UNIVERSITY LANDS

Surveying Department

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San Angelo, Texas
October 6, 1937

Hon. Wm. H. McDonald
Commissioner
General Land Office
Austin, Texas

Dear Sir:

Enclosed herewith find belated report touching Sketch #10, Crockett County, relative to the application of Jones Miller to patent a large area of his lands.

Tell Barrow I will be in Austin Monday with a rough sketch which I hope will be of service to him.

Very truly yours,

Frank F. Friend

Frank F. Friend,
Special Surveyor

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SURVEYOR'S REPORT
OF SKETCH #10

Being a Map of a Part of

CROCKETT COUNTY, TEXAS

By
Frank F. Friend
Licensed Land Surveyor of Texas

September 30, 1937

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S U R V E Y O R ' S R E P O R T

O F S K E T C H #10

Being a Map of a Part of

C R O C K E T T C O U N T Y, T E X A S

By
Frank F. Friend,
Licensed Land Surveyor of Texas
September 30, 1937.

Sketch No. 10 represents an area extending East and West almost the entire width of Crockett County, the center of which is about 17 miles south of the town of Ozona, the County Site.

The west end covers the old land mark known as Howard's Well, which is on Survey No. 1, Block 2, I. & G. N. R.R. Co., originally surveyed by Jacob Kuechler in the year 1876.

The next locating surveyor on the ground was William Cassin, who, in the fall of 1880, located on the ground Blocks M, I, L, F, G, and R; the first five being G. C. & S. F. R.R. Co. Blocks, the latter being a T. C. R.R. Co. Block. Cassin marked his surveys on the ground, and these points are represented on the map by large circles.

Will H. Bonnell was strictly an office man who made many guesses, and consequently, made many errors when he attempted to complete the "fillings-in" between the larger blocks. His work dates from 1881 to 1886, and through Blocks NG and TG, G. C. & S. F. R.R. Co. lands, he calls for mounds, bearing trees, and other things, but none have ever been found by any surveyor. There

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are statements by different surveyors on file in the General Land Office substantiating this fact, and the writer wishes to state here that his crew who did this work on the ground searched dilligently several days, but no corner was ever found. Therefore, Bonnell's surveys can be placed on the ground only to conform, according to calls, to the other older blocks.

The great G. H. & S. A. R.R. Co. Block O, which extends along the south border of this map, was originally surveyed in _____by_____, but was corrected during the summer of 1889 by State Surveyor G. M. Williams, who did good work, and his corners are recognized by all surveyors and land owners. These corners by Williams, which were found and identified during this resurvey, are represented on the map by small circles.

Of the three surveyors who left identifiable markers upon the ground included in the area shown on this map (and practically all of the original marks that can be found are shown), each adopted his own particular north point, no two of which are the same. Not one adopted True North as his north point. Yet, except in two or three instances by Bonnell, who likely was never on the ground, all fieldnotes shown on this map call for 10 degrees East magnetic variation. The methods as practiced by the old Texas locators, in the statement made in their fieldnotes of the value of the magnetic declinations, are astoundingly worthless to the present day surveyor who might attempt to follow their foot steps by using these valuations.

In the compilation of this map we have adopted the foot

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prints of Kuechler (being Survey No. 1, Block 2, at Howard's Well) as north, south, east, and west. Contiguous blocks tying directly and indirectly into Block 2, such as Blocks BBB, M, I, R, the western extension of NG, and Block XX, will also show to be north, south, east and west. This means that the east line of Surveys 13, 14, and 15, Block XX, is exactly parallel to the east line (as if the earth were flat) of Survey No. 1, Block 2, at Howard's Well. When, however, we go a little further (about 650 varas) we strike the west line of Cassin's Block L, whose north point is 0° 48' 00" to the left of the north point used by Kuechler at Howard's Well. Therefore, the west line of Block L, gauged against Kuechler's north, becomes N 0° 48' 00" W.

On the other hand, should the monuments at the NW and the NE corners of Block O, G. H. & S. A. R.R. Co., be joined by a straight line, its course should be a close average of the Williams course. By a simple calculation from the data showing on the map (coordinate distances), this course, gauged by the Kuechler north, from the NW corner of survey No. 180, Block O, becomes N 89° 30' 37" E. A perpendicular errected on this line near its center, or about the north common corner of surveys Nos. 170 and 171, would be, using Kuechler's north, N 0° 29' 23" W.

For convenience and simplicity, Kuechler's north has been extended throughout the area of this map.

Just here, permit me to point out a peculiarity found in the Cassin surveys. Cassin's north was arrived at by trailing him from the north line of Survey 15 to the NE corner of Survey 3, Block G; thence west, with a long line of original corners, to the NW corner of Survey 28, Block F. When we pick him up

again, however, through Block I, we find that he shifted his north point about 48 minutes to the right, where he adjusted to fit almost precisely the Kuechler north. This fact presents a peculiar situation in the construction of Bonnell's Block NG. Its eastern end, being Surveys Nos. 1, 2, 3, 4, and 19, must be held within the grasp of Blocks F and L, which two Blocks conform to Cassin's north at the east end of the map. The remainder of the surveys in Block NG, in order to prevent a serious conflict on the south with a resultant creation of vacancies on the north, should deflect northward and correspond to the Kuechler north. The discrepancies thus created are taken up and adjusted in Surveys Nos. 6, 5, and 20, where it will be noticed that the south lines of each of these surveys vary considerably in length.

The NE corner of survey No. 1, Block 2, on which is Howard's Well, and which corner is well established, is, in latitude, 30° 28' North, closely estimated from Triangulation Station Pierce, established 5 miles East and 2 miles South of Howard's Well, by the United States Coast & Geodetic Survey. The length of this parallel of latitude around the earth is, closely approximated, 21,484 miles. Therefore, one minute of longitude is 1890.9 varas. It must be remembered that all meridians converge at the north pole, and that a true east-west line must curve in order to cross at right angles all meridians. It is the practice, however, that Texas land surveyors, in almost all instances, run their east-west lines straight; consequently, their lines constantly approach the equator as they proceed from their initial starting point, whether running east or west. Should a surveyor project his transit line half way around the earth he would be in 30° 28' South latitude, or on the equator at one-fourth the way around the earth.

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It has been closely calculated that the deviation from true east or west on a straight line at the latitude of 30° 28' is 30 seconds for each minute of longitude traversed. Therefore, going east, at 1890.9 varas the surveyor would angle left 90° 00' 30" in order to strike the geographical north pole. Going west, he would angle right 90° 00' 30" to the true north point.

In the graph of meridian changes shown on the lower margin of this map, the broken line arrows represent true minute-meridians, while the solid line arrows represent (scale values of angles, for convenience, greatly exaggerated) the north point as written on this map throughout. The angle values as shown are true on a line drawn east and west through the NE corner of survey No. 1, Block 2, I. & G. N. R.R. Co., on which is Howard's Well.

By the use of this graph the true local course of any line shown on this map can be accurately ascertained, and from any known point shown on this map, a surveyor, after establishing a true meridian at that point, can run and measure a direct line to any corner of any survey shown hereon.

The value of such a graph to a map such as this is outstanding in that it takes care of long straight east-west survey lines, and obviates the use of magnetic declination.

The problem of placing the minute-meridians in the graph and placing thereon the proper value is very simple. For instance, by observation, the East line of survey No. 1, Block 2, I. & G. N. R. R. Co., a line marked on the ground, was found to be not north as Kuechler called it, but true N 0° 09' 06" E. The extension south of the east line of said survey No. 1 strikes the graph at a point where it would indicate 0° 09' 06". Therefore, to avoid fractional seconds, a minute-meridian 09' 00" was placed

378 varas west of this point (30 divided by 6 equal 5; 1890.9 divided by 5 equal 378). The broken line arrow is shown coming in on the left, while the survey line north is shown on the right, their difference in angle being 09' 30".

Going east 15 miles, plus 1530 varas, the east line of Block XX, which is parallel on the ground to the east line of survey No. 1, the map still reads north and south, yet glancing down to the graph, 17' 00" is indicated. Therefore, the east line of Block XX runs N 0° 17' 00" E true local course. Should the north line of survey No. 1 at Howard's Well be extended nearly 18 miles west, the line then would be cutting meridians at right angles, the arrows would coincide, the value would be 00' 00", and the course would be true east and west. Going still further west on the same line the dotted arrow would switch to the right of the solid line arrow.

Respectfully submitted, this 30th day of September, 1937, San Angelo, Texas.

Frank F. Friend

Frank F. Friend,
Licensed Land Surveyor of Texas

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Sketch File No. 79

CROCKETT County

SE part of county

Filed 10/9 1937

WM. H. McDONALD, Com'r

Leslie

File Clerk

Descriptive: Report of Surveyor FF Friend to accompany Roll Sketch #43-(10)

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