

Notes, Albert G. Wolcott

Base Line &

Ph 14 R 15 E.

Dec 1/900

This report on same

No. 1332

BOOK 1332

Copy drawn. with copy of
note to Cairn. G. L. O.
Jan'y 10, 1901.



Florence, Arizona, December 1st, 1900
George Christ, U. S. Surveyor General,

Tucson, Arizona,

Sir:

On the 17th day of February 1900, I received a letter from Mr. W. B. P. Hollyday Examiner of Surveys, of which the followin is a copy.

Tucson Arizona, February 15th, 1900.

Albert T. Colton U. S. D. S.
Florence, Arizona

Sir:

Upon examining the surveys executed under your contract No 52, I found errors of such a charactor in the work that the survey cannot be accepted in its present condition. The errors consisted chiefly in chaining. I ran about 33% of the base line run by you and a great difference in chaining was found on many of the lines. This line being the principal base of the system of public surveys in this territory of course is a most important line and the chaining should be as accurate as possible, as so much depends upon it. I found all your corners for which I looked properly ~~had~~ established and the alignment in most cases over all the lines run by me was good. I here give you the notes of such lines run by me.

Beginning at the corner of Tps. L N. R.s 15 & 16 E.

I ran

West

40.20 $\frac{1}{4}$ cor. 0.04 chs. N.

I continue my line

80.23 cor. 35 & 36 0.12 chs. N.

West

on S. Bdy. Sec 35

40.13 $\frac{1}{4}$ cor 0.08 chs N.

I continue my line

80.33 cor. 34 & 35 0.12 chs. N.

From cor. 34 & 35

West

South Bdy. Sec. 34

37. 54 $\frac{1}{4}$ Cor 0.04 chs. N.

I continue my line

79.00 Cor. 33 & 34 0. 08 chs. N.

West

South Bdy. Sec. 33

38.46 $\frac{1}{4}$ Cor. 0.40 chs. N

I continue my line

80.36 Cor. 32 & 33 0.20 chs. N.

From Cor 32 & 33

West

on S. Bdy Sec 32

38.75 $\frac{1}{4}$ cor 0.16 chs N

continue my line

78.75 Cor 31 & 32 0.16 chs N.

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From Cor.

West.

S. Bdy 31

38.75 $\frac{1}{4}$ Cor. 0.04 chs. N.
continue my line

78.60 Cor Tps. 1 N Rs 14 & 15 E 0.10 chs N.
From Tp cor. West.
on S Bdy Sec. 36

38.16 $\frac{1}{4}$ Cor 0.20 chs N
Continue my line

78.26 Cor. 35 & 36 0.23 chs N.

From SC cor sec 32 & 33 T. 1 N. R. 10. E.

West

on S. Bdy Sec 32

39.66 $\frac{1}{4}$ cor 0.02 chs S.
continue my line

79.32 cor 31 & 32 0.02 chs N.

From cor. West

on S. Bdy Sec 31

39.90 $\frac{1}{4}$ cor 0.05 chs S.
continue my line

79.90 cor Tps. 1 N. Rs. 9 & 10 E. 0.08 chs. S.

From cor. as I could not get a good solar line I chain
West

on S. Bdy Sec 36 T 1 N R 9 E.

39.75 $\frac{1}{4}$ cor. I set up my instrument over this cor. and run
west continuing my chaining as 39.75 at $\frac{1}{4}$ cor.

79.40 Cor 35 & 36 0.04 chs S.

From cor.

West

on S Bdy Sec 35

39.75 $\frac{1}{4}$ cor 0.04 chs S.
continue my line

79.57 cor 34 & 35 0.08 chs S.

From cor

West

S. Bdy Sec 34

39.85 $\frac{1}{4}$ cor 0.03 chs N.
continue my line

79.52 cor 33 & 34 0.01 chs N.

From S. C. cor. 32 & 33 T 1 N R 10 E

I run

East

on S Bdy sec 33

40.50 $\frac{1}{4}$ cor 0.05 chs S.
continue my line

80.30 cor 33 & 34 0.10 chs S.

from cor

East

on S Bdy 34

39.70 $\frac{1}{4}$ cor 0.03 chs S
continue my line

79.00 Cor 34 & 35 0.04 chs S.

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Out of fourteen (14) miles run, nine(9) miles of this line show very poor chaining, and two other miles, the S bdy of Secs 34 & 35 T 1 N R 9 E come barely within the extreme limits allowed by the manual. I ran six (6) miles of the subdivisional lines in T 1 N R 15 E I give the notes below.

From cor Secs 23,24,25,26

I run betw 24 & 25

East

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40.25 1/4 cor 0.11 chs N.
continue my line

80.35 cor on R line 24, 25, 19 & 30 0.25 chs N.

From Cor

South

on R line

39.90 1/4 cor 0.05 chs W
continue my line

80.00 cor 25,36, 30 & 31 0.12 chs W.

From cor

South

Bet 31 & 36

40.16 1/4 cor 0.18 chs west
continue my line

80.35 Cor T 1 N Rs 15 & 16 E 0.33 chs west

From cor sec 23,24,25 & 26

I run bet 23 & 26

N.89° 57' W

39.75 1/4 cor 0.20 S
continue my line

80.77 cor 22,23, 26 & 27 0.01 chs S

From cor bet 26 & 27

S 1' E.

39.70 1/4 cor 0.02 chs E
continue my line

79.60 cor 26,27 34 & 35 0.35 chs E

From cor bet 24 & ~~26~~ 35

S 1' E

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40.00 1/4 cor 0.11 chs W
continue my line

80.20 SC cor 34 & 35 0.21 chs west

~~XX~~

From cor of sec 22, 23 26 & 27 I run

S 89° 59' W

Bet 22 & 27

40.00 1/4 cor 0.25 chs N.
continue my line

80.30 cor 21,23, 27 & 28 0.35 chs N.

From cor bet 21 & 22

N. 1' W

40.10 1/4 cor 0.02 chs W
continue my line

78. 66 cor 15, 16, 21 & 22 0.06 E

Out of these last eight (8) miles it is found that the chaining on three of them exceeds the limits allowed by the manual. the alignment over your entire work is good and also are your corners but the discrepancy in chaining is too great for the work to be accepted in its present condition.

The shortness of the chaining on the base line will necessarily affect the position of T 1 N R 15 E and if it is found when you rechain this base line that the distance from the S. W. cor of T 1 N R 9 E to the S. W. cor of T 1 N. R. 15 E is not 36 miles the subdivisional lines in T 1 N. R 15 E will have to be changed to fit the conditions. You are hereby instructed to return to the field at the earliest convenient time and correct your surveys under this contract that they may conform to the requirements of the manual. as soon as these corrections are made you will file amended notes with the Surveyor General of Arizona in order that the matter may be taken up by the Hon; Commissioner of the Gen. L.O. for such further action as he may direct.

Very respectfully,
 H. B. P. Hollyday
 Examiner of Surveys.

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I was unable to return to the field on this work until November, when I carefully rechaind twenty miles of the base line.

As there is considerable difference between Mr. Hollyday's measurement and my chaining over several of the lines, I give both figures on such lines as were reported as run by Mr. Hollyday.

From cor. to T. 1 N. Rs 8 & 9 E. I run East
 on S. bdy. sec. 31.

40.00 $\frac{1}{4}$ cor.

80.15 cor. 31 & 32.

E. on S. bdy. sec. 32.

39.90 $\frac{1}{4}$ cor.

79.90 cor. 32, 33.

E. on S. bdy. sec 33

39.90 $\frac{1}{4}$ cor.

79.85 cor. 33, 34

E. on S. bdy. 34

39.90 $\frac{1}{4}$ cor. By Mr. Hollyday 39.67

79.75 cor. 34, 45. 79.52

E. on S. bdy 35

40.12 $\frac{1}{4}$ cor. 39.82

80.07 cor. 35, 36. 79.57

E. on S. bdy 36

40.05 $\frac{1}{4}$ cor. 39.65

79.90 cor. ~~XXX~~ T. 1 N. Rs. 9 & 10 E. 79.40

E. on S. bdy. 31

40.15 $\frac{1}{4}$ cor. 40.00

79.95 cor. 31, 32. 79.90

E. on S. bdy. 32

39.95 $\frac{1}{4}$ cor. 39.66

79.85 cor. 32, 33. 79.32

E. on S. bdy 33

39.85 $\frac{1}{4}$ cor. 40.50

79.90 cor. 33, 34. 80.30

E. on S. bdy. 34

39.95 $\frac{1}{4}$ cor. 39.70

80.05 cor. 34, 35. 79.00

E. on S. bdy 35

40.02 $\frac{1}{4}$ cor.

80.10 cor. 35, 36

E. on S. bdy 36

40.15 $\frac{1}{4}$ cor.

80.20 cor. T 1 N. Rs. 10 & 11 E

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Mr. Hollyday reports seven miles of this line as 2.99 chs. short, while I find the same seven miles but 0.53 chs. short, or less than eight links per mile. I find the twelve miles short but 0.33 chs. or less than 3 links per mile.

From cor. T. 1 N. Rs 15 , 16 E.

I run West on S. bdy. 36

40.10	¼ cor.....	by Mr. Hollyday	40.20
80.17	cor. 35, 36.....		80.23
	West on S. bdy. 35		
40.16	¼ cor.....		40.13
80.25	cor. 34, 35.....		80.33
	West on S. bdy. 34		
40.02	¼ cor.....		<u>37.54</u>
	I rechain this half mile very carefully and get 39.90, mean 39.96		
81.40	cor. 33, 34.....		<u>79.00</u>
	West on S. bdy. 33		
38.65	¼ cor.....		38.46
80.16	cor. 32, 33.....		<u>80.36</u>
	West on S. bdy. 32		
38.87	¼ cor.....		38.75
78.72	cor. 31, 32.....		78.60
	West on S. bdy. 31		
39.88	¼ cor.....		38.75
79.94	cor. Tp. 1 N. Rs. 14 & 15 E....		<u>78.40</u>

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Mr. Hollyday reports these six miles as 3.08 chs. short while I find them 0.60 chs. long (10 links per mile)

I here call attention to the S. bdys. of secs. 32, 33 & 34 T. 1 N. R. 15 E
 S. bdy. 34 is 81.40 chs.
 S. bdy. 33 is 80.16 chs.
 S. bdy. 32 is 78.72 chs.
3) 240.28 chs.

80.09 chs. per mile,

which distance is practically correct, but the cors. to secs. 32 & 33, 33 & 34 had been moved, as I found by marks and stones the points where they were originally set, and I think they were moved by my corner man, for the following reasons:

While on the original survey, I discovered an error in chaining on the west bdy. of sec. 22, I had an accident and was crippled for a few days and sent my corner man back with instructions as to corrections for cors. from 22 to 34 and he evidently moved cors. to 32 & 34 instead, and did not correct cors. for 22 to 34, as I found on this run;

I have now made the proper corrections at all of these cors.

I also reran the lines bet. secs. 24 & 25, 23 & 26, 22 & 27, and give the distances below.

Bet. 24 & 25 , West.

40.00	chs, ¼ cor.....	By Mr. Hollyday	40.10
80.25	chs. cor. secs. 23, 24, 25 & 26.		80.35
	bet. 23 & 26 , N. 89° 57' W.		
40.07	¼ cor.....		39.75
80.27	cor. 22, 23, 26 & 27.....		80.77
	bet. 22 & 27, S. 89° 59' W		
40.00	¼ cor.....		40.00
80.25	XI cor. 21, 22, 27 & 28.....		80.30

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I was informed by parties who were with Mr. Hollyday on part of this work, that over rough ground and conons he used a stadia rod instead of a chain which accounts for the difference in our measurements, as I used a chain, and had careful and experienced chainmen.

All experienced Engineers and Surveyors know that the stadia method without great care, careful observations and calculations, is very inaccurate, and over sloping ground is especially so.

As I have found the distance on the base line to be correct and the position of T. 1 N. R. 15 E. is not changed, I submit my original field notes as the correct notes of this survey.

Respectfully,

Albert T. Colton

U. S. Depty. Surveyor.

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