

3636

62  
ORIG

Book "G"

4-679

BOOK 3636

# FIELD NOTES

OF THE SURVEY OF

Part of the West Boundary,

Part of the South Boundary and

Part of the Subdivision of

TOWNSHIP 31 NORTH, RANGE 14 WEST

Of the Gila and Salt River Base and Meridian,

In the State of Arizona

EXECUTED BY

William E. Hiestler, U.S. Surveyor  
and

Benjamin J. Kinsey, U.S. Transitman

In the capacity of U. S. Surveyors, under Special Instructions dated Oct. 12, 1916, issued by the United States Surveyor General to govern surveys included in Group No. 73, which were approved by the Commissioner of the General Land Office, October 24, 1916, and Assignment Instructions dated Aug. 11, 1921 and March 30, 1922.

Survey commenced April 13, 1922.

Survey completed April 28, 1922.

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1A

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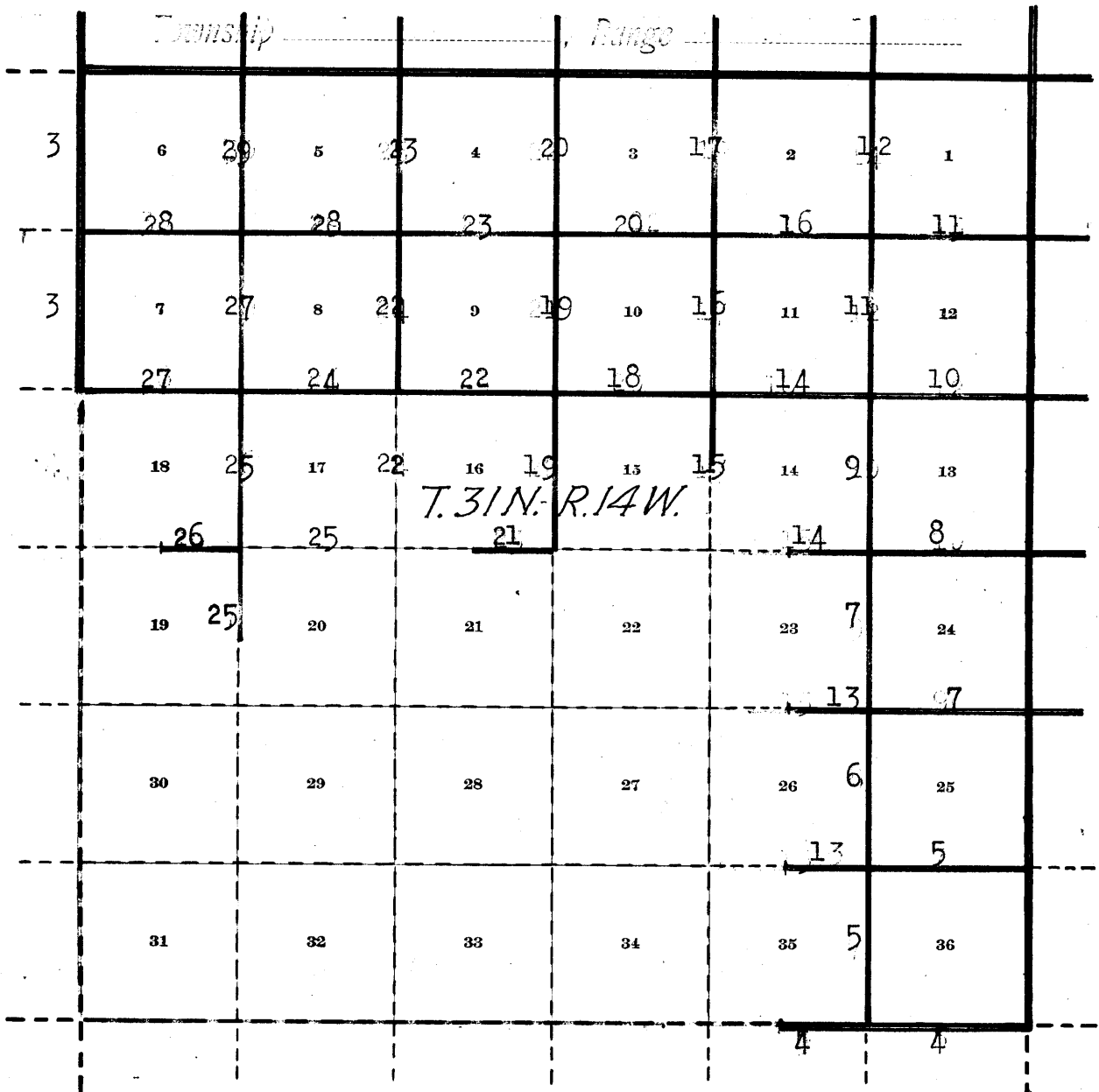
Book "G"

Group 73 - Arizona.

Township 31 North, Range 14 West.

BOOK 3636

## INDEX DIAGRAM.



————— Lines surveyed under this group.

- - - - - Unsurveyed.

Book "G"

Group 73 - - Arizona.

Township 31 North, Range 14 West.

BOOK 8686

DATE DIAGRAM  
1922

For dates of execution of survey of this line, see Book "F."

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For dates of execution of survey of this line, see Book "H"

————— Indicates lines surveyed by William E. Hiester,  
U.S. Surveyor, on dates shown thereon.

————— Indicates lines surveyed by Benjamin J. Kinsey,  
U.S. Transitman, on dates shown thereon.

Surveys herein described were executed on dates shown on diagram on page 1 hereof, by William E. Hiester, U.S. Surveyor, and Benjamin J. Kinsey, U.S. Transitman, using Buff transit No. 9223, and Young and Sons transit No. 8532, each equipped with full vertical circle and Smith solar attachment. Unless otherwise specified, all azimuth determinations are accomplished with the solar attachments.

We examine the adjustments of the instruments & find no errors; then, to test the solar apparatus by comparing their indications resulting from solar observations made during a.m. and p.m. hours, with a meridian determined from observation on Polaris, proceed as follows:

April 7, 1922: At camp near the cor. of secs. 21, 22, 27 and 28, T. 32 N., R. 14 W., Gila and Salt River Base and Meridian, Arizona, in latitude  $36^{\circ}9'N.$ , longitude,  $113^{\circ}47\frac{1}{2}'W.$ , at 6h.44m.p.m., l.m.t., observe Polaris at the hour angle west of the meridian, making four observations, two each with the telescope in direct and reversed positions, and reading the deflection angles to a reference mark  $1^{\circ}30'$  to the east.

Azimuth of Polaris =  $1^{\circ}22\frac{1}{2}'$ ; therefore, the bearing of reference mark =  $N.0^{\circ}7\frac{1}{2}'E.$

April 10, 1922: At 9h.00m.a.m., l.m.t., set off  $36^{\circ}9'N.$ , on the latitude arcs;  $7^{\circ}50'N.$  on the declination arcs, and determine meridians with the solars, which agree with the true meridian.

At app. noon, with the latitude arcs unchanged, observe the sun on the meridian; the resulting readings of the declination arcs are  $7^{\circ}52\frac{1}{2}'$ , which agree with the computed declination of the sun.

At 3h.00m. p.m., l.m.t., with the latitude arcs unchanged, set off  $7^{\circ}55\frac{1}{2}'N.$  on the declination arcs, and determine meridians with the solars, both of which agree with the true meridian.

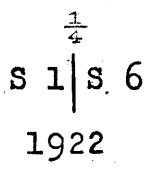
As all of the solar observations made during the usual hours of solar work come within 1' of the true meridian, we conclude that the adjustments of the instruments are satisfactory.

Unless otherwise specified, all measurements are made with Lufkin and Lallie steel tapes 5 chains in length, compared with a standard steel tape, and found correct. The measurements are made on the slope, the slope angles determined with clinometers, and the slope distances reduced to the true horizontal equivalent for entry in the field notes.

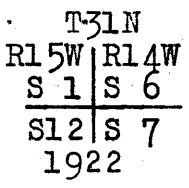
Survey of part of West bdy. of Township 31 North, Range 14 West. 3

Chains.

40.00 From the cor. of Ts. 31 and 32 N., Rs. 14 and 15 W., described in Book "F,"  
 South, on true line, bet. secs. 1 and 6.  
 Over nearly level land, thru. dense undergrowth.  
 Set an iron post, 3 ft. long, 1 in. in diam., 30 ins. in the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

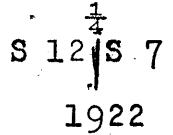


80.00 No bearing trees available. Dig pits, 18x18x12 ins., one each N. and S. of cor. 3 ft. dist.  
 Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground for cor. of secs. 1, 6, 7 and 12, marked on brass cap,

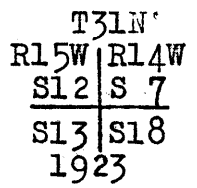


No bearing trees available. Dig pits, 18x18x12 ins., one each NE., SE., SW. and NW. of post, 3 ft. dist.  
 Land, nearly level.  
 Soil, gravelly, 2nd rate.  
 Timber, none.  
 Undergrowth, black brush, sagebrush, cactus and grass.

40.00 South, on true line, bet. secs. 7 and 12.  
 Over level land, thru. scattering undergrowth.  
 Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,



80.00 No bearing trees available.  
 Dig pits, 18x18x12 ins., one each N. and S. of cor. 3 ft. dist.  
 Set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, for cor. of secs. 7, 12, 13 and 18, marked on brass cap,



No bearing trees available. Dig pits, 18x18x12 ins., one each NE., SE., SW. and NW. of cor., 3 ft. dist.  
 Land, level.  
 Soil, gravelly, 2nd rate.  
 Timber, none. Undergrowth, sage brush and black brush.  
 Good grass.

At 14.81 chs. S. of the cor. of secs. 7, 12, 13 and 18, this Tp. boundary intersects the north or right rim of the Colorado river Canyon; therefore, it is impracticable to survey the line beyond said sec. cor.

4 Survey of part of South bdy. of Township 31 North Range 14 West.

Chains.

From the witness cor. to the cor. of Ts. 30 and 31 N., Rs. 13 and 14 W. (2.76 chs. N. of cor. point) described in Book "H," West, on an offset line in sec. 36.

Over rolling land, thru scattering undergrowth. Ascend gentle NE. slope. At 8.96 chs. W. from witness cor., offset South, 2.76 chs. to true line at Thence, West, on true line, bet. secs. 1 and 36, continuing measurement from Tp. cor. point.

8.96 Descend 50 ft. 13.00 Wash, 20 lks. wide, course N.

Ascend 36 ft., to 26.40 Wash, 10 lks. wide, course NE.

Ascend 63 ft., over gradual NE. slope, to 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 10 ins. in the ground to bed rock, deposit a stone marked with a cross (x) at base of post, and raise a mound of stone around post, for 1/4 sec. cor., marked on brass cap,

1/4 S 36  
S 1  
1922

from which,

A pinyon, 10 ins. in diam., brs. N. 43° E., 388 lks. dist., marked 1/4 S 36 BT.

No other bearing trees available.

80.00 Thence over nearly level land, ascending slightly to Set an iron post, 3 ft. long, 2 ins. in diam., 8 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for cor. of secs. 1, 2, 35 and 36, marked on brass cap,

T31N R14W  
S35 | S36  
S 2 | S 1  
T30N  
1922

No bearing trees available.

Land, rolling and nearly level. Soil, rocky and gravelly, 3rd rate. Timber, none. Undergrowth, black brush.

-----  
West, on true line, bet. secs. 2 and 35 (E. 1/2). Over nearly level land, thru scattering timber and dense undergrowth. Asc. slightly to

35.00 Enter rolling land. Asc. 17 ft. to 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 20 ins. in the ground to bed rock, supported in a mound of stone, for 1/4 sec. cor., marked on brass cap,

1/4 S 35  
S 2  
1922

from which,

A pinyon, 6 ins. in diam., brs. N. 1 1/2° E., 161 lks. dist., marked 1/4 S 35 BT.

A pinyon, 16 ins. in diam., brs. S. 4 3/4° E., 201 lks. dist., marked 1/4 S 2 BT.

At 6.13 chs. W. of this cor., the Tp. bdy. intersects the N. or right rim of the Colorado River Canyon; therefore, discontinue the survey of the Tp. bdy. at this 1/4 sec. cor.

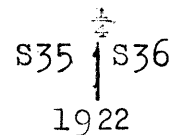
Land, nearly level and rolling. Soil, gravelly and rocky, 3rd rate. Timber, pinyon. Undergrowth, black brush.

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Survey of part of Subdivision lines of Township 31 North, Range 14 West

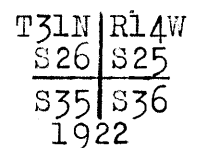
Chains.

From the cor. of secs. 1, 2, 35 and 36, on S. bdy. of Tp.,  
 hereinbefore described,  
 N.0°1'W., bet. secs. 35 and 36.  
 Over nearly level bench land, thru. scattering timber and  
 dense undergrowth. Desc. slightly to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in  
 the ground to bed rock, supported in a mound of stone,  
 for  $\frac{1}{4}$  sec. cor., marked on brass cap,



from which,  
 A pinyon, 10 ins. in diam., brs. N.73 $\frac{1}{2}$ °E., 154 lks.  
 dist., marked  $\dagger$ S 36 BT.  
 A pinyon, 15 ins. in diam., brs. N.28 $\frac{1}{2}$ °W., 171 lks.  
 dist., marked  $\dagger$ S 35 BT.

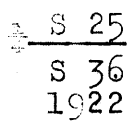
57.50 Enter rolling land. Desc. 75 ft., over NE. slope.  
 69.70 Wash, 20 lks. wide, in draw, course SE.  
 Ascend 55 ft., over SE. slope, to  
 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 8 ins. in  
 the ground to bed rock, supported in a mound of stone,  
 for cor. of secs. 25, 26, 35 and 36, marked on brass cap,



from which,  
 A pinyon, 14 ins. in diam., brs. N.79°E., 92 lks.  
 dist., marked T31N R14W S25 BT.  
 A pinyon, 14 ins. in diam., brs. S.22 $\frac{1}{2}$ °E., 121 lks.  
 dist., marked T31N R14W S36 BT.  
 A pinyon, 6 ins. in diam., brs. S.33 $\frac{3}{4}$ °W., 153 lks.  
 dist., marked T31N R14W S35 BT.  
 A pinyon, 8 ins. in diam., brs. N.32 $\frac{1}{2}$ °W., 39 lks.  
 dist., marked T31N R14W S26 BT.

Land, nearly level and rolling.  
 Soil, rocky and gravelly, 3rd rate.  
 Timber, cedar and pinyon.  
 Undergrowth, black brush.

40.00 East, on a random line, bet. secs. 25 and 36.  
 Set temp.  $\frac{1}{4}$  sec. cor.  
 80.02 Fall 5 lks. S. of the cor. of secs. 25, 30, 31 and 36, on E.  
 bdy. of Tp., described in Book "H."  
 Thence,  
 S.89°58'W., on a true line, bet. secs. 25 and 36.  
 Over rolling land, thru. scattering timber and dense  
 undergrowth. Asc. 15 ft., over NE. slope.  
 6.55 Descend 35 ft., over SW. slope.  
 19.50 Draw, course SE. Asc. 16 ft., to  
 23.50 Spur, slopes NE. Asc. 32 ft., to  
 30.00 Descend 34 ft.  
 36.90 Draw, course N. Ascend 20 ft. to  
 40.01 Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in the  
 ground to bed rock, supported in a mound of stone, for  
 $\frac{1}{4}$  sec. cor., marked on brass cap,



from which,  
 A pinyon, 14 ins. in diam., brs. N.18 $\frac{3}{4}$ °W., 120  
 lks. dist., marked  $\dagger$ S 25 BT.  
 A pinyon, 10 ins. in diam., brs. S. 65 $\frac{1}{2}$ °E., 48  
 lks. dist., marked  $\dagger$ S 36 BT.  
 Ascend 35 ft.

## 6 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.									
45.00	Descend 35 ft., to								
53.00	Wash, 20 lks. wide, course N.								
	Descend 20 ft. to								
57.00	Wash, course N. 60° E.								
	Ascend 100 ft., over SE. slope, to								
80.02	The cor. of secs. 25, 26, 35 and 36.								
	Land, rolling.								
	Soil, gravelly, 3rd rate.								
	Timber, pinyon and cedar.								
	Undergrowth, black brush.								
	N. 0° 1' W., bet. secs. 25 and 26.								
	Over rolling land, thru. scattering timber and dense under-								
	growth.								
	Ascend 55 ft., over SE. slope.								
30.30	Descend 23 ft.								
33.90	Draw, course E.								
	Ascend 34 ft. to								
40.00	Set an iron post, 3 ft. long, 1 in. in diam., on surface								
	rock, supported in a mound of stone, for $\frac{1}{4}$ sec. cor.,								
	marked on brass cap,								
	<table border="1" style="margin: auto;"> <tr><td style="padding: 0 5px;">S26</td><td style="padding: 0 5px;">S25</td></tr> <tr><td colspan="2" style="text-align: center;">1922</td></tr> </table>	S26	S25	1922					
S26	S25								
1922									
	from which,								
	A pinyon, 24 ins. in diam., brs. S. 20° E., 269								
	lks. dist., marked $\pm$ S 25 BT.								
	A pinyon, 4 ins. in diam., brs. S. 19 $\frac{1}{2}$ ° W., 166								
	lks. dist., marked BT.								
	Descend 60 ft.								
67.50	Draw, course E.								
	Ascend 10 ft.								
75.00	Descend 10 ft.								
79.00	Wash, 20 lks. wide, course NE.								
	Ascend slightly to								
80.00	Set an iron post, 3 ft. long, 2 ins. in diam., on ledge of								
	rock, deposit a stone, marked with a cross (x) at base								
	of post, and raise a mound of stone around post, for								
	cor. of secs. 23, 24, 25 and 26, marked on brass cap.								
	<table border="1" style="margin: auto;"> <tr><td style="padding: 0 5px;">T31N</td><td style="padding: 0 5px;">R14W</td></tr> <tr><td style="padding: 0 5px;">S23</td><td style="padding: 0 5px;">S24</td></tr> <tr><td style="padding: 0 5px;">S26</td><td style="padding: 0 5px;">S25</td></tr> <tr><td colspan="2" style="text-align: center;">1922</td></tr> </table>	T31N	R14W	S23	S24	S26	S25	1922	
T31N	R14W								
S23	S24								
S26	S25								
1922									
	from which,								
	A cedar, 24 ins. in diam., brs. N. 59° E., 320 lks.								
	dist., marked T31N R14W S24 BT.								
	A cedar, 8 ins. in diam., brs. S. 14 $\frac{1}{2}$ ° W., 113 lks.								
	dist., marked T31N R14W S26 BT.								
	No other bearing trees available.								
	Land, rolling.								
	Soil, gravelly, 3rd rate.								
	Timber, cedar and pinyon.								
	Undergrowth, black brush.								



Survey of Part of Subdivision lines of Township 31 North, Range 14 W. 7

Chains.

40.00 N. 89° 58' E., on a random line, bet. secs. 24 and 25.  
Set temp. sec. cor.

80.02 Intersect the cor. of secs. 19, 24, 25 and 30, on E. bdy. of Tp., described in Book "H."

Thence,  
S. 89° 58' W., on a true line, bet. secs. 24 and 25.  
Over rolling land, thru. scattering timber and undergrowth.  
Ascend 50 ft., over gradual NE. slope.  
8.00 Top of ascent. Thence over nearly level bench.  
28.00 Enter rolling land. Ascend 60 ft., to  
40.01 Set an iron post, 3 ft. long, 1 in. in diam., 8 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$  S 24  
S 25  
1922

No bearing trees available.  
Thence over nearly level land. Asc. slightly to sec. cor.  
76.00 Wash, 20 lks. wide, course SE.  
78.00 Same wash, course NE.  
80.02 The cor. of secs. 23, 24, 25 and 26.  
Land, rolling and nearly level land.  
Soil, gravelly, 3rd rate.  
Timber, cedar and pinyon.  
Undergrowth, black brush.

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N. 0° 1' W., bet. secs. 23 and 24.  
Over nearly level land, thru. scattering undergrowth.  
Ascend slightly, to  
35.00 Enter gently rolling land.  
Descend 12 ft., to  
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 15 ins. in the ground to bed rock, supported in a mound of stone, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$   
S 23 | S 24  
1922

No bearing trees available. Raise a mound of stone, 4 ft. base, 3 ft. high, W. of cor.  
Descend 12 ft., to  
46.80 Top of cliff, 250 ft. high, bearing E. and W. facing N., and forming S. or left rim of canyon. Enter mountainous land.

It being impracticable to chain measurement on sec. line across canyon, triangulate as follows:  
Measure a Base, S. 72° 16' E., 18.60 chs.  
Set flag ahead on sec. line at north, or right rim of canyon.  
From SE. end of Base, the flag brs. N. 26° 21' W.

Dist. on sec. line, = 46.80 chs.  
Dist. triangulated = 30.12 chs.  
Total distance, = 76.92 chs.

60.00 (Approx.) Bottom of canyon, course W. Asc. about 600 ft. to  
76.92 Triangulation point at N. or right rim of canyon, bearing NW. and SE. Leave canyon. Enter nearly level land on small point of bench projecting W. Continue line and measurement by chaining.

78.68 Set an iron post, 3 ft. long, 2 ins. in diam., 12 ins. in the ground to bed rock, supported in a mound of stone, for witness cor. to the cor. of secs. 13, 14, 23 and 24, marked on brass cap,

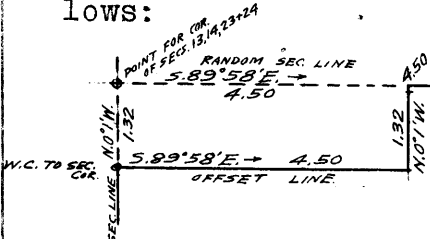
8 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.

W C  
T31N R14W  
S14 S13  
S23 S24  
1922

80.00 No bearing trees available. Mark a cross (x) alongside of post on ledge of rock, 20 ft. long and 4 ft. high, bearing NE. and SW.  
Enter mountainous land. Discontinue chaining owing to cliffs beyond this point.  
True point for cor. falls on face of cliff, and is inaccessible.  
Land, nearly level, gently rolling and mountainous.  
Soil, gravelly and rocky, 3rd and 4th rate.  
Timber, none.  
Undergrowth, black brush.

S. 89° 58' E., on a random line, bet. secs. 13 and 24.  
The point for cor. of secs. 13, 14, 23 and 24 is inaccessible; therefore, to reach a point on random line from which to chain measurement of such line, begin at the witness cor. to said sec. cor., and run an offset line as follows:



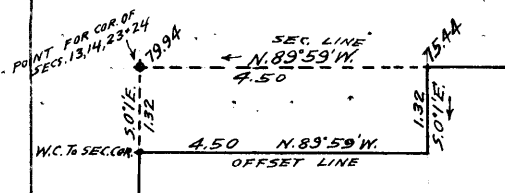
S. 89° 58' E., 4.50 chs. on offset line in sec. 24 parallel to, and 1.32 chs. S. of random sec. line.  
Thence, N. 0° 1' W., 1.32 chs., to point on random sec. line, at

4.50 Thence S. 89° 58' E., on random line, bet. secs. 13 and 24, continuing measurement from true point for cor. of secs. 13, 14, 23 and 24.  
40.00 Set temp. sec. cor.  
79.94 Fall 2 lks. S. of the cor. of secs. 13, 18, 19, and 24, on E. bdy. of Tp., described in Book "H."  
Thence, N. 89° 59' W., on a true line, bet. secs. 13 and 24.  
Over rolling land, thru. scattering timber and dense undergrowth. Desc. 22 ft., over SW. slope.  
6.90 Wash, 20 lks. wide, course S.  
Ascend 75 ft., over E. slope.  
16.50 Top of ascent, brs. N. and S. Enter gently rolling and nearly level land.  
Descend gradually over S. slope, to  
39.97 Set an iron post, 3 ft. long, 1 in. in diam., 20 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for sec. cor., marked on brass cap,

1/4 S 13  
S. 24  
1922

from which, A cedar, 18 ins. in diam., brs. S. 19° E., 725 lks. dist., marked S 24 BT.

No other bearing trees available.  
Continue over nearly level land.  
Descend slightly over SW. slope, to  
75.44 Top of cliffs, bearing NE. and SW. facing NW. and forming SE. or left rim of a canyon. Enter mountainous land.  
It being impracticable to continue chaining on true sec. line beyond this point owing to precipitous descent over cliffs, obtain measurement to sec. cor. point by offset as follows: S. 0° 1' E., 1.32 chs. in sec. 24.



Thence, N. 89° 59' W. on offset line, parallel to true sec. line, and at 4.50 chs. intersect the witness cor. to cor. of secs. 13, 14, 23 and 24, which is 1.32

Survey of part of Subdivision lines of T. 31 N., R. 14 W., S. 9

Chains.

79.94

chs. S.0°1'E. of the terminus of the true sec. line at  
 The true point for cor. of secs. 13, 14, 23 and 24 on face of cliff in inaccessible position.  
 Land, rolling, gently rolling, nearly level and mountainous.  
 Soil, gravelly and rocky, 3rd rate.  
 Timber, cedar.  
 Undergrowth, black brush. Good grass.

N.0°1'W., bet. secs. 13 and 14.  
 Over mountainous land, thru scattering timber and undergrowth.

The line passes over precipitous cliffs in two canyons, where it is impracticable to chain. Triangulate as described as follows, and as shown on the diagram hereon:

The point for cor. of secs. 13, 14, 23 and 24 is inaccessible; therefore, set flag on the witness cor., which is 1.32 chs. S.0°1'E. therefrom, and indicated on diagram at "A."

From a point indicated on diagram at "B" which brs. N.8°28'E. from "A," measure a Base N.70° 8'E., 22.90 chs. to point indicated on diagram at "C."

From "C" the flag at "A" brs. S.33° 30'W.

Dist. "A-B" triangulated = 32.29 chs.  
 Latitude of "A-B" = 31.94 chs. North.  
 Departure of "A-B" = 4.75 chs. East.  
 Departure of "A-D" = .01 chs. W., the point "D" on diagram indicating point on sec. line West from triangulation point "B."

Position of point "D" on sec. line is 31.94 chs. = 1.32 chs. = 30.62 chs. N.0°1'W.

Dist. "D-B" is 4.75 chs. + .01 chs. = 4.76 chs. West.  
 From "B" chain measurement West, .76 chs. to point "E" at top of cliffs bearing NE. and E. between two canyons, course SW.

The point for 1/4 sec. cor. indicated on diagram at "F" falls on cliffs on SE. or left side of canyon, and is inaccessible, and no point on the S. 1/2 of the sec. line bet. secs. 13 and 14 is accessible on account of cliffs. No point on the sec. line within 10 chs. N. of the point for 1/4 sec. cor. is accessible, therefore, point "E" is as close to the true point for 1/4 sec. cor. (F) as it is possible to get and obtain a suitable position for the establishment of a witness cor.

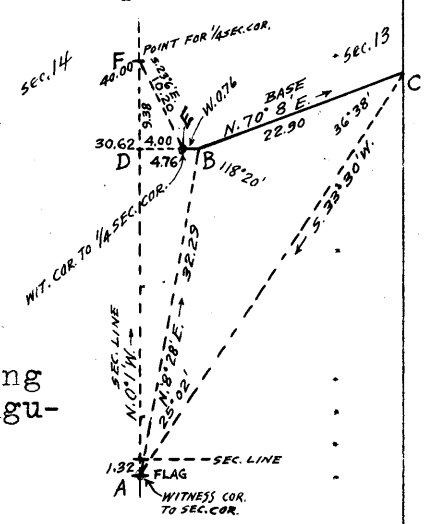
By computation of the triangle "D-E-F" in which "D-E" is 4.00 chs. East, and "D-F" 9.38 chs. N.0°1'W. the position of point "E" with relation to the point for 1/4 sec. cor. is determined to be S.23° 6' E., 10.20 chs.

15.00 (Approx.) Bottom of canyon, course SW.  
 Ascend over precipitous cliffs.

30.62 Computed point on sec. line. At 4.00 chs. East herefrom, or 10.20 chs. S.23° 6' E. from true point for 1/4 sec. cor., Set an iron post, 3 ft. long, 1 in. in diam., 20 ins. into crevice of rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post for witness cor. to 1/4 sec. cor., marked on brass cap,

WC 1/4  
 S14 | S13  
 1922

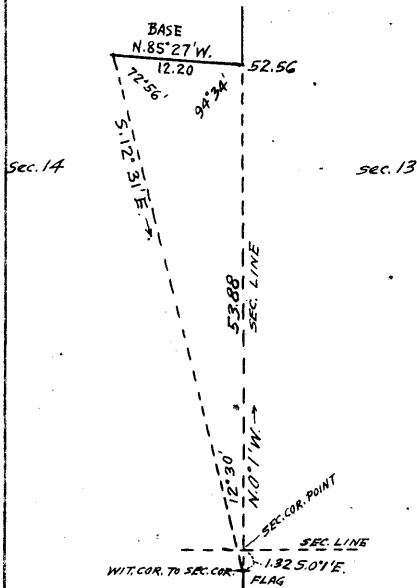
No bearing trees or objects available.



10 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.

Descend over cliffs into another canyon.  
In order to reach a point on sec. line from which to chain measurement in the N.  $\frac{1}{2}$  mile, triangulate as described as follows, and as shown on the diagram hereon:



From witness cor. to cor. of secs. 13, 14, 23 and 24, which is 1.32 chs. S. 0° 1' E. from cor. point, line in a point N. 0° 1' W. at top of cliffs in N.  $\frac{1}{2}$  of line bet. secs. 13 and 14, and measure a Base N. 85° 27' W., 12.20 chs. From NW. end of Base, flag on the W.C. to sec. cor. brs. S. 12° 31' E. From point on sec. line at SE. end of Base the vertical angle to flag is 0°.

Dist. triangulated = 53.88 chs., N. 0° 1' W.  
Dist. bet. secs. 23 & 24 = 1.32 chs., N. 0° 1' W.  
Dist. bet. secs. 13 & 14 = 52.56 chs., N. 0° 1' W.

- 40.00 Point for  $\frac{1}{4}$  sec. cor. falls on NW. face of cliff, and is inaccessible. Witnessed 10.20 chs. S. 23° 6' E., as herein before described.
- 45.00 Descend over cliffs facing NW.  
(Approx.) Bottom of canyon, course SW.
- 52.56 Ascend over precipitous S. face of cliffs, to  
Triangulation point at top of cliff bearing E. and W. facing S., and forming N. or right rim of canyon. Continue line and measurement by chaining.
- Ascend 120 ft., over SW. slope.
- 67.80 Spur, slopes SW. Desc. 80 ft., over NW. slope.
- 72.70 Gulch, course SW. Asc. 45 ft., over SE. slope.
- 78.00 Point of spur, slopes SW. Desc. 15 ft., over NW. slope, to
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 14 ins. in the ground to bed. rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for cor. of secs. 11, 12, 13 and 14, marked ob brass cap,

T31N	R14W
S11	S12
S14	S13
1922	

from which,  
A pinyon, 24 ins. in diam., brs. N. 14° E., 367 lks. dist., marked T31N R14W S12 BT.  
A pinyon, 8 ins. in diam., brs. N. 12° W., 347 lks. dist., marked T31N R14W S11 BT.

No other bearing trees available.  
Land, mountainous.  
Soil, rocky, 3rd and 4th rate.  
Timber, cedar and pinyon.  
Undergrowth, black brush.

- 40.00 S. 89° 59' E., on a random line, bet. secs. 12 and 13.  
Set temp.  $\frac{1}{4}$  sec. cor.
- 80.08 Fall 3 lks. N. of the cor. of secs. 7, 12, 13 and 18, on E. bdy. of Tp., described in Book "H"  
Thence,  
N. 89° 58' W., on a true line, bet. secs. 12 and 13.  
Over mountainous land, thru. scattering timber and dense undergrowth.  
Ascend 49 ft., over E. slope.
- 1.00 Spur, slopes S. Desc. 225 ft., over SW. slope.
- 10.40 Wash, 20 lks. wide, in gulch, course S.  
Ascend 75 ft., over SE. slope.
- 18.20 Descend 185 ft. over broken S. and SW. slopes, to

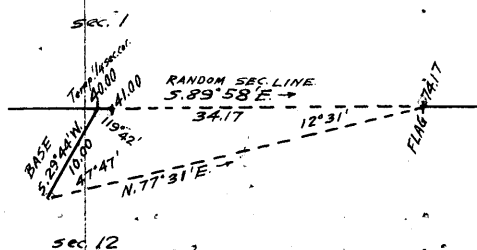
BOOK 2000

Survey of part of Subdivision lines of T. 31 N., R. 14 W. 11

Chains. 40.04	Set an iron post, 3 ft. long, 1 in. in diam., 16 ins. in the ground to bed rock, supported in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap, $\begin{array}{c} S 12 \\ \frac{1}{4} S 13 \end{array}$ 1922 from which, A pinyon, 12 ins. dia., brs. N. 45° E., 121 lks. dist., mkd. $\frac{1}{4}$ S 12 BT. A pinyon, 8 ins. dia., brs. S. 33° E., 37 lks. dist., mkd. $\frac{1}{4}$ S 13 BT. Descend 48 ft., over SW. slope.
44.40	Draw, course S. Asc. 80 ft., over E. slope.
53.00	Spur, slopes S. Desc. 135 ft., over SW. slope, to
69.70	Top of cliff, 25 ft. high, bearing NE. & SW., facing NW. Descend 65 ft.
74.60	Head of gulch, course SW. Asc. 30 ft., over SE. slope.
77.30	Spur, slopes SW. Desc. 20 ft., over NW. slope, to
80.08	The cor. of secs. 11, 12, 13 and 14. Land, mountainous. Soil, rocky, 4th rate. Timber, cedar and pinyon. Undergrowth, black brush.
-----	
N. 0° 1' W., bet. secs. 11 and 12. Over mountainous land, thru scattering timber and dense undergrowth. Desc. 45 ft. over NW. slope.	
16.20	Wash, 30 lks. wide, course SW. into canyon. Ascend 70 ft., over SW. slope.
21.80	Rocky ledge brs. N. and SE. Thence along ledge. Asc. gradually to
27.50	Leave ledge. Desc. 10 ft., over W. slope, to
31.40	Wash, 10 lks. wide, course SW. Asc. 15 ft., over S. slope.
33.20	Point of spur, slopes SW. Asc. 15 ft., over W. slope, to
36.30	Wash, 20 lks. wide, course SW. Asc. 30 ft. over S. slope, to
40.00	Set an iron post, 3 ft. long, 1 in. in diam., on ledge, supported in a mound of stone, 6 ft. base, 3 ft. high for $\frac{1}{4}$ sec. cor., marked on brass cap, $\begin{array}{c} S 11   S 12 \\ 1922 \end{array}$ from which, A pinyon, 6 ins. dia., brs. N. 4 $\frac{1}{2}$ ° E., 67 lks. dist., mkd. $\frac{1}{4}$ S 12 BT. A pinyon, 17 ins. dia., brs. S. 66 $\frac{1}{2}$ ° W., 33 lks. dist., mkd. $\frac{1}{4}$ S 11 BT. Ascend 30 ft., over S. slope.
41.30	Spur, slopes SW. Desc. 145 ft., over NW. slope.
49.60	Wash, 20 lks. wide, in gulch, course W. Asc. 145 ft. over SW. slope.
54.50	Point of red sandstone spur, slopes W. Descend 70 ft., over NW. slope.
58.70	Wash, 10 lks. wide, in gulch, course W. Asc. 62 ft. over SW. slope.
62.00	Point of spur, slopes W. Desc. 85 ft., over NW. slope.
70.00	Wash, 20 lks. wide, course W. Asc. 10 ft., over SW. slope.
72.00	Point of spur slopes W. Desc. slightly over NW. slope.
75.00	Wash, 20 lks. wide, course SW. Asc. 18 ft., over SW. slope.
78.90	Descend 8 ft., over NW. slope, to
80.00	Set an iron post, 3 ft. long, 2 ins. in diam., 20 ins. in the ground, to bed rock, supported in a mound of stone for cor. of secs. 1, 2, 11 and 12, marked on brass cap, $\begin{array}{c} T 31 N   R 14 W \\ S 2   S 1 \\ S 11   S 12 \end{array}$ 1922 from which, A pinyon, 6 ins. in diam., brs. N. 32 $\frac{1}{2}$ ° E., 8 lks. dist., marked T 31 N R 14 W S 1 BT. A pinyon, 8 ins. in diam., brs. S. 61 $\frac{1}{2}$ ° E., 48 lks. dist., marked T 31 N R 14 W S 12 BT. A pinyon, 14 ins. in diam., brs. S. 33° W., 123 lks. dist., marked T 31 N R 14 W S 11 BT. A pinyon, 14 ins. in diam., brs. N. 75° W., 19 lks. dist., marked T 31 N R 14 W S 2 BT. Land, mountainous. Soil, rocky ledges, 4th rate. Timber, cedar and pinyon. Undergrowth, black brush.
-----	
40.00	S. 89° 58' E., on a random line, bet. secs. 1 and 12. Set temp. $\frac{1}{4}$ sec. cor.
41.00	Beyond this point, the line passes over extremely rough and broken surface, and a series of cliffs, and chaining is impracticable; therefore, triangulate as follows:

## 12 Survey of part of Subdivision lines of T.31 N., R.14 W.

chains.



- From temp.  $\frac{1}{4}$  sec. cor. measure a Base, S. 29° 44' W., 10.00 chs.  
Set flag ahead on random sec. line at top of cliffs. From SW. end of Base, the flag brs. N. 77° 31' E.  
From temp.  $\frac{1}{4}$  sec. cor., the vertical angle to flag is  $\pm 28^\circ$ .  
Dist. on random sec. line = 40.00 chs.  
Dist. triangulated = 34.17 chs.  
Total dist. = 74.17 chs.
- 74.17 Triangulation point, Continue line and measurement by chaining.
- 80.06 Fall 2 lks. N. of the cor. of secs. 1, 6, 7 and 12, on E. bdy. of Tp., described in Book "H." Thence, N. 89° 57' W., on a true line, bet. secs. land 12. Over mountainous land, thru. scattering timber & dense undergrowth. Desc. 20 ft., over NW. slope, to
- 5.89 Triangulation point at top of cliffs, bearing N. and S., facing W. Discontinue chaining and triangulate as hereinbefore described. Desc. 1200 ft. to  $\frac{1}{4}$  sec. cor.
- 39.06 Wash, 20 lks. wide, course SW. Continue line & measurement by chaining. Asc. 6 ft., over SE. slope, to
- 40.03 Set an iron post, 3 ft. long, 1 in. in diam., on sandstone ledge, supported in a mound of stone, for  $\frac{1}{4}$  sec. cor., marked on brass cap,  
 $\frac{1}{4}$  S. 1  
S 12  
1922 from which,  
A pinyon, 14 ins. dia., brs. N. 63 $\frac{1}{4}$ ° W., 100 lks. dist. mkd.  $\frac{1}{4}$  S 1 BT.  
A pinyon, 8 ins. dia. brs. S. 67 $\frac{1}{4}$ ° W., 66 lks. dist., mkd.  $\frac{1}{4}$  S 12 BT.  
Continue line and measurement by chaining.  
Ascend 17 ft., over S. slope.
- 40.06 Triangulation point. Continue chaining.
- 45.00 Descend 425 ft., over SW. slope.
- 69.00 Top of cliff, 40 ft. high, brs. NW. and SE. facing SW.
- 77.70 Descend 62 ft., over NW. slope, to
- 80.06 The cor. of secs. 1, 2, 11 and 12.  
Land, mountainous. Soil, rocky, 4th rate.  
Timber, cedar and pinyon. Undergrowth, black brush.
- N. 0° 1' W., on a random line, bet. secs. 1 and 2.
- 40.00 Set temp.  $\frac{1}{4}$  sec. cor.
- 80.07 Fall 4 lks. W. of the cor. of secs. 1, 2, 35 and 36, on N. bdy. of Tp., described in Book "F."  
Thence, S. 0° 1' W., on a true line, bet. secs. 1 and 2.  
Over mountainous land, in canyon, near bottom of same, thru. scattering timber and dense undergrowth.  
Descend 65 ft., over E. and SE. slopes, to
- 11.00 Enter wash, 80 lks. wide, course S. from NE. in bottom of canyon. Desc. 25 ft., in washto
- 15.00 Leave wash, course SE. Asc. 15 ft., over NE. slope.
- 17.00 Descend 73 ft., over SE. slope, to
- 29.00 Same wash, 40 lks. wide, course S. 30° W. Desc. 10 ft. over SW. slope, to
- 32.40 Wash, 20 lks. wide, course SW. Asc. 17 ft., over W. slope, to
- 40.07 Set an iron post, 3 ft. long, 1 in. in diam., 12 ins. in the ground to bed rock, supported in a mound of stone, for  $\frac{1}{4}$  sec. cor., marked on brass cap,  
S 2 | S 1  
1922 from which,  
A pinyon, 12 ins. dia., brs. N. 37 $\frac{1}{4}$ ° E., 36 lks. dist. mkd.  $\frac{1}{4}$  S 1 BT.  
A pinyon, 8 ins. in diam., brs. S. 17 $\frac{1}{4}$ ° W., 13 lks. dist. mkd.  $\frac{1}{4}$  S 2 BT.  
Ascend 62 ft., over W. and NW. slopes.
- 58.60 Point of spur, slopes SW. Desc. 115 ft., over S. slope.
- 65.00 Wash, 20 lks. wide, course SW.  
Ascend 20 ft., over NW. slope.
- 73.00 Point of spur, slopes SW.

Survey of part of Subdivision lines of T. 31 N., R.14 W. 13

Chains.

77.80 Descend 66 ft., over S. slope.  
 Wash, 10 lks. wide, course SW.  
 Ascend 12 ft., over NW. slope, to  
 80.07 The cor. of secs. 1, 2, 11 and 12.  
 Land, mountainous.  
 Soil, rocky, 4th rate.  
 Timber, cedar and pinyon.  
 Undergrowth, scrub oak, black brush and sagebrush.

-----  
 From the cor. of secs. 25, 26, 35 and 36.  
 West, on a true line, bet. secs. 26 and 35. (E. 1/2).  
 Over rolling land, thru. scattering timber and dense under-  
 growth.  
 Ascend 100 ft., over SE. slope.  
 22.90 End of spur, slopes S.  
 Descend 43 ft., over SW. slope.  
 29.70 Draw, course SE.  
 Ascend 39 ft., over SE. slope, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 12 ins. in  
 the ground to bed rock, deposit a stone, marked with a  
 cross (x) at base of post, and raise a mound of stone  
 around post, for 1/4 sec. cor., marked on brass cap,

1/4 S 26  
 S 35  
 1922

No bearing trees available.  
 The line west of this cor. passes over rolling land, and  
 at 34.20 chs., intersects the right rim of the Colorado  
 River Canyon, bearing NW. and SE. As the W. bdrs. of  
 secs. 26 and 35 fall on cliffs of said canyon, and are  
 unsurveyable, it is unnecessary to establish a witness  
 cor. to cor. of secs. 26, 27, 34 and 35 at the intersec-  
 tion of the sec. line, bet. secs. 26 and 35 with the can-  
 yon rim.  
 Land, rolling.  
 Soil, gravelly and rocky, 3rd rate.  
 Timber, cedar and pinyon.  
 Undergrowth, black brush.

-----  
 From the cor. of secs. 23, 24, 25 and 26,  
 West, on a true line, bet. secs. 23 and 26. (E. 1/2).  
 Over nearly level land, thru. scattering timber and dense  
 undergrowth.  
 Ascend slightly over NE. and N. slopes.  
 18.00 Descend slightly over N. and NW slopes, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in the  
 the ground to bed rock, deposit a stone, marked with a  
 cross (x) at base of post, and raise a mound of stone  
 around post, for 1/4 sec. cor., marked on brass cap,

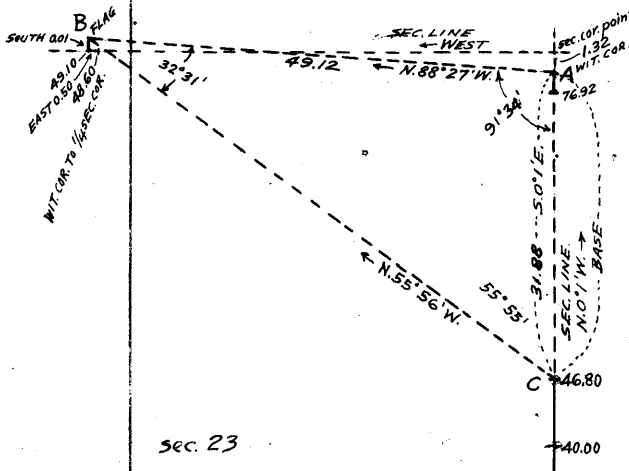
1/4 S 23  
 S 26  
 1922

No bearing trees available. The line W. of this cor. passes  
 over nearly level land for 20.30 chs., where it inter-  
 sects the right rim of the Colorado River Canyon, bearing  
 NE. and SE. The line beyond the rim is impassable, and  
 as the dist. to the sec. cor. point exceeds the allowable  
 limits for a witness cor., the west 1/4 of line bet. secs.  
 23 and 26 is unsurveyable.  
 Land, nearly level.  
 Soil, gravelly and rocky, 3rd rate.  
 Timber, cedar and pinyon.  
 Undergrowth, black brush. Good grass.

14 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.

From true point for cor. of secs 13, 14, 23 and 24, West, on true line, bet. secs. 14 and 23 (E.  $\frac{1}{4}$ ). Over mountainous land, thru. scattering undergrowth. As said sec. cor. point is inaccessible, and the entire E.  $\frac{1}{4}$  of this sec. line falls on the precipitous broken sides of a canyon, triangulate as described as follows, and as shown on the diagram hereon:



Set a flag near W. rim of canyon at point indicated on diagram at "B."  
 From witness cor. to cor. of secs. 13, 14, 23 and 24 indicated at "A" the flag "B" brs. N. 88° 27' W.  
 From 46.80 ch. station on sec. line bet. secs. 23 & 24 indicated on diagram at "C" the flag brs. N. 55° 56' W.  
 The Base "A-C" for this triangulation is therefore on the sec. line bet. secs. 23 & 24, and is S. 0° 1' E., 31.88 chs.

The vertical angle from "A" to "B" is 0°.  
 Dist. "A-B" triangulated = 49.12 chs. N. 88° 27' W.  
 Latitude of "A-B" = 1.33 chs. North.  
 Departure of "A-B" = 49.10 chs. West.  
 Triangulation point "B" is therefore .01 chs. N. of point on sec. line 49.10 chs. West from true point for cor. of secs. 13, 14, 23 and 24.  
 25.00 (Approx.) Bottom of canyon, course SW. into bottom of Colorado River Canyon, about 2 miles dist.  
 Ascend over cliffs facing SE.  
 40.00 True point for  $\frac{1}{4}$  sec. cor. falls on face of cliff, and is inaccessible.  
 From triangulation point "B", chain measurement,  
     South, .01 ch., thence  
     East, .50 chs., to  
 48.60 West, or right rim of canyon, brs. N. and SW.  
 Set an iron post, 3 ft. long, 1 in. in diam., 3 ins. in the ground to bed rock, deposit a stone marked with a cross (x) at base of post, and raise a mound of stone around post, for witness cor. to the  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$  S 14 WC  
 S 23  
 1922

No bearing trees available.  
 Beyond this cor. the line passes over rolling bench and at 29.10 chs. W. from point for  $\frac{1}{4}$  sec. cor. intersects canyon rim bearing N. and S. The line beyond the canyon rim is impassable, and as the dist. to the sec. cor. point exceeds the allowable limits for a witness cor., the W.  $\frac{1}{2}$  of line bet. secs. 14 and 23 is unsurveyable.  
 Land, mountainous.  
 Soil, gravelly and rocky, 3rd and 4th rate.  
 Timber, none.  
 Undergrowth, black brush.

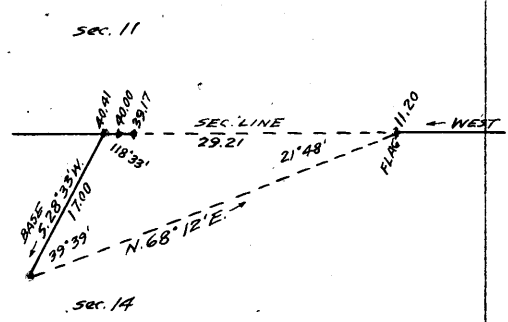
From the cor. of secs. 11, 12, 13 and 14, West, on a true line, bet. secs. 11 and 14. Over mountainous land, thru. scattering timber and undergrowth.  
 Descend 48 ft., over NW. slope, to  
 11.20 Top of cliff, 250 ft. high, bearing N. and S., facing W., and forming E. or left rim of canyon.  
 Beyond this point, the line passes over a canyon, the sides of which are too precipitous to permit chaining; therefore, triangulate as follows:



Survey of part of Subdivision lines of T1 31 N., R. 14 W. 15

Chains.

Set flag at this point.  
 From a point ahead on sec.  
 line beyond W. or right  
 rim of canyon, measure a  
 Base S. 28° 33' W., 17.00 chs.  
 From SW. end of Base, the flag  
 brs. N. 68° 12' E.  
 From point on sec. line, at NE.  
 end of Base the vertical  
 angle to flag is - 3°.  
 Dist. on sec. line = 11.20 chs.  
 Dist. triangulated = 29.21 chs.  
 Total distance, = 40.41 chs.



Approximate descent from East rim of canyon to bottom is  
 600 ft.  
 25.00 (Approx.) Bottom of canyon, course S.  
 Ascend about 700 ft., over precipitous E. slope.  
 From triangulation point beyond west rim of canyon, chain  
 measurement East 1.24 chs. to  
 39.17 West or right rim of canyon, brs. N. and S. Leave canyon:  
 Enter nearly level land.  
 Continue line and measurement by chaining.  
 40.00, Set an iron post, 3 ft. long, 1 in. in diam., on ledge of  
 rock, supported in a mound of stone, for ¼ sec. cor.,  
 marked on brass cap,

¼ S 11  
 S 14  
 1922

from which,  
 A pinyon, 16 ins. in diam., brs. N. 20½° E., 68  
 lks. dist., marked ¼ S 11 BT.  
 A pinyon, 16 ins. in diam., brs. S. 77½° W., 132  
 lks. dist., marked ¼ S 14 BT.

Continue over nearly level land, thru. scattering timber  
 and undergrowth.  
 40.41 Triangulation point. Continue chaining.  
 55.00 Enter rolling land. Asc. 23 ft., over E. slope.  
 59.00 Top of ascent, brs. NW and SE. from hill about 5 chs. NW.  
 Descend 35 ft., over SW. slope. Leave timber.  
 64.00 Foot of slope from hill. Enter nearly level land and dense  
 undergrowth.  
 Descend slightly over SW. slope, to  
 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 30 ins. in  
 the ground for cor. of secs. 10, 11, 14 and 15, marked  
 on brass cap,

T31N | R14W  
 S10 | S11  
 S15 | S14  
 1922

No bearing trees available. Dig pits, 18x18x12 ins., one  
 each NE., SE., SW. and NW. of cor., 3 ft. dist.  
 Land, mountainous, nearly level and rolling.  
 Soil, gravelly and rocky, 3rd and 4th rate.  
 Timber, cedar and pinyon in E. 59 chs. No timber in W.  
 21 chs.  
 Undergrowth, black brush.

S. 0° 1' E., on a true line, bet. secs. 14 and 15 (N. ½).  
 Over nearly level land, thru. dense undergrowth.  
 Descend slightly over SW. slope, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 30 ins. in  
 the ground for ¼ sec. cor., marked on brass cap,

¼ S15 | S14  
 1922

## 16 Survey of part of Subdivision lines of T131 N., R. 14 W.

Chains.

No bearing trees available. Dig pits, 18x18x12 ins., one each N. and S. of post, 3 ft. dist.  
Beyond this point, the line passes over nearly level bench land, until at 21.60 chs. where it intersects canyon rim bearing E. and W. Beyond the canyon rim, the line passes over impassable cliffs, and as the dist. from rim to point for cor. of secs. 14, 15, 22 and 23 exceeds the allowable limits for a witness cor., the S.  $\frac{1}{2}$  of line bet. secs. 14 and 15 is unurveyable.

Land, nearly level.  
Soil, gravelly, 3rd rate..  
Timber, none.  
Undergrowth, black brush.

From the cor. of secs. 10, 11, 14 and 15,  
N.  $0^{\circ} 1' W.$ , bet. secs. 10 and 11.  
Over nearly level land, thru. scattering undergrowth.  
Ascend slightly to

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 30 ins. in the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

S10 | S11  
1922

from which,

A pinyon, 14 ins. in diam., brs. N.  $12\frac{1}{2}^{\circ} E.$ , 920 lks. dist., marked  $\frac{1}{4} S 11$  BT.

A pinyon, 14 ins. in diam., brs. N.  $6\frac{1}{4}^{\circ} W.$ , 678 lks. dist., marked  $\frac{1}{4} S 10$  BT.

Continue over nearly level land. Enter scattering timber.  
Ascend slightly to

43.30 Wash, 30 lks. wide, course SE. Enter rolling land.

Ascend 200 ft. over SE. slope to sec. cor.

63.80 Wash, 40 lks. wide, course SE.

75.60 Wash, 20 lks. wide, course SE. Enter mountainous land.

80.00 Set an iron post, 3 ft. long, 2-ins. in diam., on ledge of rock, supported in a mound of stone, for cor. of secs. 2, 3, 10 and 11, marked on brass cap,

T31N | R14W  
S 3 | S 2  
S10 | S11  
'1922'

from which,

A pinyon, 9 ins. in diam., brs. N.  $16\frac{1}{2}^{\circ} E.$ , 255 lks. dist., marked T31N R14W S2 BT.

A pinyon, 6 ins. in diam., brs. S.  $3\frac{3}{4}^{\circ} E.$ , 204 lks. dist., marked T31N R14W S11 BT.

A pinyon, 18 ins. in diam., brs. S.  $36^{\circ} W.$ , 202 lks. dist., marked T31N R14W S10 BT.

A pinyon, 10 ins. in diam., brs. N.  $38^{\circ} W.$ , 185 lks. dist., marked T31 N R14W S3 BT.

Land, nearly level, rolling and mountainous.

Soil, gravelly, 3rd rate.

Timber, cedar and pinyon in N.  $\frac{1}{2}$ . No timber in S.  $\frac{1}{2}$ .

Undergrowth, black brush and sagebrush.

East, on a random line, bet. secs. 2 and 11.

40.00 Set temp.  $\frac{1}{4}$  sec. cor.

79.98 Fall 3 lks. S. of the cor. of secs. 1, 2, 11 and 12.

Thence,

S.  $89^{\circ} 59' W.$ , on a true line, bet. secs. 2 and 11.

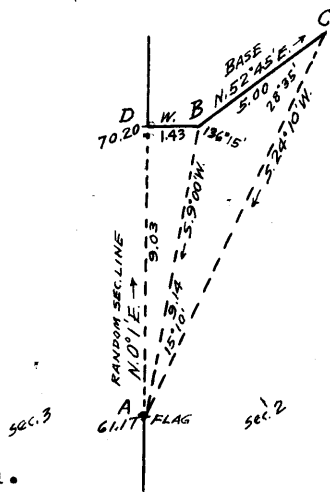
Over mountainous land, in canyon, thru. scattering timber and dense undergrowth.

Descend 15 ft., over NW. slope.

2.50 Wash, 10 lks. wide, course SW. Desc. 17 ft., over SW. slope, to

## Survey of part of Subdivision lines of T.31 N., R.14 W. 17

Chains.	
10.00	Wash, 50 lks. wide, course S. in bottom of canyon. Ascend 45 ft., over SE. slope, to
16.30	Draw, course SE. Asc. 50 ft., over E. slope.
23.00	Spur, slopes S. Desc. 50 ft., over W. slope.
24.60	Gulch, course S. Asc. 50 ft., over SE. slope.
27.00	Point of spur, slopes S. Desc. 40 ft., over SW. slope.
30.00	Gulch, course SE. Asc. 100 ft., over NE. slope.
34.70	Rim of gulch, brs. NW. & SE. Leave gulch. Asc. 25 ft. over E. slope, to
39.99	Set an iron post, 3 ft. long, 1 in. in diam., 12 ins. in the ground, to bed rock, deposit a stone marked with a cross (x) at base of post, and raise a mound of stone around post, for $\frac{1}{4}$ sec. cor., marked on brass cap,
	$\frac{1}{4}$ S 2 S 11 1922
46.50	No bearing trees available. Desc. 80 ft. over SW. slope. Ascend 65 ft., over NE. slope.
54.00	Spur, slopes SE. Asc. gradually over S. slope, to
73.00	Wash, 40 lks. wide, course SE. Asc. 40 ft., over SE. slope, to
79.98	the cor. of secs. 2, 3, 10 and 11. Land, mountainous. Soil, gravelly and rocky, 3rd and 4th rate. Timber, cedar and pinyon. Undergrowth, black brush.
40.00	N.0° 1'E., on a random line, bet. secs. 2 and 3. Set temp. $\frac{1}{4}$ sec. cor.
61.17	Foot of cliffs bearing NE. and SW. facing SE. It is impracticable to chain measurement on random sec. line beyond this point; therefore, triangulate as described as follows, and as shown on the diagram hereon: Set flag on random sec. line at this point, indicated on diagram at "A." From a point at top of cliffs indicated at "B," the flag brs. S. 9° W. From "B," measure a Base, N. 52° 45' E., 5.00 chs. along top of cliffs to point "C." From "C" the flag brs. S. 24° 10' W. Vertical angle from "B" to "A" is - 20°. Dist. "A-B" triangulated = 9.14 chs. N. 9° E. Latitude of "A-B" = 9.03 chs. North. Departure of "A-B" = 1.43 chs. East. Point on random sec. line W. of triangulation point "B" is indicated on diagram at "D." The departure of "A-B" being inconsiderable, point "D" on random sec. line is 1.43 chs. W. from "B." Dist. on random sec. line = 61.17 chs. N. 0° 1'E. Dist. "A-D" triangulated = 9.03 chs. Total distance, = 70.20 chs. From triangulation point "B" chain measurement West, 1.43 chs., to
70.20	Top of cliffs, bearing NE. and SW. facing SE. Continue line and measurement by chaining.
79.97	Fall 40 lks. E. of the cor. of secs. 2, 3, 34 and 35, on N. bdy. of Tp., described in Book "F." Thence, S. 0° 16' E., on a true line, bet. secs. 2 and 3. Over mountainous land, thru. scattering timber and dense undergrowth.
9.77	Descend 30 ft., over SE. slope to Top of cliffs, bearing NE. and SW. facing SE. Discontinue



## 18 Survey of part of Subdivision lines of T. 31 N., R14 W.

Chains.

chaining and triangulate measurement to foot of cliffs, as hereinbefore described.

Descend 217 ft., to

18.80 Triangulation point at foot of cliffs, bearing NE. and SW. Continue line and measurement by chaining.

Descend 565 ft., over steep SE. slope, to

31.30 Wash, 30 lks. wide, in gulch, course E. Ascend 15 ft., over NE. slope.

33.50 Descend 142 ft., over S. slope.

37.00 Wash, 30 lks. wide, in gulch, course E. Ascend 10 ft., over NE. slope, to

39.97 Set an iron post, 3 ft. long, 1 in. in diam., 10 ins. in the ground to bed rock, supported in a mound of stone, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

S 3 | S 2  
1922

from which,

A pinyon, 10 ins. in diam., brs. S.  $72\frac{1}{2}^{\circ}$  E., 80 lks. dist., marked  $\frac{1}{4}$  S 2 BT.

A pinyon, 6 ins. in diam., brs. S.  $12^{\circ}$  W., 108 lks. dist., marked  $\frac{1}{4}$  S 3 BT.

Ascend 20 ft., over NE. slope.

45.20 Spur, slopes SE. Desc. 175 ft., over SW. slope.

51.50 Wash, 20 lks. wide, course SE. Asc. 45 ft., over NE. slope.

57.00 Spur, slopes SE. Desc. 237 ft., over S. slope, to

65.10 Descend 115 ft., over SE. slope, to

79.97 The cor. of secs. 2, 3, 10 and 11.  
Land, mountainous.  
Soil, rocky, 4th rate.  
Timber, cedar and pinyon.  
Undergrowth, black brush.

From the cor. of secs. 10, 11, 14 and 15,  
West on a true line, bet. secs. 10 and 15.  
Over nearly level land, thru. dense undergrowth.  
Descend slightly over SW. slope, to

5.20 Wash, 60 lks. wide, course S. Thence over S. slope, with slight change in elevation.

32.00 Wash, 20 lks. wide, course S. Enter rolling land.  
Ascend 50 ft., over SE. slope, to

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$  S 10

S 15

1922

No bearing tree available.

Ascend 12 ft., over SE. slope.

45.00 Descend 40 ft., over SW. slope.

50.00 Ascend 23 ft., over SE. slope.

55.00 Low spur, slopes S. Desc. 30 ft., over W. slope.

57.50 Wash, 30 lks. wide, course S. Enter nearly level land.  
Ascend slightly over E. and SE. slopes, to

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 30 ins. in the ground for cor. of secs. 9, 10, 15 and 16, marked on brass cap,

T31N | R14W

S 9 | S10

S16 | S15

1922

No bearing trees available. Dig pits, 18x18x12 ins., one each NE., SE., SW. and NW of cor., 3 ft. dist.  
Land, nearly level and rolling.  
Soil, gravelly, 3rd rate.  
Timber, none.  
Undergrowth, sagebrush and black brush.

Survey of part of Subdivision lines of T. 31 N., R. 14 W. 19

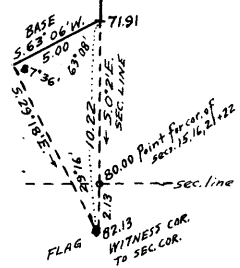
Chains.

S.0°2' E., on a true line, bet. secs. 15 and 16.  
 Over nearly level land, thru dense undergrowth.  
 Descend slightly over SE. and S. slopes, to  
 28.00 Wash, 10 lks. wide, course SE. Enter gently rolling land.  
 Ascend 25 ft., over E. slope, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 8 ins. in  
 the ground, to bed rock, deposit a stone marked with a  
 cross (x) at base of post, and raise a mound of stone  
 around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

S16 | S15

1922

No bearing trees available. Continue over gently rolling  
 land. Descend gradually over E. slope.  
 60.00 Ascend 14 ft., over NE. slope.  
 62.50 Descend gradually over SE. slope, to  
 71.91 Top of cliff, 300 ft. high, brs. NE. and SW. facing SE. and  
 forming the N. or left rim of a canyon. Enter mountain-  
 ous land. Chaining measurement on the sec. line across  
 the canyon being impracticable, triangulate as follows:  
 Measure a Base S.63°06'W.,  
 5.00 chs. along the left rim of  
 canyon.  
 Set flag ahead on sec. line at  
 S. or right rim of canyon.  
 From SW. end of Base, the flag brs.  
 S.29°18'E.



Dist. on sec. line = 71.91 chs. S.0°2'E.  
 Dist. triangulated = 10.22 chs. S.0°2'E.  
 Total distance = 82.13 chs. S.0°2'E. or 2.13 chs. S.0°  
 2'E. from the true point for cor. of secs. 15, 16, 21 and  
 22.

75.00 (Approx.) Bottom of canyon, course E. Heads 10 chs. W.  
 Ascend over precipitous cliffs.  
 80.00 True point for cor. of secs. 15, 16, 21 and 22, falls on  
 face of cliffs on right side of canyon, at inaccessible  
 position; therefore at the triangulation point, which  
 is 2.13 chs. S.0°2'E., herefrom.  
 Set an iron post, 3 ft. long, 2 ins. in diam., 10 ins. in  
 the ground, to bed rock, deposit a stone marked with  
 a cross (x) at base of post, and raise a mound of  
 stone around post, for witness cor. to the cor. of secs.  
 15, 16, 21 and 22, marked on brass cap,

W | C  
 T31N | R14W  
 S16 | S15  
 S21 | S22

1922

No bearing trees available.  
 Land, nearly level, gently rolling and mountainous.  
 Soil, gravelly, 3rd rate.  
 Timber, none.  
 Undergrowth, black brush.

From the cor. of secs. 9, 10, 15 and 16,  
 N.0°2'W., bet. secs. 9 and 10.  
 Over nearly level land, thru scattering undergrowth.  
 Ascend slightly over SE. slope, to  
 10.00 Enter rolling land. Asc. 100 ft., over SE. slope.  
 22.65 Descend 60 ft., over NE. slope, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 30 ins. in  
 the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

S 9 | S10

1922

20 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.

No bearing trees available. Dig pits 18x18x12 ins., one each N. and S. of post, 3 ft. dist.

Ascend 135 ft., over SE. slope.

57.25 Low spur, slopes SW. Asc. slightly over W. slope, to

62.25 Head of draw, course SW. Enter mountainous land.

Ascend 103 ft., over SE. slope.

72.10 Ridge, brs. E. and W.

Descend 77 ft., over N. slope, to

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 8 ins. in the ground, to bed rock, supported in a mound of stone, for cor. of secs. 3, 4, 9 and 10, marked on brass cap,

T31N	R14W
S 4	S 3
S 9	S 10
1922	

from which,

A pinyon, 12 ins. in diam., brs. N. 48° E., 75 lks. dist., marked T31N R14W S3 BT.

A pinyon, 12 ins. in diam., brs. S. 65° E., 140 lks. dist., marked T31N R14W S10 BT.

A pinyon, 6 ins. in diam., brs. S. 50° W., 72 lks. dist., marked T31N R14W S9 BT.

A pinyon, 4 ins. in dia., brs. N. 79½° W., 74 lks. dist., marked BT.

Land, rolling and mountainous.

Soil, gravelly loam, 3rd rate.

Timber, juniper, cedar and pinyon.

Undergrowth, black brush, cactus and yucca.

East, on a random line, bet. secs. 3 and 10.

40.00 Set temp. ¼ sec. cor.

80.30 Fall 5 lks. S. of the cor. of secs. 2, 3, 10 and 11.

Thence,

S. 89° 58' W., on a true line, bet. secs. 3 and 10.

Over mountainous land, thru. scattering timber and undergrowth.

Ascend 427 ft., over broken SE. slope.

30.40 Spur, slopes S. Desc. 30 ft., over SW. slope, to

40.15 Set an iron post, 3 ft. long, 1 in. in diam., on bedrock, supported in a mound of stone, for ¼ sec. cor., marked on brass cap,

¼ S	3
S 10	
1922	

No bearing trees available. Raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

Descend slightly over SW. slope.

40.50 Head of gulch, course S. Asc. 110 ft., over SE. slope.

47.00 Ridge, brs. NE. and SW. Desc. 203 ft., over NW. slope.

52.80 Wash, 30 lks. wide, in gulch, course SW., heads 5.00 chs. NE. Ascend 57 ft., over SE. slope.

57.70 Ridge, brs. NE. and SW. Desc. 304 ft., over NW. slope, to

75.30 Head of draw, course NW. Desc. 34 ft., over N. slope, to

80.30 The cor. of secs. 3, 4, 9 and 10.

Land, mountainous.

Soil, rocky, 4th rate.

Timber, juniper, pinyon and cedar.

Undergrowth, black brush and manzanita.

N. 0° 16' W., on a random line, bet. secs. 3 and 4.

40.00 Set temp. ¼ sec. cor.

80.08 Fall 19 lks. W. of the cor. of secs. 3, 4, 33 and 34, on N. bdy. of Tp., described in Book "F."

Thence,

S. 0° 8' E., on a true line, bet. secs. 3 and 4.

Over rolling land, thru. scattering timber and dense

Survey of part of Subdivision lines of Township 31 North Range 14 W

Chains.

10.50 undergrowth. Desc. 25 ft., over W. and SW. slopes, to  
 Draw, 10 lks. wide, course NW. Asc. 100 ft., over NE. slope.  
 21.65 Spur, slopes NW. Desc. 56 ft., over SW. slope.  
 29.50 Draw, 10 lks. wide, course NW. Enter mountainous land.  
 Ascend 70 ft., over NE. slope.  
 36.60 Spur, slopes NW. Desc. 42 ft., over SW. slope, to  
 40.08 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in  
 the ground to bed rock, supported in a mound of stone,  
 for  $\frac{1}{4}$  sec. cor., marked on brass cap,

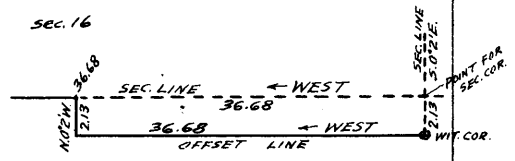
$\frac{1}{4}$   
 S 4  $\frac{1}{4}$  S 3  
 1922

from which,  
 A pinyon, 8 ins. in diam., brs. S. 15° E., 162 lks.  
 dist., marked  $\frac{1}{4}$  S 3 BT.  
 A pinyon, 8 ins. in diam., brs. N. 25° W., 6 lks.  
 dist., marked  $\frac{1}{4}$  S 4 BT.

Descend 82 ft., over SW. slope.  
 44.30 Gulch, 10 lks. wide, course NW. Asc. 100 ft., over NE. slope.  
 49.00 Ridge, brs. SE. and NW. Desc. 180 ft., over SW. slope.  
 60.60 Head of gulch, course W. Asc. 132 ft., over broken NW. slope.  
 65.00 Point of spur, sloping W., and W. end of cliff, 25 ft. high  
 bearing E and W., facing N.  
 Descend 93 ft., over broken SW. slope, to  
 79.00 Draw, course W. Asc. 16 ft., over N. slope, to  
 80.08 The cor. of secs. 3, 4, 9 and 10.  
 Land, mountainous.  
 Soil, rocky, 4th rate.  
 Timber, cedar and pinyon.  
 Undergrowth, black brush, sagebrush and cactus.

From true point for cor. of secs. 15, 16, 21 and 22,  
 West, on true line, bet. secs. 16 and 21 (E.  $\frac{1}{2}$ ).  
 Over mountainous land, in canyon, thru dense undergrowth.  
 Ascend over precipitous NE. slope.  
 The sec. cor. point being inaccessible, obtain measurement  
 of the sec. line West therefrom by offset line as fol-  
 lows:

From the witness cor. to cor.  
 of secs. 15, 16, 21 and 22,  
 which is 2.13 chs. S. 0° 2' E. from  
 sec. cor. point,  
 West, 36.68 chs. on offset line  
 in sec. 21, parallel  
 to and 2.13 chs. S.  
 of true sec. line.  
 Thence,



6.00 N. 0° 2' W., 2.13 chs. to 36.68 ch. station on true sec. line.  
 (Approx.) Top of cliffs, bearing NW. and SE. facing NE., and  
 forming South or right rim of canyon. Leave canyon. En-  
 ter gently rolling land.  
 Ascend 96 ft., over SE. slope, to  
 33.00 (Approx.) Top of ascent brs. NE. and SW. Thence over nearly  
 level land.  
 36.68 Offset point.  
 Thence, West, on true line, bet. secs. 16 and 21, continuing  
 measurement from sec. cor. point.  
 40.00 East, or left rim of a deep canyon, bearing NW. and SE.  
 Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in  
 the ground to bed rock, deposit a stone, marked with  
 a cross (x) at base of post, and raise a mound of  
 stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$  S 16  
 S 21  
 1922

No bearing trees available.

22 Survey of part of Subdivision lines of T. 31 N., R. 14 W.

Chains.

Beyond this cor., the entire W.  $\frac{1}{2}$  of line, bet. secs. 16 and 21 falls on precipitous impassable cliffs on E. side of a canyon. This part of the line is therefore un-surveyable. About  $\frac{1}{2}$  mile W. of this  $\frac{1}{4}$  sec. cor., the bottom of this canyon runs S. into the bottom of the Colorado River Canyon about  $\frac{1}{2}$  mile dist.  
 Land, mountainous; gently rolling and nearly level.  
 Soil, gravelly and rocky, 3rd and 4th rate.  
 Timber, none.  
 Undergrowth, black brush.

7.00  
 15.00  
 25.00  
 38.80  
 40.00

From the cor. of secs. 9, 10, 15 and 16, West, on a true line, bet. secs. 9 and 16. Over nearly level land, thru. scattering undergrowth. Ascend 17 ft., over SE. slope.  
 Descend slightly over SW. slope.  
 Wash, 10 lks. wide, course SE. Asc. slightly over E. slope.  
 Descend slightly over SW. slope to  $\frac{1}{4}$  sec. cor.  
 Old road, brs. SE. and NW.  
 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

$\frac{1}{4}$  S 9  
 S 16  
 1922

49.30  
 59.30  
 68.00  
 75.00  
 78.40  
 80.00

No bearing trees available.  
 Continue over nearly level land. Desc. slightly over SW. slope, to  
 Enter gently rolling land. Desc. 45 ft., over W. slope, to  
 Rim of gulch, brs. NE. and SW. Enter mountainous land.  
 Descend 152 ft., over NW. slope, to  
 Bottom of rocky gulch, 20 lks. wide, course SW. into canyon.  
 Descend 130 ft., over SW. slope, to  
 Enter gently rolling land. Desc. gradually to  
 Wash, 10 lks. wide, course SW. from NW. at head of canyon, course S. Asc. slightly over E. slope, to  
 Set an iron post, 3 ft. long, 2 ins. in diam., 6 ins. in the ground to bed rock, deposit a stone marked with a cross (x) at base of post, and raise a mound of stone around post, for cor. of secs. 8, 9, 16 and 17, marked on brass cap,

T31N | R14W  
 S 8 | S 9  
 S17 | S16  
 1922

No bearing trees available.  
 Land, nearly level, gently rolling and mountainous.  
 Soil, sandy loam. Timber, none.  
 Undergrowth, sagebrush and cactus.

The line, bet. secs. 16 and 17, passes over precipitous cliffs, along bottom of canyon, course S., and is un-surveyable.

2.10  
 17.90  
 40.00

N. 0° 3' W., bet. secs. 8 and 9.  
 Over gently rolling land, thru. scattering undergrowth, Descend slightly over NE. slope, to  
 Draw, 10 lks. wide, course SE.  
 Ascend gradually over SW. and W. slope, to  
 Draw, 10 lks. wide, course SW. Asc. gradually over S. slope, to  
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

S 8 | S 9  
 1922

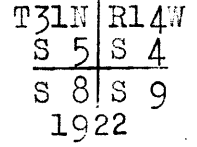
2" note



Survey of part of Subdivision lines of T. 31 N., R. 14 W. 23

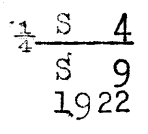
Chains.

No bearing trees available. Raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.  
 Enter rolling land. Asc. 78 ft., over S. slope.  
 48.10 Rounded point of spur, slopes SW. Desc. 40 ft., over NW. slope.  
 57.60 Head of draw, course SW. Asc. 40 ft., over SE. slope.  
 62.50 Point of spur, slopes SW. Desc. 35 ft., over NW. slope.  
 72.00 Draw, 10 lks. wide, course SW. Thence over nearly level land. Ascend slightly over S. slope, to  
 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 6 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for cor. of secs. 4, 5, 8 and 9, marked on brass cap,



No bearing trees available.  
 Land, gently rolling, rolling and nearly level.  
 Soil, sandy loam, 2nd rate.  
 Timber, none.  
 Undergrowth, black brush, yucca and sagebrush.

40.00 East, on a random line, bet. secs. 4 and 9. Set temp.  $\frac{1}{4}$  sec. cor.  
 80.08 Intersect the cor. of secs. 3, 4, 9 and 10. Thence,  
 West, on a true line, bet. secs. 4 and 9. Over mountainous land, thru scattering timber and dense undergrowth. Desc. 27 ft., over N. slope, to  
 5.30 Draw, at bend, course NW. from NE. Descend 125 ft., over N. slope, to  
 25.80 Same draw, 10 lks. wide, course SW. Enter rolling land. Ascend 11 ft., over SE. slope.  
 26.25 Low ridge, brs. NE. and W. Thence along top of ridge. Descend 55 ft. to  
 40.04 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in the ground, to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,



from which,  
 A pinyon, 16 ins. in diam., brs. S.  $28\frac{1}{2}^{\circ}$  E., 294 lks. dist., marked  $\frac{1}{4}$  S 9 BT.

No other bearing trees available.  
 Continue along top of ridge, bearing E. and W. Descend 100 ft., to  
 55.70 Old road, brs. SE. and NW. Leave top of ridge, brs. E. and SW. Desc. 48 ft., over NW. slope.  
 66.60 Draw, 20 lks. wide, course SW. Enter gently rolling land. Ascend 10 ft., over SE. slope, to  
 71.70 Descend 17 ft., over SW. slope, to  
 76.75 Enter nearly level land. Asc. slightly over S. slope, to  
 80.08 The cor. of secs. 4, 5, 8 and 9. Land, mountainous, rolling, gently rolling and nearly level.  
 Soil, sandy loam; 3rd rate.  
 Timber, cedar and pinyon.  
 Undergrowth, sagebrush.

40.00 N.  $0^{\circ} 8' W.$ , on a random line, bet. secs. 4 and 5. Set temp.  $\frac{1}{4}$  sec. cor.  
 80.14 Fall 2 lks. E. of the cor. of secs. 4, 5, 32 and 33, on N. bdy. of Tp., described in Book "F."

24 Survey of part of Subdivision lines of T. 31 N. R. 14 W.

Chains.

Thence,  
 S.0°9'E., on a true line, bet. secs.4 and 5.  
 Over rolling land, thru. dense undergrowth.  
 Descend slightly over W.slope, to  
 1.00 Draw, 10 lks.wide, course W.from SE.  
 Ascend slightly over NW.slope.  
 4.80 Descend 15 ft., over W.slope.  
 7.77 Draw, 10 lks.wide, course NW. Asc.15 ft., over NE.slope.  
 10.00 Low spur, slopes NW. Desc.22 ft., over SW.slope.  
 22.30 Draw, course W. Asc.60 ft., over NE.slope, to  
 40.14 Set an iron post, 3 ft.long, 1 in. in diam., 20 ins. in  
 the ground, to bed rock, supported in a mound of stone,  
 for  $\mp$  sec.cor., marked on brass cap,

$\pm$   
 S 5 | S 4  
 1922

No bearing trees available. Raise a mound of stone, 3 ft.  
 base, 2 ft.high, W.of cor.  
 Ascend 5 ft., over NE.slope.  
 42.00 Low ridge, brs.SE. and NW. Desc.12 ft., over SW.slope.  
 48.00 Asc. 16 ft., over NE.slope.  
 57.00 Low flat ridge, brs.SE. and NW. Enter scattering timber.  
 Descend 95 ft., over SW.slope, to  
 70.00 Foot of slope, from ridge brs.NW and SE. Enter nearly  
 level land. Desc.slightly over S.slope, to sec.cor.  
 75.85 Old road, brs.E. and W.  
 80.14 The cor.of secs.4,5,8 and 9.  
 Land, rolling and nearly level.  
 Soil, sandy loam, 2nd and 3rd rate.  
 Timber, very scattering cedar and pinyon in S.23chs.None  
 elsewhere.  
 Undergrowth, sagebrush and cactus.

From the cor.of secs.8,9,16 and 17,  
 West, on a true line, bet. secs.8 and 17.  
 Over rolling land, thru. scattering undergrowth.  
 Ascend 86 ft., over E. slope, to  
 14.72 Enter mountainous land. Asc.162 ft., over E.slope, to  
 21.80 Rim, brs.N. and S. Enter rolling land.  
 Ascend 56 ft., over E. and SE. slopes, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in  
 the ground to bed rock, deposit a stone, marked with  
 a cross (x) at base of post, and raise a mound of stone  
 around post, for  $\mp$  sec.cor., marked on brass cap,

$\frac{1}{4}$  S 8  
 S 17  
 1922

No bearing trees available. Enter dense undergrowth.  
 Ascend 17 ft., over SE.slope.  
 45.00 Ridge, brs.NE. and SW. Desc.95 ft., over NW.slope, to  
 63.00 Foot of slope from ridge, brs.N. and S. Enter nearly level  
 land. Desc.slightly to  
 76.93 Swale, drains S. Enter gently rolling land.  
 Ascend 15 ft., over E.slope, to  
 80.00 Set an iron post, 3 ft.long, 2 ins. in diam., 12 ins. in  
 the ground to bed rock, deposit a stone marked with a  
 cross (x) at base of post, and raise a mound of stone  
 around post, for cor.of secs.7,8,17 and 18, marked on  
 brass cap,

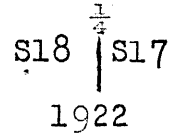
T31N | R14W  
 S 7 | S 8  
 S18 | S17  
 1922

No bearing trees available.

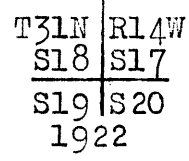
Chains.

Land, rolling, mountainous and nearly level.  
Soil, sandy loam, 2nd rate.  
Timber, none.  
Undergrowth, black brush, sagebrush, cactus and greasewood.

40.00 S.0° 3' E., bet. secs. 17 and 18.  
Over gently rolling land, thru dense undergrowth.  
Descend gradually over E. and SE. slopes, to  
Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in  
the ground for  $\frac{1}{4}$  sec. cor., marked on brass cap,



50.00 No bearing trees available. Dig pits, 18x18x12 ins., one  
each N. and S. of post, 3 ft. dist.  
Descend gradually over SE. slope.  
50.00 Draw, course SW. Enter rolling land.  
69.30 Ascend 100 ft., over NW. slope, to  
Point of bluff, 12 ft. high, brs. NE and SE facing W. Enter  
mountainous land. Desc. gradually along W. slope, to  
74.50 Spur, slopes SW. Desc. 70 ft., over SE. slope, to  
80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 8 ins. in  
the ground to bed rock, deposit a stone, marked with a  
cross (x) at base of post, and raise a mound of stone  
around post, for cor. of secs. 17, 18, 19 and 20, marked on  
brass cap,



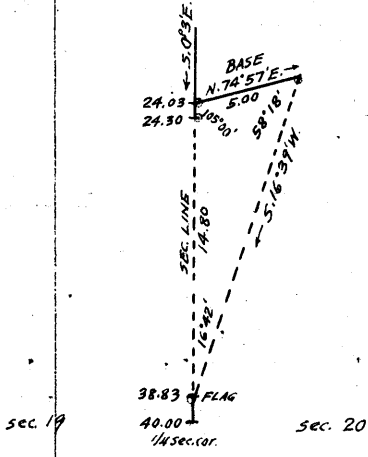
No bearing trees available.  
Land, gently rolling, rolling and mountainous.  
Soil, gravelly loam, 2nd and 3rd rate.  
Timber, none.  
Undergrowth, black brush.

The line between secs. 17 and 20 is unurveyable, owing to  
impassable cliffs, which prevent the establishment of  
cor. monuments at their true points or witness cors.  
thereto within allowable limits on or off the line.

4.25 S.0° 3' E., on a true line, bet. secs. 19 and 20 (N.  $\frac{1}{2}$ ).  
Over mountainous land, thru dense undergrowth.  
Descend 93 ft., over SE. slope.  
21.80 Gulch, 30 lks. wide, course SW. into canyon.  
Ascend 260 ft., over steep NW. slope.  
Spur, slopes W. Point of same brs. W. 100 lks. dist., from  
which occurs a precipitous descent of about 500 ft. to  
bottom of canyon, about 10 chs. W.  
Descend 15 ft., over S. slope.  
24.03 Triangulation point. Continue chaining to  
24.30 Top of cliff, 150 ft. high, bearing E  $\frac{1}{4}$  and W. facing S., and  
forming N. or right rim of a short side canyon. Chain-  
ing beyond this point is impracticable owing to precip-  
itous sides of this canyon; therefore, triangulate as  
follows:

26 Survey of part of Subdivision lines of T. 31 N. R. 14 W.

Chains.



From 24.03 ch. station on sec. line, measure a Base N. 74° 57' E., 5.00 chs.  
 Set flag ahead on sec. line at S. or left rim of canyon.  
 From NE. end of Base, the flag brs. S. 16° 39' W.  
 From SW. end of Base, the vertical angle to point ahead on sec. line in bottom of canyon is - 30°  
 Dist. on sec. line = 24.03 chs. S. 0° 3' E.  
 Dist. triangulated = 14.80 chs. S. 0° 3' E.  
 Total distance = 38.83 chs. S. 0° 3' E.

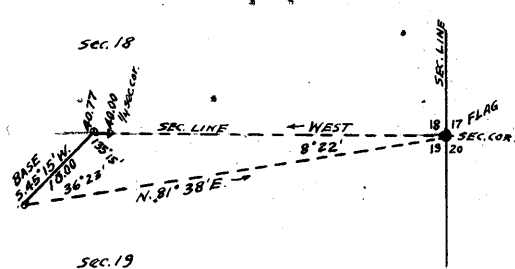
- Approximate descent from N. rim of canyon to bottom is 307 ft,
- 32.00 (Approx.) Bottom of short side canyon, course W. into bottom of a canyon, course S. at about 10 chs. W.
- 38.00 Ascend about 150 ft. over precipitous N. slope, to (Approx.) Foot of cliff, 150 ft. high, bearing E. and W. facing N.
- 38.83 Triangulation point at top of same cliff, bearing E. and W., and forming the South or left rim of the canyon. Continue line and measurement by chaining.
- 40.00 Ascend 10 ft., over NW. slope, to Set an iron post, 3 ft. long, 1 in. in diam., 8 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for 1/4 sec. cor., marked on brass cap,

S19 | S20  
 1922

from which,  
 A cedar, 14 ins. in diam., brs. S. 5° E., 240 lks. dist., marked 1/4 S 20 BT.  
 A cedar, 12 ins. in diam., brs. N. 64 1/2° W., 110 lks. dist., marked 1/4 S 19 BT.

From this cor.,  
 The bottom of the Colorado River Canyon, course NW., brs. SW. about 1 mile dist.  
 At a point 4.60 chs. S. of this 1/4 sec. cor., impassable cliffs on the N. or right wall of said canyon prevent the survey of S. 1/4 of line bet. secs. 19 and 20.  
 Land, mountainous.  
 Soil, rocky, 4th rate.  
 Timber, cedar and pinyon.  
 Undergrowth, black brush, sage brush, cactus and greasewood.

From cor. of secs. 17, 18, 19 and 20,  
 West, on true line, bet. secs. 18 and 19 (E. 1/2).  
 Over mountainous land, thru. dense undergrowth.  
 The line crosses two canyons, the sides of which are too precipitous and broken to permit of accurate chaining; therefore, triangulate as follows:



Set flag on the cor. of secs. 17, 18, 19 and 20.  
 From a point ahead on sec. line at W. or right rim of second canyon, measure a Base S. 45° 15' W., 10 chs. along the canyon rim.  
 It is impracticable to chain a longer base.  
 From SW. end of Base, the flag brs. N. 81° 38' E.

The vertical angle from NE. end of Base to flag is - 6°.  
 Dist. triangulated = 40.77 chs. West.  
 By return measurement = 40.00 chs. West.

BOOK 8888

## Survey of part of Subdivision lines of T. 31 N., R. 14 W. 27

Chains.  
 20.00 (Approx.) Bottom of canyon, about 300 ft. below cor. of secs. 17, 18, 19 and 20, course S. and SW. into the bottom of the Colorado River.  
 Ascend about 530 ft. over precipitous E. slope, to  
 30.00 (Approx.) Center of flat point of bench, 3 chs. wide extending S. about 10 chs. between canyons.  
 Descend about 200 ft. over precipitous W. slope.  
 34.00 (Approx.) Bottom of canyon, course S. Heads about 10 chs. N. Asc. about 250 ft., over precipitous SE. slope.  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

 $\frac{1}{4}$  S 18

S 19

1922

No bearing trees available.

At 77 lks. W. of this  $\frac{1}{4}$  sec. cor. is the W. or right rim of canyon, and beyond the rim the sec. line crosses nearly level bench for about 25 chs., where it intersects the right rim of the Colorado River Canyon. The point for cor. of secs. 13, 18, 19 and 24 on the W. bdy. of the Tp. falls on face of cliffs, and no point within allowable limits being available for the establishment of a witness cor. thereto, the W.  $\frac{1}{2}$  of line bet. secs. 18 and 19 is unsurveyable.

Land, mountainous.

Soil, rocky, 4th rate.

Timber, none.

Undergrowth, black brush and cactus.

From the cor. of secs. 7, 8, 17 and 18,  
 West, on a random line, bet. secs. 7 and 18.  
 40.00 Set temp.  $\frac{1}{4}$  sec. cor.  
 78.60 Fall 23 lks. S. of the cor. of secs. 7, 12, 13 and 18, on W. bdy. of Tp., hereinbefore described.  
 Thence,  
 S. 89° 50' E., on a true line, bet. secs. 7 and 18.  
 Over level land, thru. scattering undergrowth.  
 25.00 Leave level, and enter gently rolling land.  
 Ascend 45 ft., over SW. slope.  
 35.00 Descend 23 ft., over SE. slope, to  
 38.60 Set an iron post, 3 ft. long, 1 in. in diam., 10 ins. in the ground to bed rock, deposit a stone, marked with a cross (x) at base of post, and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor., marked on brass cap,

 $\frac{1}{4}$  S 7

S 18

1922

78.60 No bearing trees available.  
 Descend 110 ft., over E. slope, to  
 The cor. of secs. 7, 8, 17 and 18.  
 Land, level and gently rolling.  
 Soil, gravelly, 3rd rate.  
 Timber, none.  
 Undergrowth, black brush and cactus.

N. 0° 3' W., bet. secs. 7 and 8.  
 Over gently rolling land, thru. dense low undergrowth.  
 Ascend gradually over E. slope, to  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor., marked on brass cap,

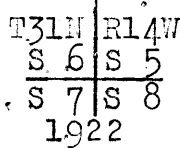
S 7 | S 8

1922

28 Survey of Subdivision lines of T. 31 N., R. 14 W.

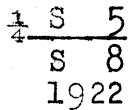
Chains.

No bearing trees available. Dig pits, 18x18x12 ins., one each N. and S. of cor. 3 ft. dist.  
Ascend gradually over E. slope, to  
80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground for cor. of secs. 5, 6, 7 and 8, marked on brass cap,



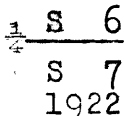
No bearing trees available. Dig pits, 18x18x12 ins., one each NE., SE., SW. and NW. of post, 3 ft. dist.  
Land, gently rolling.  
Soil, sandy loam, 2nd rate.  
Timber, none.  
Undergrowth, black brush, sagebrush, cactus and greasewood.

40.00 East, on a random line, bet. secs. 5 and 8.  
Set temp.  $\frac{1}{4}$  sec. cor.  
80.00 Intersect the cor. of secs. 4, 5, 8 and 9,  
Thence,  
West, on true line, bet. secs. 5 and 8.  
Over nearly level land, thru. dense undergrowth.  
15.00 Leave nearly level, and enter rolling land.  
Ascend 100 ft., over NE. slope.  
27.40 Low hill, brs. SE. and NW.  
Descend 48 ft., over SW. slope, to  
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for  $\frac{1}{4}$  sec. cor., marked on brass cap,



No bearing trees available. Dig pits, 18x18x12 ins., one each E. and W. of cor., 3 ft. dist.  
Descend slightly over SW. slope.  
42.00 Shallow draw, course S. Enter gently rolling land.  
Ascend gradually over E. slope, to  
80.00 The cor. of secs. 5, 6, 7 and 8.  
Land, nearly level, rolling and gently rolling.  
Soil, sandy, 2nd and 3rd rate.  
Timber, none.  
Undergrowth, sagebrush and cactus.

40.00 N. 89° 50' W., on a random line, bet. secs. 6 and 7.  
Set temp.  $\frac{1}{4}$  sec. cor.  
78.69 Fall 9 lks. N. of the cor. of secs. 1, 6, 7 and 12, on W. bdy. of Tp., hereinbefore described.  
Thence,  
S. 89° 54' E., on a true line, bet. secs. 6 and 7.  
Over nearly level land, thru. scattering undergrowth.  
38.69 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for  $\frac{1}{4}$  sec. cor., marked on brass cap,



No bearing trees available. Dig pits, 18x18x12 ins., one each E. and W. of cor. 3 ft. dist.  
Continue over nearly level land.  
60.00 Rim of bench brs. N. and S. Leave nearly level surface of bench. Enter gently rolling land.  
Descend 65 ft., over E. slope, to  
78.69 The cor. of secs. 5, 6, 7 and 8.

Survey of part of Subdivision lines of T. 31 N., R. 14 W. 29

Chains.

Land, nearly level and gently rolling.  
Soil, red sandy loam, 2nd rate.  
Timber, none.  
Undergrowth, black brush, yucca, sage brush and cactus.

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40.00 N.0°9'W., on a random line, bet. secs. 5 and 6.  
Set temp.  $\frac{1}{4}$  sec.cor.  
80.14 Fall 5 lks.E.of the cor.of secs. 5,6,31 and 32, on N.bdy.  
of Tp., described in Book "F."  
Thence,  
S.0°11'E., on a true line, bet. secs. 5 and 6.  
Over gently rolling land, thru.scattering undergrowth.  
Ascend gradually over NE.slope,to  
40.14 Set an iron pest, 3 ft.long, 1 in. in diam., 26 ins. in  
the ground, for  $\frac{1}{4}$  sec.cor., marked on brass cap,

$\frac{1}{4}$   
 S 6 | S 5  
 1922

80.14 No bearing trees available. Dig pits, 18x18x12 ins., one  
each N. and S.of cor. 3 ft. dist.  
Ascend gradually over NE. and E.slopes,to  
The cor.of secs.5,6,7 and 8.  
Land, gently rolling.  
Soil, red sandy loam, 2nd rate.  
Timber, none.  
Undergrowth, black brush,yucca,sagebrush and cactus.

Boundaries of that part of Township 31 North, Range 14 West, surveyed under Group 73.

Latitudes, departures, and closing errors.

Lines designated.	True course.	Dist.	Latitudes,		Departures.	
			N.	S.	E.	W.
South boundary,	West,	80.00				80.00
Subdivisional Boundary.	N.0°1'W.	320.00	320.00			.10
	West,	320.00				320.00
	N.89°50'W.	78.60	.23			78.60
West boundary,	North,	160.00	160.00			
North boundary,	East,	478.42			478.42	
East boundary,	South,	480.00		480.00		
Convergency,					.23	
<u>Totals,</u>			480.23	480.00	478.65	478.70
			480.00			478.65
<u>Error in latitude,</u>			0.23			
<u>Error in departure,</u>					0.05	

The continued satisfactory adjustment of the solar apparatus during the survey of this township is indicated from field tests described in Book "H."

GENERAL DESCRIPTION.

The survey of Township 31 North, Range 14 West, G. & S. R. Base and Meridian, Arizona, as described in the

foregoing field notes includes all of the land in said township which it is possible to survey. The unsurveyed portion of the township is situated in the Colorado River Canyon and side canyons joining same. The surface of the surveyed portion varies from level to mountainous. The mountainous surface is mainly in the N. E. quarter of the township. Rolling and nearly level surface predominates in the surveyed portion of the S. E. quarter of the township and rolling and gently rolling surface in the N. W. quarter. Parts of secs. 7 and 18 have a level surface. The Colorado River course NW., enters the Tp. approximately on the S. bdy. of sec. 54 and leaves on the W. bdy. of sec. 19. The center of this river forms the N. bdy. of the Hualapai Indian Reservation, therefore the part of this township situated south of the river is within said reservation.

The Colorado River contains the only permanent water in the township.

The soil over most of the surveyed part of the township is rocky and gravelly 3rd and 4th rate. A gravelly 2nd rate soil predominates in the N. W. quarter of the township.

The timber, a scattering growth of cedar and pinyon, is confined to the east one-half of the township, the most of the west half being devoid of timber.

The undergrowth, blackbrush, sagebrush, greasewood, yucca and cactus is prevalent in all sections, in dense and scattering growths in about equal proportions.

There are no settlers or improvements, and no signs of valuable mineral deposits.

The only road in the township is one beginning in sec. 16 and bearing northerly through secs. 9, 4 and 5.





CERTIFICATE OF UNITED STATES SURVEYOR.

BOOK 3636

I, William E. Hiester, U. S. Surveyor, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for Group 73, Arizona bearing date of the 12th day of October, 1916, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the South boundary and Subdivision lines of

TOWNSHIP 31 NORTH, RANGE 14 WEST,

of the Gila and Salt

River Base and Meridian, in the State of Arizona, which are represented in the foregoing field notes and by diagram on page 1 hereof as having been executed by me, and under my direction; and that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General, for Group 73, Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Place, Phoenix Arizona
Date, May 15 1914

William E. Hiester
U. S. Surveyor.

APPROVAL:

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

The foregoing field notes of the survey of

executed by
under his special instructions dated
critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved

U. S. Surveyor General

I certify that the foregoing transcript of the field notes of the above described surveys in
has been correctly copied from the original notes on file in this office

U. S. Surveyor General



34  
BOOK 3636

CERTIFICATE OF UNITED STATES ~~SURVEYOR~~ TRANSITMAN

I, Benjamin J. Kinsey, <sup>Transitman</sup>~~Surveyor~~, U. S. ~~Surveyor~~, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for Group 73, Arizona bearing date of the 12th day of October, 1916, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the West boundary, and Subdivision lines of

TOWNSHIP 31 NORTH, RANGE 14 WEST

of the Gila and Salt River Base and Meridian, in the State of Arizona, which are represented in and by diagram on page 1 hereof the foregoing field notes/as having been executed by me, and under my direction; and that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General, for Group 73, Arizona and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Place:: Lanfair, Calif.  
Date:: June 11, 1924

Benjamin J. Kinsey  
U. S. Surveyor.  
Transitman.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona. Sept. 20, 1924.

The foregoing field notes of the survey of

Part of the West boundary,

Part of the South boundary, and

Part of the Subdivision lines of

TOWNSHIP 31 NORTH, RANGE 14 WEST,

of the Gila and Salt River Base and Meridian, in the State of Arizona

executed by William E. Hiester, U.S. Surveyor & Benjamin J. Kinsey, U.S. Transitman, under ~~the~~ special instructions dated Oct. 12, 1916, for Group 73, Arizona, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Charles M. Donohoe  
U. S. Surveyor General.

~~I certify that the foregoing transcript of the field notes of the above described surveys in~~  
~~has been correctly copied from the original notes on file in this office.~~