kansas & Texas Ry.; chiseled square.....	29 47 09.12	95 50 21.97	2,187
Katy, 1.5 miles west of, center of bridge No. 1054/1 of Missouri, Kansas & Texas Ry.....	29 47 09.11	95 50 47.82	2,278
Dorson, center of railroad, opposite signpost.....	29 47 09.71	95 53 15.20	12,988
Brookshire, 3.2 miles east of, 50 feet north and 80 feet west of milepost 1051, 16 feet west of farm gate at fence line; U. S. C. & G. S. iron post.....	29 47 10.38	95 54 04.04	4,305
Brookshire, 1.1 miles east of, center of bridge No. 1048/1 of Missouri, Kansas & Texas Ry.....	29 47 10.40	95 56 10.44	11,139
Brookshire High School, north entrance, concrete steps, on top of west guard rail; chiseled square.....	29 46 57.33	95 57 10.02	5,414
Brookshire, 2.0 miles west of, center of bridge No. 1045/6.....	29 46 59.48	95 59 12.50	10,796

Magnetic declination near Brookshire, 8° 45' E.

## SEALY QUADRANGLE.

Along Missouri, Kansas & Texas Ry.

Station.	Latitude.	Longitude.	Distance between stations.
Rogersville flag station, 1.2 miles east of, center of bridge 1044/9.	29 46 44.52	96 00 15.16	<i>Feet.</i> 5,725
Rogersville, 0.4 mile east of, center of bridge 1043/9.....	29 46 34.04	96 00 59.05	4,010
Rogersville flag station, center of track.....	29 46 28.98	96 01 20.25	1,937
McDowell, 0.6 mile east of station, south side of track, railroad bridge 1042/5 over Brazos River, in east abutment; aluminum tablet stamped "Prim. Trav. Sta. No. 10, 1909, Texas," also stamped "No. 1"; Bull. 644-P value, Harris County.....	29 46 17.87	96 02 06.36	4,216
Bull. 496 value.....	29 46 20.00	96 02 06.60	.....

Armstrong, Harlingen No. 1, Harlingen No. 2, La Sal Vieja, Lopena Island, Padre Island No. 3, Saltillo Ranch, San Ramon, and Tarida Ranch quadrangles.

## CAMERON, HIDALGO, AND WILLACY COUNTIES.

During the winter of 1919-20, C. F. Urquhart extended primary-traverse control over parts of the above-named quadrangles. Positions on North American datum are based on Brenner, Raymond, Sauz, Stillman, Norias, Vinson, Topo and Yturria triangulation stations of the U. S. Coast and Geodetic Survey.

**HARLINGEN NO. 1 QUADRANGLE.**

From Raymond triangulation station east to northeast corner of quadrangle. (By C. F. Urquhart in 1920.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Raymond triangulation station, U. S. Coast and Geodetic Survey, 2.5 miles east of Raymondville, 0.75 mile east of the crossroad at northwest corner of the Raymond Farm, 82 feet north of center of wagon road; station mark is a tablet in top of concrete post. (Elevation by U. S. G. S. 29,691 feet).	26 28 55.78	97 44 20.95	.....
T road north.....	26 28 55.5	97 43 12.7	6,206
Raymondville, 6 miles east of, 0.25 mile west of J. W. Wilkins's residence; iron post stamped "Prim. Trav. Sta. No. 1." (Elevation 23,417 feet).....	26 28 57.00	97 41 16.69	10,537
T road north.....	26 28 50.3	97 40 18.3	5,350
Opposite dim road north.....	26 28 50.2	97 39 56.4	1,983
Raymondville, 9 miles east of, at old road north; iron post stamped "Prim. Trav. Sta. No. 2. Elev. 21." (Elevation is 21,215 feet).....	26 28 50.14	97 38 21.83	8,597
Center of gate to pasture.....	26 28 49.8	97 37 46.2	3,240
T road south through gate.....	26 28 50.1	97 36 29.7	6,945
Mrs. King's pasture gate.....	26 28 51.2	97 36 00.4	2,665
Mrs. King's Sauz ranch, 1.5 miles west of, at curve in road; iron post stamped "Prim. Trav. Sta. No. 3. Elev. 19." (Elevation is 19,242 feet).....	26 29 02.31	97 35 20.86	3,765
Mrs. King's gate, Sauz ranch.....	26 29 22.3	97 34 05.5	7,134
Sauz ranch, 2 miles east of, on south side of road from Sauz ranch to Fish house on Laguna Madre; iron post stamped "Prim. Trav. Sta. No. 4. Elev. 13, 1920 L." (Elevation is 12,766 feet).....	26 29 26.19	97 32 15.34	10,007

Magnetic declination, 9° E.

**HARLINGEN NO. 2 QUADRANGLE.**

Along highways near north border of quadrangle. (By C. F. Urquhart, in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Crossroads.....	26 29 10.3	97 57 33.2	.....
Raymondville, 12 miles west of, inside of fence at gate on north side of road opposite Mr. Steaven's residence; iron post stamped "Prim. Trav. Sta. No. 26, 1919".....	26 29 21.55	97 58 49.68	7,045

**From Raymondville west to Steavens ranch.**

Crossroads.....	26 29 46.0	97 46 51.6	.....
Do.....	26 28 53.2	97 47 51.6	.....
T road north-south.....	26 28 52.7	97 48 49.4	5,248
Raymondville, 3 miles west of; iron post stamped "Prim. Trav. Sta. No. 23, 1919. Elev. 40." (Elevation is 36,443 feet).....	26 28 46.17	97 48 49.02	653
Road north.....	26 28 45.9	97 40 46.2	10,650
Brenner, U. S. Coast and Geodetic Survey station, about 5 miles west of Raymondville, 0.25 mile west of the Cameron-Hidalgo county line, 246 feet north of center of wagon road leading west from Raymondville, near the center of a small cleared but uncultivated field belonging to J. P. Brenner, of Raymondville. (Elevation by U. S. G. S. is 36,194).....	26 28 48.07	97 51 58.09	6,528
Road opposite Thompson's gate.....	26 28 41.6	97 53 34.2	8,757
Road north at gate.....	26 28 40.2	97 54 00.3	2,376
Raymondville, 9 miles west of, inside fence on south side of road; iron post stamped "Prim. Trav. Sta. No. 25, 1919. Elev. 44." (Elevation is 43,799 feet).....	26 28 48.17	97 55 02.36	5,693
Road north to J. A. Jonas ranch.....	26 29 10.3	97 57 33.2	13,849
Prim. Trav. Sta. No. 26 (previously described).....	26 29 21.55	97 58 49.68	7,036

Magnetic declination, 9° 10' E.

**Near Brenner triangulation station.**

Crossroads.....	26 29 47.8	97 50 46.5	.....
T road north.....	26 28 45.9	97 50 46.2	6,240
Center of road at gate.....	26 28 45.8	97 51 37.7	4,670
Brenner triangulation station (previously described).....	26 28 48.07	97 51 58.09	1,869

## SALTILLO RANCH QUADRANGLE.

West along highway near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
San Jose ranch, at southeast corner of corral barn; iron post stamped "Prim. Trav. Sta. No. 12. Elev. 33, 1920 L." (Elevation is 35.180 feet).....	° ' " 26 45 00.11	° ' " 97 34 02.06	Feet. ....
San Jose ranch, 3 miles west of, on north side of telephone road from San Jose ranch to Norias; iron post stamped "Prim. Trav. Sta. No. 13. Elev. 27, 1920 L." (Elevation is 26.875 feet).....	26 45 17.55	97 36 47.79	.....
Stake on south side of road.....	26 45 34.3	97 37 55.6	6,378
San Jose ranch, 6 miles west of, on south side of telephone road; iron post stamped "Prim. Trav. Sta. No. 14. Elev. 21, 1920 L." (Elevation is 20.718 feet).....	26 46 00.0	97 39 38.2	9,658
Stake at station on north side of road.....	26 46 15.0	97 40 37.8	5,609
Curve in road at wire fence stake.....	26 46 29.3	97 41 34.2	5,309
Norias, 4.5 miles east of, opposite Santillo ranch on San Jose-Norias road; iron post stamped "Prim. Trav. Sta. No. 15. Elev. 29, 1920 L." (Elevation is 29.351 feet).....	26 46 36.90	97 42 28.39	4,971
On south side of road, stake.....	26 46 53.1	97 43 14.7	4,509
Noria's pasture gate.....	26 47 04.4	97 43 41.8	2,705
On north side of road, stake at station 378.....	26 47 21.5	97 44 34.5	5,076

Magnetic declination, 9° 05' E.

## ARMSTRONG QUADRANGLE.

Near southeast corner of quadrangle. (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
On north side of road, stake at station 587.....	° ' " 26 47 22.8	° ' " 97 45 27.3	Feet. 4,793
Noria's ranch residence, at northeast corner of fence, west side of track, St. Louis, Brownsville & Mexico R. R.; iron post stamped "Prim. Trav. Sta. No. 16. Elev. 20." (Elevation is 19.826 feet).....	26 47 09.28	97 46 32.27	6,042
Stake, 500 feet west of road.....	26 46 47.1	97 48 21.8	.....
Norias, 3 miles west of, 600 feet west of small pond, 30 feet north of east-west road; iron post stamped "Prim. Trav. Sta. No. 30. Elev. 31." (Elevation is 30.833 feet).....	26 46 15.06	97 49 30.31	6,996
Stake painted white, 400 feet north of road.....	26 45 57.8	97 50 24.6	5,220
Center line of road, at gate.....	26 45 50.9	97 50 57.9	3,095
Stake painted white, 200 feet north of wagon road.....	26 45 40.4	97 51 49.5	4,795
Vinson, about 7 miles from Norias railroad station, azimuth 252° 48' 31" from the large white house about 50 meters (160 feet) north of the section house there, about 46 meters (151 feet) north of the plain wagon road leading west from Norias, near the center of a rounded prominent bare knoll. (Elevation is 57.100 feet).....	26 45 25.01	97 52 46.26	5,376
Painted stake, 200 feet south of wagon road.....	26 45 01.5	97 53 39.3	5,364

Magnetic declination, 9° 08' E.

North along St. Louis, Brownsville &amp; Mexico R. R., in east part of quadrangle

Milepost 66.....	26 45 50.7	97 46 19.8	.....
Norias, road crossing.....	26 47 08.2	97 46 32.0	7,903
Noria's, at northeast corner of fence around ranch; iron post stamped "Prim. Trav. Sta. No. 16. Elev. 20." (Elevation is 19.826 feet).....	26 47 09.28	97 46 32.27	107

Magnetic declination, 9° 00' E.



## LOPENIA ISLAND QUADRANGLE.

Near southwest corner of quadrangle. (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
Topo, on a small island near the west shore of Laguna Madre, connected at low tide with the mainland to the south by a narrow strip of land, about 23 feet north of the south shore and about 164 feet east of the west shore of the island, which is about 10 feet above the water. C. & G. S. triangulation station.....	° ' " 26 45 17.02	° ' " 97 28 19.33	Feet. ....

## PADRE ISLAND NO. 3 QUADRANGLE.

Near southwest part of quadrangle. (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
On south side of road from Sauz ranch to Fish house; 0.25 mile east of two windmills at an inclosed tank with cane growing around it; iron post stamped "Prim. Trav. Sta. No. 5. Elev. 13, 1920 L." (Elevation is 12.738 feet).....	° ' " 26 31 24.97	° ' " 97 28 46.18	Feet. ....
At curve in road near a rather clear lake, road turns east.....	26 30 59.6	97 27 22.7	7,991
Fish house, 0.75 mile west of, near a lone bunch of brush, on small bridge.....	26 32 37.9	97 27 19.5	11,470
Sauz, U. S. Coast and Geodetic Survey triangulation station, located on a high ridge about 1.5 miles south of Sauz fish house. It is near a cattle trail and about 12 meters (39 feet) from the steep shore bank. Station is marked by a tablet in a concrete post and stamped "11 1920 L by U. S. G. S." (Elevation is 10.598 feet).....	26 32 16.01	97 25 13.53	6,371

Magnetic declination, 8° 50' E.

## LA SAL VIEJA QUADRANGLE.

Near northwest corner of quadrangle. (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
Painted stake 50 feet south of wagon road.....	° ' " 26 44 42.9	° ' " 97 54 33.1	Feet. ....
Norias, 10 miles west of, 15 feet north of wagon road west to the Andreas ranch; iron post stamped "Prim. Trav. Sta. No. 31, 1919. Elev. 39." (Elevation is 38.533 feet.).....	26 44 31.43	97 55 40.41	6,208
Stake painted white, 200 feet north of road.....	26 44 23.4	97 57 52.6	6,598
Stake painted white, 100 feet north of road.....	26 44 14.3	97 57 44.1	4,769
Norias, 14.5 miles west of, at road forks 0.25 mile east of Andreas ranch; iron post stamped "Prim. Trav. Sta. No. 32 1919. Elev. 47." (Elevation is 46.836 feet.).....	26 44 01.76	97 59 02.17	7,190

## South near west border of quadrangle.

Center of road north, at gate in front of Andreas ranch house.....	26 43 59.6	97 59 17.5	1,405
Painted stake 20 feet east of road.....	26 43 03.0	97 59 43.7	6,188
Station 851, at point 18 feet south and 6 feet west of corner fence post of north and east fencelines (in San Ramon quadrangle).....	26 42 12.3	98 00 08.1	5,577
Stake painted white.....	26 41 34.3	97 59 23.3	5,590
Andreas ranch, 3 miles south of; iron post stamped "Prim. Trav. Sta. No. 33, 1919. Elev. 48." (Elevation is 48.181 feet.).....	26 41 07.82	97 59 20.95	2,683
Painted stake.....	26 40 17.1	97 59 53.4	5,909
Painted stake, 8 feet north of fence line; 75 feet east of corner of fences south and east (in San Ramon quadrangle).....	26 39 26.0	98 00 01.3	5,198
Station 866, 4 feet north and 6 feet east of painted cross nailed on fence post.....	26 39 05.0	97 58 47.2	7,050
T south in fence line.....	26 38 46.5	97 57 41.8	6,220
San Jose ranch, at northeast fence corner in front of white painted cottage; iron post stamped "Prim. Trav. Sta. No. 34, 1919. Elev. 49." (Elevation is 49.328).....	26 37 38.00	97 58 02.66	7,171

## LA SAL VIEJA QUADRANGLE—Continued.

## South near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Station 882, at point 10 feet west of large corner fence post, on northeast side of road, at T road to southwest elbow in road. Hub, 8 feet west of center of road, 16 feet west of fence post with board painted white.....	26 37 16.5	97 57 20.2	4,429
Point 6 feet west of center of road, 15 feet east of fence post having white board nailed to it.....	26 36 05.9	97 57 31.5	7,195
	26 35 10.1	97 57 40.7	5,700

Magnetic declination, 9° 15' E.

Stillman's ranch, 5 miles northwest of, in southwest fence corner at T road north; iron post stamped "Prim. Trav. Sta. No. 35, 1919. Elev. 50." (Elevation is 49.947 feet).....	26 34 26.89	97 57 48.02	4,413
Gate marked U. S. B. M. 46.4.....	26 34 07.3	97 58 05.9	2,558
T road west.....	26 33 48.2	97 58 07.6	1,940
Center of road at tree marked "T. B. M.".....	26 33 17.5	97 58 09.2	3,097
Y road southwest at elevation painted "46.9".....	26 32 58.0	97 58 16.4	2,075
Center of road opposite T. B. M. 44.5.....	26 32 34.8	97 58 06.7	2,502
Center of road at gate, elevation 36.1.....	26 32 00.5	97 57 53.4	3,666
Stillman's ranch, 5 miles west and 3 miles south of, at old road forks, 15 feet east of road; iron post stamped "Prim. Trav. Sta. No. 36 W, 1920. Elev. 44." (Elevation is 44.133 feet).....	26 31 44.36	97 57 50.27	1,658
Cross roads at elevation 45.3.....	26 31 09.2	97 57 43.6	3,602
Center of road opposite B. M., elevation 42.0.....	26 30 00.6	97 57 33.9	6,979

## From Stillman triangulation station south to Brenner triangulation station.

Stillman, U. S. Coast and Geodetic Survey triangulation station. (Elevation is 48.301).....	26 36 57.74	97 54 00.17	.....
Painted stake 3 feet east of road.....	26 35 54.4	97 53 53.1	6,427
Stillman ranch, 10 feet north of red gate, 400 feet west of group of white ranch houses; iron post stamped "Prim. Trav. Sta. No. 40, 1919. Elev. 46." (Elevation is 45.680 feet).....	26 34 13.86	97 53 49.60	4,150
Center of road opposite gate.....	26 33 46.9	97 53 08.6	4,616
Crossroads between two gates.....	26 32 52.1	97 52 15.1	7,359
Center of road at gate.....	26 31 37.6	97 51 13.4	9,380
Stillman ranch, 4.2 miles southeast of, 10 feet north and 20 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 41, 1920. Elev. 34." (Elevation is 34.276 feet).....	26 31 37.81	97 50 46.82	2,431
Crossroads.....	26 30 37.6	97 50 46.6	6,080

Magnetic declination, 9° E.

## From Stillman triangulation station to Vinson triangulation station.

Stillman, Coast and Geodetic Survey triangulation station (previously described).....	26 36 57.74	97 54 00.17	.....
Pump under windmill.....	26 37 56.6	97 54 10.8	6,016
Road forks.....	26 38 09.7	97 54 25.4	1,868
Gate.....	26 38 24.9	97 54 34.8	1,756
Do.....	26 38 53.2	97 54 35.4	2,851
Do.....	26 39 24.7	97 54 36.0	3,179
Stillman ranch, 6.5 miles northwest of, 4 feet east of fence, 600 feet south of windmill; iron post stamped "Prim. Trav. Sta. No. 42, 1919. Elev. 39." (Elevation is 39.254 feet).....	26 40 04.00	97 54 36.77	3,971
Pipe of flowing well.....	26 41 30.1	97 54 38.0	8,691
White painted stake nailed on fence post.....	26 42 20.0	97 54 39.2	5,040
Stillman ranch, 11.5 miles northwest of, 3 feet south and 3 feet east of corner at T south in the east-west fence on boundary between Stillman and King pastures; iron post stamped "Prim. Trav. Sta. No. 43, 1919. Elev. 38." (Elevation is 38.256 feet).....	26 43 27.03	97 54 40.39	6,763
White painted stake.....	26 44 18.4	97 54 09.0	5,914
Do.....	26 44 50.1	97 53 30.4	4,742
Vinson, about 7 miles from Norias railroad station, in azimuth 252° 48' 31" from the large white house about 164 feet north of the section house there, about 151 feet north of the plain wagon road leading west from Norias, near the center of a rounded prominent bare knoll. Elev. 57.100 feet.....	26 45 25.01	97 52 46.26	5,330

Magnetic declination, 9° 20' E.

## LA SAL VIEJA QUADRANGLE—Continued.

From Primary Traverse Station No. 35 east to Primary Traverse Station No. 40.

Station.	Latitude.			Longitude.			Distance between stations.
	°	'	"	°	'	"	Feet.
Prim. Trav. Sta. No. 35 (previously described).....	26	34	26.89	97	57	48.02	.....
Gate.....	26	34	25.8	97	57	36.3	1,071
Gate at elevation 55.2 feet.....	26	34	26.2	97	56	27.7	6,225
Wire fence on side of road, opposite tree marked "U. S. P. B. M. 50.3".....	26	34	30.3	97	55	40.0	4,350
Gate painted 51.4 feet, in $\pi$ fence north.....	26	34	25.8	97	54	48.5	4,700
Prim. Trav. Sta. No. 40 (previously described).....	26	34	13.86	97	53	49.60	5,482

Magnetic declination, 9° 15' E.

North along St. Louis, Brownsville &amp; Mexico R. R. in east part of quadrangle.

Milepost 48.....	26	30	12.7	97	46	47.9	.....
Road crossing.....	26	30	38.9	97	46	44.2	2,670
Milepost 49.....	26	31	04.8	97	46	40.6	2,635
Raymondville, 3 miles north of, at red gate on east side of track; iron post stamped "Prim. Trav. Sta. No. 22. Elev. 37." (Elevation is 36.907 feet).....	26	31	33.50	97	46	36.08	2,921
Milepost 50.....	26	31	55.4	97	46	33.5	2,226
Milepost 51.....	26	32	51.9	97	46	25.7	5,740
Milepost 52.....	26	33	44.0	97	46	18.4	5,300
Yturria, opposite south entrance to station.....	26	34	05.2	97	46	15.4	2,162
Yturria, 0.25 mile north of, at gate east of track; iron post stamped "Prim. Trav. Sta. No. 21. Elev. 40." (Elevation is 40.151 feet).....	26	34	19.86	97	46	12.85	1,496
Road crossing.....	26	34	19.8	97	46	13.4	53
Milepost 53.....	26	34	32.2	97	46	11.7	1,270
Milepost 54.....	26	35	24.2	97	46	04.5	5,290
Milepost 55.....	26	36	16.5	97	46	02.3	5,282
Milepost 56, 12 feet south of; iron post stamped "Prim. Trav. Sta. No. 20".....	26	37	08.87	97	46	03.76	5,284
Road crossing.....	26	37	20.0	97	46	03.6	1,123
Milepost 57.....	26	37	59.9	97	46	04.4	4,030
Milepost 58.....	26	38	53.3	97	46	05.5	5,386
Road crossing.....	26	39	15.3	97	46	05.9	2,224
Milepost 59, 10 feet south of; iron post stamped "Prim. Trav. Sta. No. 19".....	26	39	49.28	97	46	07.05	3,432
Milepost 60.....	26	40	37.5	97	46	07.60	4,868
Randolph, track opposite water tank.....	26	41	10.8	97	46	08.3	3,360
Milepost 61.....	26	41	33.7	97	46	08.7	2,315
Milepost 62.....	26	42	24.0	97	46	09.8	5,071
Milepost 62, 290 feet north of, opposite telegraph pole; iron post stamped "Prim. Trav. Sta. No. 18".....	26	42	26.82	97	46	10.26	292
Milepost 63.....	26	43	15.1	97	46	10.8	4,871
Milepost 64.....	26	44	07.4	97	46	11.9	5,284
Norias, U. S. Coast and Geodetic Survey triangulation station, about 3 miles south from Norias railroad station, between mileposts 64 and 65, 200 meters east of tracks, in King's pastures, on a knoll covered with various kinds of bushes.....	26	44	29.14	97	46	02.32	2,361
Road crossing.....	26	44	54.8	97	46	12.9	2,763
Milepost 65, 14 feet south of.....	26	44	59.9	97	46	13.5	513

Magnetic declination, 9° 00' E.

Near milepost 60.

Road crossing.....	26	40	48.5	97	46	07.9	.....
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From Primary Traverse Station No. 44 west to Yturria triangulation station.

Prim. Trav. Sta. No. 44 (later described).....	26	36	42.30	97	43	23.90	.....
Yturria, U. S. Coast and Geodetic Survey triangulation station, in the Yturria pastures, about 3.5 miles east of north from the Yturria railroad station, 5 miles east of south from Rudolph railroad station in azimuth 170° 05' 49" from the water tank about midway between mileposts 55 and 56.....	26	36	45.56	97	45	17.09	10,278

## SAN RAMON QUADRANGLE.

Near east border of quadrangle (on unchecked spur line). (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Painted stake near west edge of road.....	26 45 22.0	98 00 09.1	.....
Andreas ranch, 3 miles north of, 20 feet east of road; iron post stamped "Prim. Trav. Sta. No. 37".....	26 46 22.04	98 00 26.75	.....

Magnetic declination, 9° 15' E.

## TARIDA RANCH QUADRANGLE.

North near east border of quadrangle. (By C. F. Urquhart in 1919-20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
On road to Tarida ranch, 1.75 miles east from Sauz ranch at T in fence; iron post stamped "Prim. Trav. Sta. No. 6, 1919. Elev. 15, 1920 L." (Elevation is 15,479 feet).....	26 30 48.85	97 33 07.13	.....
Center of road, opposite gate to Corica ranch.....	26 31 32.0	97 33 07.4	4,360
Road forks to ranch.....	26 32 04.7	97 32 52.2	3,574
At crossroads along telephone line to Tarida ranch, about 5.5 miles northeast of Sauz ranch; iron post stamped "Prim. Trav. Sta. No. 7, 1919. Elev. 17, 1920 L." (Elevation is 17,520 feet).....			
Stake, west side of road.....	26 33 34.95	97 33 18.58	9,421
Stake, 250 feet west of road.....	26 34 15.0	97 33 47.5	4,822
Stake, 250 feet west of road.....	26 35 05.3	97 34 16.6	5,722
West side of road; iron post stamped "Prim. Trav. Sta. No. 8 1919. Elev. 19, 1920 L." (Elevation is 18,776 feet).....	26 36 09.97	97 34 19.87	6,537
Stake, 100 feet west of road.....	26 36 53.6	97 34 03.7	4,645
Stake, 100 feet west of road, limb cut from mesquite.....	26 38 00.00	97 34 12.8	6,745
Tarida ranch gate, 1.5 miles south of, 700 feet south of sand hill, west side of road; iron post stamped "Prim. Trav. Sta. No. 9, 1919. Elev. 25, 1920 L." (Elevation is 25,540 feet).....	26 38 29.02	97 34 08.25	2,964
Stake on west side of road.....	26 39 14.6	97 34 31.5	5,066
Wire fence, 12 feet east of gate entering Tarida ranch.....	26 39 30.8	97 34 12.2	2,397
Center of gate.....	26 39 39.5	97 34 09.6	904
West side of road; iron post stamped; "Prim. Trav. Sta. No. 10, 1919. Elev. 27, 1920 L." (Elevation is 27,175 feet).....	26 40 59.35	97 34 23.26	8,155
On west side of road, stake.....	26 41 50.22	97 34 17.2	5,164
On west side of road, stake.....	26 42 43.3	97 34 21.0	5,373
San Jose ranch, 2 miles south of, 40 feet east of road, 23 feet southwest of blazed oak tree; iron post stamped "Prim. Trav. Sta. No. 11, 1919. Elev. 28, 1920 L." (Elevation is 30,950 feet).....	26 43 27.2	97 34 09.0	4,564
Stake at Station 486.....	26 44 13.1	97 34 04.7	4,650
San Jose ranch at southeast corner of corral barn; iron post stamped "Prim. Trav. Sta. No. 12, 1919. Elev. 32, 1920 L." (Elevation is 35,180 feet).....	26 45 00.11	97 34 02.06	4,750
On road from San Jose ranch to Norias, center line of road, at wire gate.....	26 44 59.4	97 35 11.9	6,329

Near northeast corner of quadrangle.

21st fence post north of gate, in pasture, fence east of San Jose ranch.....	26 44 32.6	97 32 54.2	.....
On road from San Jose ranch to Nado windmill, 3 miles from San Jose; iron post stamped "Prim. Trav. Sta. No. 24." No elevation determined.....	26 44 06.82	97 31 29.75	8,062

Magnetic declination, 9° 00' E.

## TARIDA RANCH QUADRANGLE—Continued.

Southeast through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	'	"	°	'	"	<i>Fet.</i>
Center of road, at red gate under telephone line.....	26	38	48.4	97	44	39.9	-----
Center of road, 15 feet south of mountain edge.....	26	37	50.9	97	44	04.3	6,639
Gate.....	26	37	20.9	97	43	47.3	3,403
Puente Del Monte ranch, at southwest corner of picket fence around main front of house; iron post stamped "Prim. Trav. Sta. No. 44, 1920. Elev. 24, 1919." (Elevation is 24.527 feet).	26	36	42.30	97	43	23.90	4,433
Gate.....	26	35	59.7	97	43	16.1	4,359
Gate at T west in fence line.....	26	35	01.4	97	40	21.0	16,945
Puente Del Monte ranch, 4.4 miles southeast of, 10 feet south and 10 feet east of T road east on Cameron-Willacy county line; iron post stamped "Prim. Trav. Sta. No. 45, 1920. Elev. 22, 1918 L." (Elevation is 21.728 feet).	26	34	40.75	97	40	20.77	2,084
County-line post No. 12, T. B. M. 21.2 feet. (Elevation is 21.20 feet).	26	34	41.0	97	40	05.2	1,410
Gate.....	26	34	41.3	97	39	43.7	1,960
T. B. M. painted 18.7 feet. (Elevation is 18.76 feet).	26	34	41.6	97	39	20.7	2,090
Post No. 14 on Cameron-Willacy county line.....	26	34	42.4	97	38	08.8	6,530
Puente Del Monte ranch, 8.5 miles southeast of, 2 feet west of milepost 15, on county line, in concrete cylinder post; B. M. tablet stamped "Prim. Trav. Sta. No. 46, 1920. Elev. 16, 1919 L." (Elevation is 16.675 feet).	26	34	43.01	97	37	09.07	5,421
Post No. 17 on Cameron-Willacy county line.....	26	34	44.4	97	35	12.7	10,568
Post No. 18 on Cameron-Willacy county line.....	26	34	45.0	97	34	14.5	5,283
Road crossing on county line.....	26	34	45.2	97	34	00.8	1,250
Station 1,481 is station 176 on line from Sauz ranch to Norias..	26	35	05.30	97	34	16.59	2,487

Magnetic declination, 9° 10' E.

