

ROBERT S. DOD
SPECIAL STATE SURVEYOR

RECEIVED

MAR 28 1911

Referred to Map

ALPINE, TEXAS, Mar. 21 1911

Hon. J. T. Rebison
Commissioner Gen Land Office
Austin, Texas

Dear Sir,

I am sending you the fieldnotes and final report on resurvey of Block 16 G.H. & S.A. Ry. Co. and sketch of same as resurveyed.

I am sorry that it has taken so long to finish this work but the conditions were peculiar.

The river calls with their twists and turns were easy to survey on the ground, and the distance of half a mile was easy to run across the survey the total distance down the river was easy to calculate and check with the total distance of the straight runs, but - when it came to cutting up the meanders into links all the same width and trimming the error down to the proper limit, it was a much more difficult proposition. The first time I went over it and supposed I was through, and then found an error of an omitted call in one of the earlier surveys and to readjust the whole business.

Twice I had work over the whole N 40° E part of the block, and it was a matter of a weeks work each time. Occasionally an error of only a few varas in a course in easting would mean an error of 100 or more in southing and it took time to weed them all out.

I am satisfied that we have it right now, and the work on the ground always did check, nicely.

I had Marsh figure the areas and he is very careful and accurate, I think you will find them correct.

Blk 341 and C 12 will follow very soon, as they are simple compared to Blk 16 with its translation from one meridian to another.

Respectfully

R. S. Dod

Report on Resurvey of Block 16 G.H. & S.A. Ry. Co.
Brewster County Texas.

Hon. J. T. Robison,
Commissioner Gen. Land Office
Austin, Texas

Dear Sir,

I would respectfully submit the following report of the Resurvey of Block 16 G.H. & S.A. Ry. Co. Brewster Co. Texas.

Object of Survey.

To determine true position on the ground of surveys in this block, lying on the Rio Grande, and their position relative to adjacent Blocks and surveys.

Authority for survey.

Appointment as Special State Surveyor, and instructions for the work by the Hon. Commissioner of the General Land Office of Texas.

Method of Survey

This was the same as described in detail in former reports, Solar meridian for courses, and double Stadia readings for distances.

Data for Resurvey work.

Field notes of resurvey of Block 16 by Dennis Corwin from Surveyors records of Brewster Co.

Field notes of Block G 4 as resurveyed and approved by Gen. Land Office.

Field notes of Block G 3 as resurveyed and approved by Gen. Land Office.

Field notes of Block 17, G.H. & S.A. Ry. Co. as resurveyed and approved by Gen. Land Office.

Field notes of Block 1, B.B.B. & C.R.R. Co. from surveyors records Brewster Co.

Field notes of Block 1 A, T. & N.O. Ry. Co. from Surveyors records Brewster Co.

Field notes of Block G 17, from surveyors records Brewster Co.

Field notes of H. Reams Sur. 554 from Gen. Land Office.

Field notes of surveys 1 & 2 Blk. G 16 from surveyors records Brewster Co.

Field notes Sur. 3 Block G 16 from Patent.

Field notes H. Lentz Sur. 559 from surveyors records Brewster Co.

County Map of Brewster County from the Gen. Land Office.

U.S. Topographic map, Chisos and Terlingua Quadrangles.

Date of survey of Block 16.

Original survey is older than all adjacent Blocks and surveys, except Block G 4. Hence we were instructed that all lands except those in Block G 4 should give way to surveys in Block 16 when in conflict.

Starting Point for resurvey.

Survey 8 in Block 16 calls for the West edge of the Grand Canyon of the Rio Grande, which call fixes definitely the starting point of the Block.

The field notes of each survey call for ~~xxx~~ a point on the Rio Grande and to follow the meanders as given, but this is not as definite a call as at first sight, it would seem to be, because the channel of the river changes and in places, shows to have been changed as much as half a mile by flood waters. In other places the solid rock reaches the river and makes the bank permanent.

There are calls for corners with bearing trees, given in Corwin's field notes, and some of these were fairly well identified as related below, but all trees of proper age are gone, cut down or washed away.

The calls for survey 36 Blk. 16 in a big bend of the river are peculiar and as traced on the ground can fit the river in but one place, with a margin of some 100 varas.

Field notes of survey 37 call for a rock mound on the bank of the Rio Grande 100 varas from a creek and give bearings on two peaks $1/2^\circ$ apart.

This spot could be identified and fits the calls except that the peaks are N.W. and not N.E. as called for. But the description of the Peaks as 'the figure of a Priest kneeling at the Altar' identifies them beyond question, and to reach a point S.W. from this peak as called for would move the corner several miles west, whereas if the call reads N.W. instead of N.E. all calls are satisfied as well as the connection with the unmistakable meander line on adjoining survey 36.

The contour along the river of surveys 36 & 37, the creek running into the river, and the call for the twin Mule Ear Peaks half a degree apart are sufficient to identify this corner.

At this point the course of side lines of surveys changes from N. 40° E. to North, and Mr. Corwin notes finding an old cottonwood at the upper corner

of survey 36 which he identifies as the bearing given in the original survey of the Block.

The H.Reams survey has both the original south east and south west corners on the ground and calls for S.E.38 Blk.16 near a creek.The location of S.E.corner 38,from the above identified S.E.corner of sur 37,will give the connection with the Reams survey,although there is an excess in distance.

The H.Lentz survey 559,calls to begin 1953 varas south and 8556 varas west of the south west corner of the Reams survey at the S.E.(should be N.E.)corner 28 Blk.16.The above location of S.E.corner 37,and the run up the river to N.E.28,and the position on the ground of the S.W.cor.Reams survey,places the S.W.corner of H.Lentz survey within 35 varas of the N.E.corner of sur. 28,called for as its starting point.Showing that the resurvey agrees with the early location of these surveys notwithstanding the intrusion on the County map of other lands between the Lentz survey and survey 28.

From survey 36 to survey 44 the surveys call to be on the river and field notes of the meanders are given,but the line following these meanders as given in the field notes leaves the river as much as two miles to the north.

Hence we had to abandon these false river calls and make the surveys each half a mile wide ,as called for, and extending from the actual river as found on the ground,north to their connection with surveys lying north.

To sum up,the only calls in the field notes of Block 16 absolutely identified on the ground were The South corner sur,1 and S.W.sur 2,

The east line of survey 36,

The S.E.cor sur 37,confirmed by connection with original S.W.554,and S.W.559 based on S.W.554.

Instructions for resurvey.

Reports of progress relating facts as found on the ground were sent in to the General Land Office from time to time ,and the following instructions were issued for the final resurvey:

To start each survey as called for at the river corner of the survey next above on the river.

Meander the river far enough to give each survey its width of 950 varas.

Run the east side line the distance called for,

Run the north line 950 varas as called for,

and close on the point of beginning.

Note. This was done in the case of all surveys except 23,Owing to an error in Mr.Cerwins survey of 21 his survey 23 stood on the river where course and distance bring survey 24 by our resurvey,and his east line of 23 was the short line,whereas with our location of 23 it was the long line(See sketch).To limit our 23 by his distance for east line would cut down the acreage nearly one half,so we added his east and west lines and made an average and ran our lines to make an equal average.

All excess from mouth of Grand Canyon through the surveys running $\approx 40^\circ$ E to be thrown into survey 36.

Surveys 37 to 44 inclusive,to be based on the river and run 950 varas east,and then north to reach surveys north and cover all land between the river and southlines of said surveys.

Surveys north ,based on original Reams corners to be put in from these corners according to their field-notes,and these being defective to accommodate the calls to the facts on the ground,preserving the connecting calls and distances where possible.

Marked corners of resurvey to be placed some on the river,some on north line of surveys and others where most convenient for finding and retracing lines of this survey.

History of Resurvey.

A meander line was run down the river from the Grand Canyon ,at B.M.2146, to a point near S.E.corner sur 38,at B.M.2053,and this connected with original Reams corner S.W.554 and the south line of 554 run.

This line was checked by running west from B.M to B.M.avoiding errors liable to occur from the many short courses necessary in meandering the river.This survey was drafted and reported to Gen.Land Office.This showed an excess in distance of some 900 varas over that called for in the field notes.This was partly accounted for by finding what was probably Mr.Cerwins S.E.corner sur.21 nearly a mile below the S.E.corner sur.20,partly by accumulation of small errors in course and distance in the river meanders of Cerwins field notes.

This survey also showed a small excess between G 4 and Blk.16 along north lines of surs 1 to 6,and a shortage ~~xxx~~ in 7 & 8,and in 11 & 12,

and a small conflict in 16 & 17.

This survey also showed that the actual position of the Rio Grande differed from that shown on the County Map between S.E. cor 8 and S.E. 38. The River on the county Map near the middle point of this distance shows to be some 5 or 6 miles further South-east than it was found to be on the ground.

The south line of Blk. G4 had been put in from original corners and connections with Blk 17 at the mouth of the Grand Canyon, and the north line of Blk. 16 was determined by the position of the river, hence the lands shown on the map between the south line of G 4 and north line of Blk 16, would be encroached on by Blk. 16 and in places wiped out as being junior surveys. Block 1 B.B.B. & C. is based on the Reams survey, surveys 21 & 22 intrude on sur 11 of this blk. which is the junior survey.

Also the Reams and Lentz surveys and Blk G 16 are much nearer the river than shown on county map, and surveys inter posed between them and north line Block 16 will also lose.

Completed Survey.

The final survey was made by running from the South corner sur 1 & S.W. cor sur. 2, N 40° E past the South corner 1 Blk. 17, to the east corner of same sur.

Thence along the south line of Blk. G4 to N.E. cor sur 6 Blk. 16 marking each corner. On S 50° E across survey 7, then down the east line of sur 7 to the river.

Thence along the river to S.E. cor 12. Here we reached a point in the bed of Blue Creek, which has been widened by erosion. The original call was a point on the bank of Blue creek from which a post in front of Jacal brs N 36 1/2° E 180 varas. There is an old Jacal N.E. of the point we reached.

We found a rock mound set on the west bank of Blue creek near the fallen trunk of a cottonwood and were told Mr. Mess, Co. Sur. had made it. Corwins cor Mess's corner and the point we reach by course and distance are close together at this point.

The east line of sur 12 if given the full distance called for would intrude on sur 315 G 4, so we stopped it at the line of 315 as instructed.

We found it necessary to place our permanent corner mounds back from the river meander line, on the bluff, otherwise they would soon disappear in the sand and floods. It was also advisable, as a check on the meander line to run the half mile across the surveys on as straight a course as possible. The low ground back from the river is so covered with a dense growth of mesquite and small brush that it is impossible to run a line without cutting out the brush, which would mean heavy work and consequently slow progress therefore we ran across surs. 13. 14. 15 parallel to the north line and put mounds on the side lines calling for distance to the river. Here we tied to B.M. 2124. as shown on sketch.

The stretch between B.M. 2124 & 2134 was twice run, once on the rivers edge and once from B.M. to B.M. The country covered by these surs, 15 to 20, is a rough spur of the mountains which runs down to the river. It is very rough available only for grazing and contains no water except at the river.

From B.M. 2134 we ran S 50° E 562 varas for the S.E. corner sur 20.

I here made an error in calculation which left sur 19, 43 varas short in width as marked on the ground. I did not discover the error until we had completed the survey to East line 35. To correct the error would have meant to change every corner from 19 to 36, our horses and men were worn out, and it did not seem worth the time it would take to correct this error as all the land is State land and no other rights intervene. So I left sur 19 only 907 varas wide.

From survey 20 we ran a line S 50° E straight across the surveys putting in corners on east lines and calling for the river. The intention was to put the corners where they could be readily found and the line between them easily followed. The B.M. is on the river road and easily found and any one can start there and easily pick up the corners one after another, which would not be so readily done on a meander or traverse line. To have placed the corners on the river would have meant a crooked line to follow from one corner to the other, and in some cases, as in sur. 24, the east and west corners would be over a mile apart N. & S.

To have placed them on the north line in the roughs would have made it difficult to find them and impossible to run straight from one to the other, and impossible to chain the distances.

From the corner on the east line of Sur. 26 we dropped 280 varas to reach better country for the line, and tied the east cor of sur. 28 to B.M. 2087 on the road.

We ran across 5 sections on this line then N. 40° E 924 vrs.

and on across two sections more.

Then we ran north 800.7 varas and tied to B.M.2140 (2139 on Map)

Then S 50° E to the east line of 35. Here we ran a line across to connect with the corner set on west line of sur 37 which was placed 950 varas west of the point identified as the original corner of S.E.37, as above related.

down

We ran a line from S.W.36 ~~xxxxx~~ the river to S.E.37, which is 31 varas south and 838 varas west of B.M.2053.

This run closed with an error of 8 varas in easting and 36 in northing from the Grand Canyon to B.M. 2053. This error was distributed.

This method of survey as related, threw the accumulated excess and the 43 vara error in 19, into survey 36 giving it 1856 varas on the north line instead of the 950 called for, giving an excess of 366.3 in acreage.

The courses and distances run are given on sketch and the meanders are given in the field notes of each section.

Mr. Cerwins west line of 36 would be some 900 varas east of ours but, as related above, we found some 700 of this in his error in sur 21.

Note. The field notes of survey 37 call to begin at the N.E. corner of 36, and follow the river to a rock mound set 100 varas west of a creek, from which "the figure of a Priest kneeling at the Altar" bears N 27° E & the Altar N 27 1/2° E. the Altar is west of the Priest on the ground, so the call must be N 27° W to the Priest and N 27 1/2° W to the Altar. E for W may be a clerical error.

We made the run round the river to this corner then ran west 950 varas distance called for for width of 37, put a corner here on the west line and found on running south that when we reached North line 36 we were 2202 varas N 50° W of the corner of 36. It seemed that the call '950 west' was the prevailing call, and that the call 'south to the beginning' would not alter the width of the survey.

From this point the surveys call to run North and south instead of N 40° E.

My instructions were to run them from the river north to the surveys lying south of the Reams corner, which surveys call for Blk. 16. Sur 1 G 16 calls to begin 1579 varas east of the Reams S.W. corner which is on the ground. Thence west 4183 varas, thence south 1781, thence east 2664, south 38 east 569, ~~xx~~ (leaving out 950 varas easting to close) thence north 1666, whereas the 1781 on west line and drop of 38 south requires 1819 to close.

We closed on north and west line distances as probably the more correct.

Sur 2 G 16, would by its calls intrude on survey 37, we stepped it at east line 37.

Field notes of Harris sur. 3 were not on record here but the Patent was. The field notes in the patent will not close. We put it in as shown on County Map, and followed what field notes were given stretching east and west calls to close.

The north lines of these surveys are fixed by the original Reams corners and original corner 27 G 3. The S.E. corner of Reams survey calls for 306 varas north of S.W. 27, but on the ground it is about 8 varas west of the line but as both old monuments are on the ground we simply repeat the old call, although there is really a little wedge 8 varas wide at one end and 606 varas long not covered by the Reams east line or the west line 27. G 3.

The distance between the Reams corners measures 3702 varas instead of 3494 as called for (See sketch).

From S.E. 37 we meandered the river putting in the corners of each survey. In some cases the rock mounds had to be set at a distance from the actual corner, and are so noted in the field notes, in order to place them above high water mark.

The courses and distances run and bearings of corners are given in the field notes of the individual surveys.

The west line of Block G 3 is marked by resurvey corners as shown on sketch, and the surveys in G 17 call for G 3, and having run the surveys in Block 16 each 950 varas wide, we still fail to reach west line of G 17 by 1264 varas.

Sur. 44 Blk. 16 is the elder survey and there is no corner or call to carry it further east than its 950 varas, but survey 42 G 17 does call for the east line of sur 44 Blk 16. I am sending in field notes for this 1264 vara strip so that you may know its position and area and distribute it where it belongs.

The sketch shows the course and distance of all lines between Blk 16 north line and the south lines of BlkS and surveys north, Blk. BBB&C, G16 and G4, and this shows what land is left for surveys on county map lying between these blocks.

The details of the work have been reported from time to time and it would seem unnecessary to repeat them here. The calculations for latitude and departure of the river courses have been carefully checked, and the total agrees with that of the direct run from B.M. to B.M., and the later run from corner to corner.

The area was figured by double meridian distances from field notes of each survey.

In as complicated a matter as adjusting the calls for the tortuous course of the river to the width of the surveys throughout the Blk, errors will creep in, but we have checked the work on the ground and checked our calculations by both meridians as shown by the triangles in red on the sketch and I believe the field notes will be found correct and balance within a limit of 1 1/2 varas to each survey or 50 varas in the whole run.

Respectfully

Special State Surveyor.

Alpine, Texas March 20 th 1911

*Alpine, Texas
March 20, 1911
Special State Surveyor
J. H. ...
...*

The sketch shows the course and distance of all lines between Bix 16
north line and the south line of Bix 2 and surveys north, Bix. BB&C, C18
and 19, and this shows what land is left for surveys on county map lying
between these pieces.
The details of the work have been reported from time to time and it
would seem unnecessary to repeat them here. The calculations for latitude
and departure of the river course have been carefully checked, and the ca-
lculations for bearing and distance of the direct run from B.M. to B.M. and the latter run
from corner to corner.

The area was figured by double meridian distances from field notes of
the river. The width of the river was measured at several places and the
average was used for the width of the river. The area was also figured
by the method of double meridian distances from the direct run from B.M. to
B.M. and the latter run from corner to corner.

Sketch File No. C. 1.

(South) Brewster County

Dod's Report.

Resurvey - Bix. 16, G. H. & S. A. Ry. Co.

Filed March 23, 1901.

J. H. Walker, Comm.

File Clerk

Descriptive: On Rio Grande

In S.W. Cor. of Map of

5 1/2 of County.

See Sk. File C. for Sketch.

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