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# FIELD NOTES

OF THE RESURVEY OF

Part of the EAST BOUNDARY of T. 12 S., R. 11 E.,

OF THE RETRACEMENT OF

Part of the SUBDIVISION LINES,

AND OF THE SURVEY OF

Part (Completion) of the SOUTH BOUNDARY, and

Part (Completion) of the SUBDIVISION LINES of

TOWNSHIP 12 SOUTH, RANGE 12 EAST.

Of the Gila and Salt River Base and Meridian,

In the State of Arizona

EXECUTED BY

William H. Thorn, U. S. Cadastral Engineer.

In the capacity of U. S. Surveyor, under Special Instructions dated May 31, 1921, issued by the United States Surveyor General to govern surveys included in Group No. 117, Arizona, which were approved by the Commissioner of the General Land Office, June 27, 1921, and Assignment Instructions dated October 1, 1921.

Retracement, Resurvey & Survey commenced November 5, 1921.

Retracement, Resurvey & Survey completed November 9, 1921.

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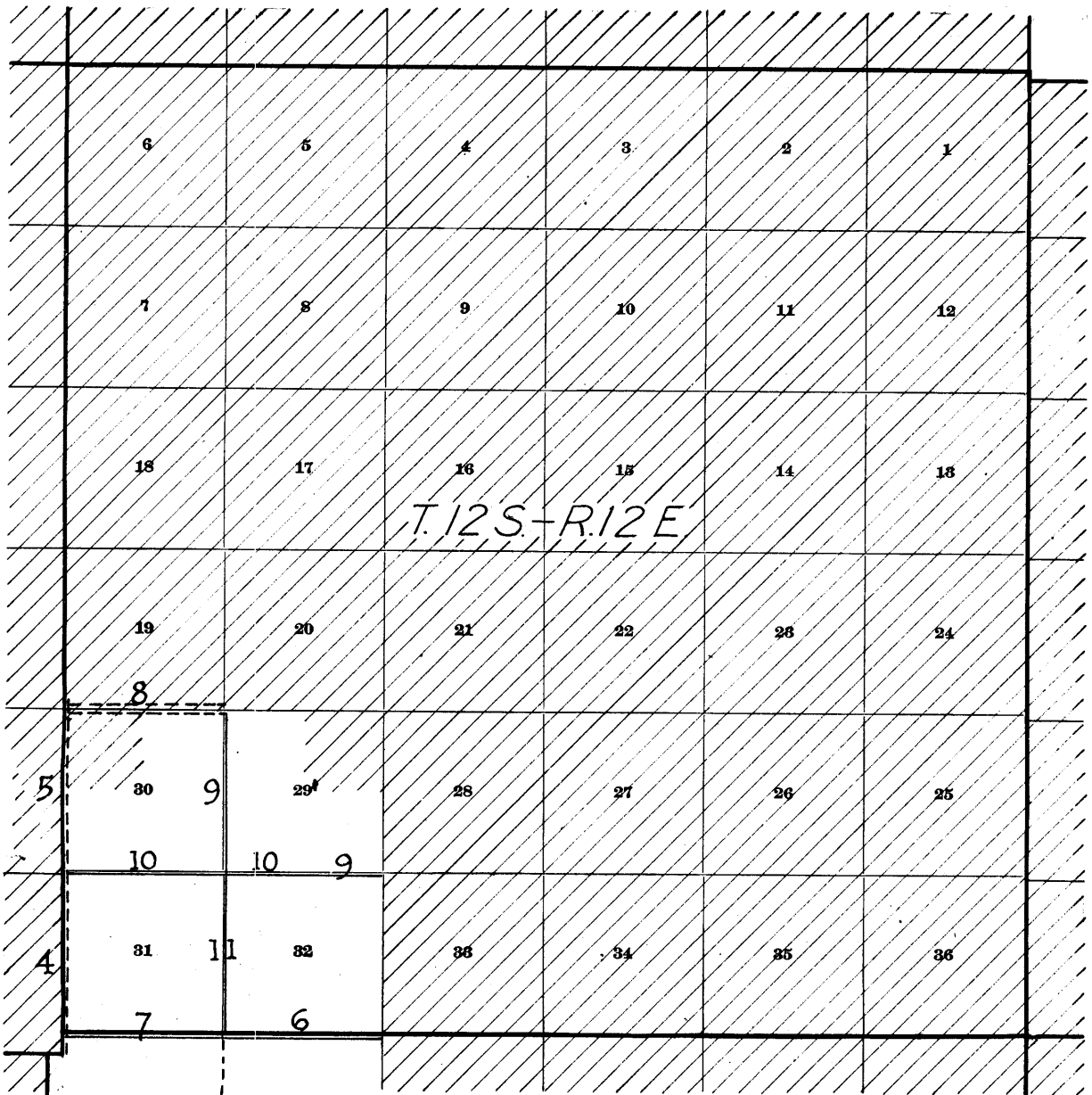
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Book "B"

Group 117-Arizona.

BOOK 3599

# INDEX DIAGRAM.



- Lines surveyed under this group.
- - - - Lines resurveyed under this group.
- ==== Lines retraced under this group.
- //// Areas surveyed as per plats on file.
- ..... Unsurveyed.

DATE DIAGRAM

BOOK "B"

Group 117 Arizona

Township 12 South, Range 12 East

	6	5	4	3	2	1
	7	8	9	10	11	12
	18	17	16	15	14	13
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11-9-21	30	29	28	27	26	25
11-8-21	11-8-21	11-7-21				
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————— Indicates surveys executed by William H. Thorn, U.S. Cadastral Engineer on dates shown thereon.

----- Indicates retracements executed by William H. Thorn, U.S. Cadastral Engineer on dates shown thereon.

----- Indicates resurveys executed by William H. Thorn, U.S. Cadastral Engineer on dates shown thereon.

————— Indicates previously accepted surveys.

Retracements, Resurveys and Surveys herein described were executed on dates shown on diagram on page 1 hereof, by William H. Thorn, U.S. Cadastral Engineer, using Young and Sons light mountain transit No. 8592; equipped with full vertical circle and Smith solar attachment; unless otherwise specified, all azimuth determinations are accomplished with the solar attachment.

November 4, 1921: I examine the adjustments of the instrument and correct all errors; then, to test the solar apparatus, by comparing its indications, resulting from observations made during a.m. and p.m. hours with a meridian established by Polaris observations, I proceed as follows:.

At camp in NE $\frac{1}{4}$  of sec. 5, T. 13 S., R. 12 E., G. and S. R. B. and M., Arizona, lat. 32° 20' N., long. 111° 8' W., at 4 hrs. 38.5 m., a.m., l.m.t., I observe Polaris at western elongation, making four observations, two each with the telescope in direct and reversed positions, and mark the mean point in the line thus determined on a peg driven firmly in the ground; 5 chs. N.

Azimuth of Polaris at western elongation is 1° 18' 57".

At 8 hrs. 0 m., a.m., l.m.t., I lay off the azimuth of Polaris, 1° 19' to the east, and mark the meridian thus determined by a tack driven in a peg firmly set in the ground, 5 chs. N.

At 9 hrs. 0 m., a.m., l.m.t., I set off 32° 20' N. on the lat. arc; 15° 19 $\frac{1}{2}$ ' S. on the decl. arc; and determine a meridian with the solar, which I find to agree with the true meridian.

At apparent noon, with the lat. arc unchanged, I observe the sun on the meridian with the solar; the resulting reading of the decl. arc is 15° 22 $\frac{1}{2}$ ' S. which is the computed decl. of the sun.

At 3 hrs. 0 m., p.m., l.m.t., with the lat. arc unchanged, I set off 15° 24 $\frac{1}{2}$ ' S. on the decl. arc; and determine a meridian with the solar, which I find to agree with the true meridian.

As all of the solar observations during the usual hours of solar work come within 1' 30" of the true meridian, I conclude that the adjustments of the instrument are satisfactory.

Unless otherwise specified, all measurements are made with a Lufkin steel tape, 5 chs. in length, compared with a Lufkin standard steel tape and found correct. The measurements are made on the slope, the vertical angles determined and the slope measurements properly reduced to true horizontal distances.

3

Resurvey of Part of  
The East Boundary of T. 12 S., R. 11 E.

Chains

The North 5 miles of the East Boundary of T. 12 S., R. 11 E. were surveyed in 1895, by P. Contzen, U.S.D.S. The North  $4\frac{1}{2}$  miles were retraced, the S.  $\frac{1}{2}$  mile bet. secs. 25 and 30 resurveyed and the mile bet. secs. 31 and 36 surveyed by J.B. Wright, U.S.S., in 1913, who established a closing cor. of Ts. 12 S., Rs. 11 and 12 E., at a point 7.58 chs. E. of the original cor. of Ts. 12 and 13 S., Rs. 11 and 12 E., and changed the latter cor. to refer to T. 12 S., Rs. 11 and 12 E. only. No later retracement or resurvey of any part of this Tp. bdy. is of record. The following notes describe a resurvey of the S. 2 miles of the E. bdy. of T. 12 S., R. 11 E.

Retracement for Resurvey.

From the original closing cor. of Ts. 12 S., Rs. 11 and 12 E., hereinbefore described,  
51.53 North, on retracement, on E. bdy. of sec. 36 (S.  $\frac{1}{2}$ )  
Fall 9 lks. W. of the original  $\frac{1}{4}$  sec. cor. of secs. 31 and 36, hereinafter described.  
The true course and distance of S.  $\frac{1}{2}$  of E. bdy. of sec. 36 are therefore N.  $0^{\circ} 6'$  E. 51.53 chs.

Thence  
10.95 North, on retracement on E. bdy. of sec. 36 (N.  $\frac{1}{2}$ )  
Beyond this point precipitous descent over cliffs renders chaining impracticable therefore triangulate the measurement to the objective sec. cor. as described as follows and as shown on the diagram hereon:

Leave flag at this point on random line  
From a point due North of flag and 7 lks. W. of the cor. of secs. 25, 30, 31 and 36, measure a Base East 14.90 chs.

From E. end of Base the flag bears S.  $26^{\circ} 55' W$ .

Included angles of the triangle are  $63^{\circ} 05'$ ;  $26^{\circ} 55'$  and  $90^{\circ} 00'$  the sum of which is  $180^{\circ} 00'$

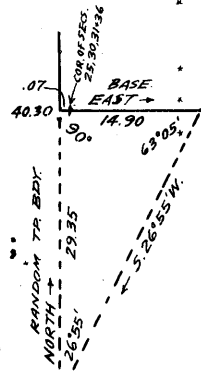
Triangulated measurement on random Tp. bdy. is obtained by

Tang.  $63^{\circ} 05'$  x Base or  $1.96969 \times 14.90 = 29.35$  chs., which added to 10.95 chs. gives 40.30 chs. N. from the  $\frac{1}{4}$  sec. cor. of secs. 31 and 36, the position of the triangulation point on random Tp. bdy., therefore at

40.30 Fall 7 lks. W. of the previously reestablished cor. of secs. 25, 30, 31 and 36, hereinafter described.  
The true course and distance of N.  $\frac{1}{2}$  of E. bdy. of sec. 36 are therefore N.  $0^{\circ} 6'$  E., 40.31 chs.

40.20 North, on retracement, on E. bdy. of sec. 25 (S.  $\frac{1}{2}$ )  
Fall 2 lks. E. of the original  $\frac{1}{4}$  sec. cor. of secs. 25 and 30, hereinafter described.  
The true course and distance of S.  $\frac{1}{2}$  of E. bdy. of sec. 25 are therefore N.  $0^{\circ} 2'$  W., 40.20 chs.

Thence  
39.92 North, on retracement, between secs. 25 and 30 (N.  $\frac{1}{2}$ )  
Fall 6 lks. E. of the original cor. of secs. 19, 24, 25 and 30, hereinbefore described.  
The true course and distance of N.  $\frac{1}{2}$  of line between 25 and 30 are therefore N.  $0^{\circ} 5'$  W., 39.92 chs.



Resurvey.

The original closing cor. of Ts. 12 S., Rs. 11 and 12 E. is an iron post, 3 ins. in diam., projecting 18 ins. above ground, firmly set in ground and mound of stone properly marked on brass cap and witnessed by two bearing trees, as follows:

Resurvey of Part of  
The East Boundary of T. 12 S., R. 11 E.

Chains

An ironwood, 13 ins. in diam., N. 36° W.,  
85 lks. dist., marked T12S R11E S36 CC BT  
An ironwood, 11 ins. in diam., N. 66° E.,  
47 lks. dist., marked T12S R12E S31 CC BT  
This cor. now refers to T. 12 S., R. 11 E., only, being  
the SE. cor. of said township therefore change the  
marking on the brass cap to read

T12S  
R11E R12E  
S36  
S 6  
T13S  
1913

Alter the marking on the NW bearing tree to read T. 12 S.,  
R. 11 E., S 36 B.T. and on the NE tree to read T. 13 S.,  
R. 12 E., B.T.

Thence

N. 0° 6' E. on a true line on E. bdy. of sec. 36 (S  $\frac{1}{2}$ ).  
Over rolling land, through scattering undergrowth, Ascend  
gradually over SE slope.

12.83 Point of intersection of the Tp. bdy. bet. Ts. 12 and 13  
S., R. 12 E. surveyed due West. Closing cor. of said  
Tps. established at this point as hereinafter describ-  
ed. Continue over rolling land. Ascend gradually  
over SE slope.

17.80 Leave rolling and enter mountainous land, (Tucson Mts.), as-  
cend 556 ft. over steep S. slope to

41.27 Ascend gradually over SW slope to 40.75

46.75 Ascend 113 ft. over very steep SW slope to

51.53 Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 31 and 36,  
which is an iron post, 1 in. in diam., projecting  
20 ins. above ground, firmly set in ground & mound of stone  
properly marked on brass cap and witnessed by a mound of stone  
W. of cor. No bearing trees.

Alter this cor. to refer to sec. 36 only by obliterating  
the mkg S.31 in the E. half of the brass cap on the  
post. No change in accessory is required.

Thence

N. 0° 6' E., on a true line, on E. bdy. of sec. 36 (N  $\frac{1}{2}$ )  
Over mountainous land, thru scattering undergrowth.  
Ascend 31 ft. over very steep SW slope to

1.13 (39.83 chs. N. 0° 6' E. from C.C. of Tp. 12 and 13 S.,  
R. 12 E., midpoint of W. bdy. of sec. 31) Set an iron  
post, 3 ft. long, 1 in. in diam., over a cross (x)  
mkd. on surface rock and raise a md. of stone around  
post, for reestablished  $\frac{1}{4}$  sec. cor. of sec. 31 only,  
mkd. on brass cap

|  
S31

1921

No bearing trees available. Ascend 265 ft. over  
steep SW slope to

7.02 Top of peak in ridge bearing E. and W. Descend 65 ft.  
over steep N. slope to

10.95 Top of cliff brs. E. and W., facing N. Beyond this point  
the line passes over a series of cliffs bearing E. and  
W., facing N. Measurement to sec. cor. by triangula-  
tion as hereinbefore described. Descend about 1000 ft.  
to

40.30 Intersect the previously reestablished cor. of secs. 25,  
30, 31 and 36, which is an iron post, 3 ins. in diam.  
projecting 18 ins. above ground, firmly set in ground  
and md. of stone, properly marked on brass cap and  
witnessed by a mound of stone W. of cor. No bearing  
trees.

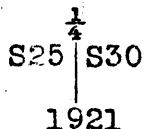
Alter this cor. to refer to secs. 25 and 36 only by  
obliterating the mkg. S. 30 S. 31 in the E. half of  
the brass cap on the post. No change in accessory  
required.

Resurvey of Part of  
The East Boundary of T. 12 S., R. 11 E.

Chains

Land, rolling and mountainous.  
Soil, rocky, 4th rate.  
Timber, none.  
Undergrowth, greasewood, black brush, and cat claw.

0.66 N.0° 2' W. on a true line, on E. bdy. of sec. 25 (S ½)  
Over mountainous land, through scattering undergrowth.  
Descend slightly over N. slope to  
(79.66chs. northing from C.C. of TS.12 and 13 S., R.12 E.)  
Point of intersection of the subdivision line between  
secs. 30 and 31, surveyed due West. Closing cor. of  
of said secs. established at this point as hereinafter  
described. Continue line and measurement. Descend  
63 ft. over N. slope to  
10.00 Foot of descent brs. E and W. Leave mountainous and  
enter gently rolling land, sloping NE.  
20.65 Wash 25 lks wide, course NE.  
29.35 Wash 40 lks. wide, course NE.  
39.49 Old road brs. NE and SW.  
40.20 Intersect ¼ sec. cor. of secs. 25 and 30, which is a  
volcanic stone, 12 x 9 x 6 ins. above ground, firmly  
set, mkd. ¼ on W face and witnessed by a mound of  
stone W. of cor. No bearing trees.  
Reconstruct this corner as follows: Alongside old stone  
monument set an iron post, 3 ft. long, 1 in. in diam.,  
26 ins. in the ground, for ¼ sec. cor. of secs. 25 and  
30 marked on brass cap.



No bearing trees available.

Thence

N.0°5'W., on a true line, between secs. 25 and 30 (N ½)  
over gently rolling land thru scattering timber and  
undergrowth.

5.55 Wash 20 lks. wide, course NE.  
11.25 Wash, 10 lks. wide, course NE.  
23.10 Wash, 30 lks. wide, course NE.  
37.85 Wash, 15 lks. wide, course NE.  
39.92 Intersect the original cor. of secs. 19, 24, 25 and 30  
which is a granite stone 10 x 5 x 8 ins. above ground,  
firmly set, marked with 2 notches on S. edge and 4  
notches on N. edge; and witnessed by two pits, one  
each, NW and SW of cor., a md. of earth W. of cor.  
and two bearing trees as follows:

A palo verde, 11 ins. in diam. S. 13 ½° E.,  
111 lks. dist., marked T12S R12E S30 BT..

A palo verde, 13 ins. in diam., S. 62 ½° W.,  
154 lks. dist., marked T12S R11 E S25 BT.

Land, S. 10 chs. mountainous N. 70 chs. gently rolling.  
Soil, rocky and gravelly, 3rd rate.  
Timber, scattering mesquite, palo verde, in N ½. No  
timber in S ½.  
Undergrowth, greasewood, black brush, and cactus.  
Fair grass.

Survey of Part (Completion )  
 South Boundary of T. 12 S., R. 12 E.

Chains

The East four miles of the South Boundary of T. 12 S., R. 12 E. were surveyed in 1895, by P. Contzen, U.S.D.S. All of this part of the line was retraced by J.B. Wright, U.S.D.S., in 1907. No later retracements or resurvey of any part of the line is of record. The following notes describe the survey of the west 2 miles of the line, thus completing the survey of the Tp. bdy.

The original cor. of secs. 4, 5, 32 and 33 is a granite stone, 8 x 10 x 12 ins. above ground, firmly set, marked with 4 notches on E edge and 2 notches on W. edge; and witnessed by four bearing trees as follows:

- A palo verde, 8 ins. in diam., N. 69½° E.,  
94 lks. dist., marked T12S R12E S33 BT.
- A palo verde, 7 ins. in diam., S. 73¾° E.,  
81 lks. dist., marked T13S R12E S4 BT.
- A palo verde, 14 ins. in diam., S. 26¼° W.,  
62 lks. dist., marked T13S R12E S5 BT.
- A palo verde, 7 ins. in diam., N. 4½° W.,  
54 lks. dist., marked T12S R12E S32 BT.

Reconstruct this cor as follows:

Alongside old stone monument

Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, marked on brass cap

T12S	R12E
S32	S33
S 5	S 4
T13S	
1921	

Thence

West on a true line, bet. secs. 5 and 32.  
 Over level land, through scattering timber and undergrowth.

- 5.00 Leave level and enter mountainous land (Tucson Mts)  
Ascend 210 ft. over E. and NE slopes.
- 22.20 Spur, slopes N. Desc. 46 ft. over NW slope.
- 28.00 Wash, 10 lks. wide, course NE. Asc. 260 ft. over E. slope.
- 38.15 Spur, slopes NE. Descend 10 ft. over N. slope to
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on bed rock, and raise a mound of stone around post for ¼ sec. cor., marked on brass cap

¼	S32	
	S 5	
	1921	

No bearing trees available.

Raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.  
 Asc. 68 ft. over NE slope.

- 55.00 Spur, slopes N. Desc. 55 ft. over W. slope.
- 60.90 Gulch, course N. Asc. 220 ft. over E. slope.
- 70.40 Spur, slopes N. Desc. 67 ft. over W. slope.
- 73.14 Gulch, course N. Asc. 120 ft. over NE slope to
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., on bed rock, and raise a mound of stone around post for cor. of secs. 5, 6, 31 and 32, marked on brass cap

T12S	R12E
S31	S32
S 6	S 5
T13S	
1921	



9

7

Survey of Part (Completion)  
South Boundary of T. 12 S., R. 12 E.

Chains

From which

- A palo verde, 4 ins. in diam., brs. N. 4½° E., 68 lks. dist., marked BT.
- A giant cactus, 14 ins. in diam., 35 ft. high, brs. S.48°E., 43 lks. dist., marked T13S R12E S5 BT.
- A palo verde, 4 ins. in diam., brs. S.86°W., 24 lks. dist., marked BT.
- A palo verde, 4 ins. in diam., brs. N.22°W., 17 lks. dist., marked BT.

Land, E. 5 chs. level, remainder mountainous.  
Soil, rocky, 4th rate.  
Timber, palo verde, mesquite, ironwood.  
Undergrowth, cat claw, ocotillo, greasewood, and cactus.

West on a true line, bet. secs. 6 and 31.  
Over mountainous land (Tucson Mts) through scattering timber and undergrowth.  
Asc. 90 ft. over NE slope.

12.81 Ridge, brs. NW. and SE. Bluff 150 ft. high, bearing NW and SE facing SW. From foot of bluff descend 295 ft. over SW slope.

36.50 Gulch, course S. Asc. 30 ft. over SE slope to

40.00 Spur, slopes S. Set an iron post, 3 ft. long, 1 in. in diam., on bed rock, and raise a mound of stone around post for ¼ sec. cor., marked on brass cap

¼ — S31  
S 6  
1921

No bearing trees available.

Raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

Desc. 220 ft. over W. slope.

59.35 Bottom of gulch 10 lks. wide, course SW. Leave mountainous and enter rolling land. Asc. 30 ft. over SE slope.

68.58 Spur, slopes SW. Desc. 35 ft. over W. slope.

77.50 Wash, 10 lks. wide, course S. from NE. Ascend gradually over SE slope to

79.00 Intersect the E. bdy. of T. 12 S., R. 11 E., at a point 12.83 chs. N.0° 6' E. from the SE cor. of T. 12 S., R. 11 E., hereinbefore described.

At the point of intersection,

Set an iron post, 3 ft. long, 3 ins. in diam., 12 ins. in the ground to bed rock and raise a mound of stone around post for closing cor. of Ts. 12 and 13 S., R. 12 E., marked on brass cap

T12S  
R12E  
S31 — CC  
S 6  
T13S  
1921

No bearing trees available.

Raise a mound of stone, 4 ft. base, 3 ft. high, E. of cor.

Land, mountainous and rolling.

Soil, rocky, 4th rate.

Timber, palo verde, ironwood, and mesquite.

Undergrowth, ocotillo, cactus, cat claw, and black brush.

Retracement of Part of the  
Subdivision Line of T.12 S., R.12 E.

Chains

The subdivision lines of T. 12 S., R.12 E., with the exception of the lines bet. secs. 31 & 32, 29 & 32, 30 & 31 and 29 & 30, were surveyed in 1895 by P. Contzen, U.S.D.S. No retracement or resurvey of any of subdivision lines in this Twp., is of record. The following notes describe a retracement of line bet. secs 19 and 30.

From the cor. of secs. 19, 24, 25 and 30, on the W. bdy. of Tp., hereinbefore described,

S.89°59'E. on random line, bet. secs. 19 and 30 (W ½)

Over gently rolling land, through scattering timber and undergrowth.

1.65 Wash, 15 lks. wide, course N.

2.70 Wash, 15 lks. wide, course N.

11.40 Wash, 25 lks. wide, course N.

18.90 Wash, 10 lks. wide, course N.

23.85 Wash, 40 lks. wide, course N.

27.80 Wash, 25 lks. wide, course N.

34.45 Wash, 10 lks. wide, course N.

37.12 Trail brs. NW. and SE.

38.35 Fall 20 lks. S. of the original ¼ sec. cor. of secs. 19 and 30, which is a malpais stone 10 x 8 x 6 ins. above ground, firmly set, marked ¼ on N. face and witnessed by two bearing trees as follows:

A palo verde, 9 ins. in diam., N.33°W.,  
180 lks. dist., marked ¼ S BT.

An ironwood, 12 ins. in diam. S.40°E.,  
62 lks. dist., marked ¼ S BT.

The true course and distance of W ½ of line bet. secs. 19 & 30 are therefore N.89°43'E., 38.35 chs.

S.89°59'E., on random line, bet. secs. 19 and 30 (E ½).

Over level land, thru scattering timber and undergrowth.

1.47 Wash, 20 lks. wide, course N.

Old road bears NE and SW.

40.00 Fall 21 lks. S. of the original cor. of secs. 19, 20, 29 and 30, which is a volcanic stone, 12 x 10 x 5 ins. above ground, firmly set, marked with 2 notches on S. edge and 5 notches on E. edge and witnessed by a mound of stone W. of cor. and four bearing trees as follows:

A palo verde, 12 ins. in diam., N.71¾°E.,  
122 lks. dist., marked T12S R12E S20 BT.

A palo verde, 9 ins. in diam., S.41½°E.,  
16 lks. dist., marked T12S R12E S29 BT.

A palo verde, 12 ins. in diam., S.75°W.,  
75 lks. dist., marked T12S R12E S30 BT.

A palo verde, 10 ins. in diam., N.52°W.,  
149 lks. dist., marked T12S R12E S19 BT.

The true course and distance of E ½ of line bet. secs. 19 and 30 are therefore N.89°43'E., 40.00 chs.

Land W ½ gently rolling, E ½ level.

Soil, sandy and rocky, 2nd and 4th rates.

Timber, mesquite, palo verde, and ironwood.

Undergrowth, greasewood, black brush, and cactus.

From the original cor. of secs. 19, 20, 29 and 30, hereinbefore described, S. 0° 3' E., on true line bet. secs. 29 and 30.

Over level land, through scattering timber and dense undergrowth.

5.00 Leave level and enter rolling land. Asc. 165 ft. over NW slope.

20.00 Ridge, brs. NE. and SW. Desc. 20 ft. over SE and E slopes to

40.00 Set an iron post, 3 ft. long, 1 in. in diam., on bed rock, and raise a mound of stone around post for  $\frac{1}{4}$  sec. cor., marked on brass cap

$\frac{1}{4}$   
 S30 | S29  
 1921

No bearing trees available.

Raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Continue over rolling land. Descend 20 ft. over E. slope.

45.00 Leave rolling and enter mountainous land (Tucson Mts.) Ascend 347 ft., over NE slope.

66.66 Same ridge brs. N. 20° W., and S. 20° E. Cliff about 50 ft. high brs. NW. and SE, facing SW. From foot of cliff, descend 75 ft. over SW. and W. slopes to

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., on bed rock, and raise a mound of stone around post for cor. of secs. 29, 30, 31 and 32, marked on brass cap

T12S | R12E  
 S30 | S29  
 S31 | S32  
 1921

No bearing trees available.

Raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$  ft. high, W. of cor. Land, level, rolling and mountainous.

Soil, rocky, 4th rate.

Timber, mesquite, palo verde, and ironwood.

Undergrowth, ocotillo, cactus, balck brush, and cat claw.

40.00 East on a random line, bet. secs. 29 and 32.

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

80.14 Intersect N. and S. line, 40 lks. S. of the original cor. of secs. 28, 29, 32 and 33, which is a malpais stone, 7 x 6 x 3 ins. above ground, marked with 1 notch on S edge and 4 notches on E. edge and witnessed by a mound of stone, W. of cor. and three bearing trees, as follows:

A palo verde, 10 ins. in diam., S. 62 $\frac{1}{2}$ ° E.

43 lks. dist., marked T12S R12E S33 BT.

An ironwood, 9 ins. in diam., S. 39° W.,

111 lks. dist., marked T12S R12E S32 BT.

A mesquite, 12 ins. in diam., N. 57 $\frac{1}{2}$ ° W.,

83 lks. dist., marked T12S R12E S 29 BT.

Thence

S. 89° 43' W. on a true line, bet. secs. 29 and 32.

Over level land, through scattering timber and undergrowth.

15.50 Wash, 15 lks. wide, 2 ft. deep, course N.

25.00 Leave level and enter rolling land. Ascend 55 ft. over NE slope.

33.00 Spur, slopes N. Desc. 38 ft. over W. slope to

40.07 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

Chains

$$\frac{1}{4} \frac{S29}{S32}$$
 1921

- No bearing trees available. Raise a mound of stone, 2½ ft. base, 2 ft. high, N. of cor.  
Descend 5 ft. over W. slope.
- 40.70 Wash, 30 lks. wide, course N. Asc. 30 ft. over NE slope.
- 50.00 Descend 16 ft. over NW slope.
- 58.00 Wash, 20 lks. wide; course N. Leave rolling and enter mountainous land (Tucson Mts.) Asc. 355 ft. over E slope.
- 76.64 Ridge, brs. N and S. Cliff, about 50 ft. high brs. N and S, facing W. From foot of cliff descend 85 ft. over W slope to
- 80.14 The cor. of secs. 29, 30, 31 and 32.  
Land, level, rolling and mountainous.  
Soil, rocky, 4th rate; volcanic formation.  
Timber, palo verde, ironwood, and mesquite.  
Undergrowth, ocotillo, cactus, black brush.  
Good grass.

- West, on a true line, bet. secs. 30 and 31.  
Over mountainous land, (Tucson Mts.), through scattering timber and dense undergrowth.  
Desc. 180 ft. over W. slope.
- 10.50 Gulch, 10 lks. wide, course NE.  
Leave mountainous and enter gently rolling land.  
Ascend 25 ft. over NE slope.
- 24.50 Thence over rolling N. slope to
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on bed rock, and raise a mound of stone, around post, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4} \frac{S30}{S31}$$
 1921

- No bearing trees available.  
Raise a mound of stone, 2½ ft. base, 2 ft. high, N. of cor.  
Continue over gently rolling land thru scattering undergrowth  
Descend 30 ft. over rolling N slope.
- 55.00 Ascend slightly over N slope
- 70.00 Leave gently rolling and enter mountainous land. Ascend 20 ft. over N. slope to
- 78.52 Intersect the E. bdy. of T. 12 S., R. 11 E., at a point 0.66 chs. N. 0° 2' W. from cor. of secs. 25 and 36, hereinbefore described.  
At point of intersection  
Set an iron post, 3 ft. long, 2 ins. in diam., on bed rock, and raise a mound of stone around post, for closing cor. of secs. 30 and 31, marked on brass cap

$$\begin{array}{|l} T12S \\ S30 \\ \hline S31 \\ R12E \end{array} \text{CC}$$
 1921

- No bearing trees available.  
Raise a mound of stone, 2 ft. base, 1½ ft. high, E. of cor.  
Land, mountainous, and gently rolling.  
Soil, rocky, 4th rate.  
Timber, palo verde, mesquite, and ironwood in E½. No timber in W½  
Undergrowth, ocotillo, cat claw and cactus.

Chains

From cor. of secs. 29, 30, 31 and 32  
S.0°3'E. on random line, bet. secs. 31 and 32  
Chaining is impracticable owing to broken cliffs, therefore triangulate measurement from the sec. cor. as described as follows, and as shown on the diagram hereon:

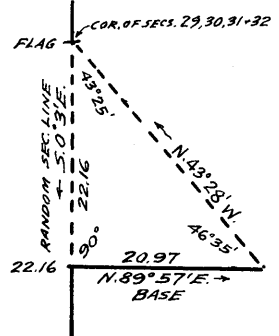
Leave flag at cor. of secs. 29, 30, 31 & 32

From point ahead on random sec. line  
S.0°3'E. from flag, measure a Base  
N.89°57'E., 20.97 chs.

From E. end of Base Flag brs. N.43°28'W  
Vertical angle from W end of base to  
Flag is -17°40'

Included angles of the triangle are 46°  
35', 90°00' and 43°25', the sum of  
which is 180° 00'

Triangulated measurement on random sec. line is obtained  
by Tang. 46°35' x Base or 1.05685 x 20.97 = 22.16  
chs.



- 22.16 Triangulation point on random line .
- Continue line and measurement by chaining.
- 40.00 Set temp.  $\frac{1}{4}$  sec. cor.
- 79.60 Fall 37 lks. W. of cor. of secs. 5, 6, 31 and 32, on  
the S. bdy. of Tp., hereinbefore described.
- Thence  
N.0°19'W. on a true line, bet. secs. 31 and 32.  
Over mountainous land (Tucson Mts) through scattering  
timber and dense undergrowth.
- 11.52 Desc. 116 ft. over NE slope to  
Right rim of canyon, brs. E. and W. Desc. 205 ft. over  
steep N. slope.
- 18.74 Bottom of canyon, course E. Asc. 160 ft. over steep  
S. slope to
- 23.25 Left rim of canyon, brs. E and W. Ascend 325 ft. over  
SE slope to
- 39.80 Set an iron post, 3 ft. long, 1 in. in diam., on bed rock,  
and raise a mound of stone around post, for  $\frac{1}{4}$  sec. cor.,  
marked on brass cap

$\frac{1}{4}$   
S31 | S32  
1921

No bearing trees available.

Raise a mound of stone, 2 $\frac{1}{2}$  ft. base, 2 ft. high, W. of  
cor.

From this cor., peak about 500 ft. high brs. West 15 chs.  
dist.

- 44.80 Ascend 85 ft. over SE slope to  
Ridge, brs. E. and W.. Desc. 203 ft. over N. slope to
- 57.44 Top of cliff, brs. E. and W. facing N. Discontinue  
chaining. Measurement to sec. cor. by triangulation  
hereinbefore described

- 62.00 Descend about 250 ft. to  
(Approximate) Head of gulch, course NW  
Thence along steep W. slope, broken by cliffs, facing W.  
Desc. about 215 ft. to

- 79.60 The cor. of secs. 29, 30, 31 and 32.  
Land, mountainous.  
Soil, rocky, 4th rate.  
Timber, palo verde, ironwood, and mesquite.  
Undergrowth, cactus, ocotillo, and cat claw.

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Boundaries of That Portion of T. 12 S., R. 12 E.

Surveyed Under This Group, (Secs. 29, 30, 31 & 32)

Latitudes, departures and closing errors.

Line designated.	True bearing.	Dist.	Latitudes		Departures	
			N.	S.	E.	W.
South Boundary.	West	159.00				159.00
West Boundary.	N.0°6'E.	79.00	79.00		.14	
	N.0°2'W.	40.20	40.20			.02
	N.0°5'W.	39.92	39.92			.06
Subdivisional Boundary.	N.89°43'E.	78.35	.39		78.35	
	East	80.00			80.00	
	S.0°2'E.	160.00		160.00	.09	
Convergency					.05	
Totals			159.51	160.00	158.63	159.08
				159.51		158.63
Error in latitude				0.49		
Error in departure						0.45

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

GENERAL DESCRIPTION.

In the portion of T. 12 S., R. 12 E., surveyed as described in the foregoing notes, the surface in secs. 29 and 30 is level and rolling, and in secs. 31 and 32 rolling and mountainous. The mountainous surface is at the northern end of the Tucson Mts. In secs. 29 & 30 the soil is sandy, 2nd rate; elsewhere it is rocky, 4th rate. Ocotilla, cat claw and cactus undergrowth and palo verde, mesquite, and ironwood timber grow in these secs. There are no settlers. No traces of valuable mineral deposits were found in this part of the Tp. There is no permanent running water in any of the water courses, and no springs or wells. No improved road traverses this part of the township.



## CERTIFICATE OF UNITED STATES SURVEYOR.

William H. Thorn, U.S. Cadastral Engineer

I, ~~U.S. Surveyor~~, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for Group 117, Arizona.

bearing date of the 31st day of May, 1921, 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, resurveyed all those parts or portions of the East Boundary of T. 12 S., R. 11 E., retraced all those parts or portions of the Subdivision Lines, and surveyed all those parts or portions of the South Boundary and the Subdivision Lines of

TOWNSHIP 12 SOUTH, RANGE 12 EAST

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 resurvey, retracement and 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 117, Arizona

and in the specific manner described in the field notes, and that the foregoing are the original field notes of such ~~survey~~, resurvey, retracement and survey

Place: AJO, Arizona

*William H. Thorn*  
U.S. CADASTRAL ENGINEER.

Date: May 19, 1924

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, May 26, 1924

The foregoing field notes of the resurvey of part of the East Boundary of T. 12 S., R. 11 E., retracement of part of the Subdivision Lines, and survey of part (completion) of the south boundary, and part (completion) of the subdivision lines of

TOWNSHIP 12 SOUTH, RANGE 12 EAST,

of the Gila & Salt River Base & meridian, Arizona.

executed by William H. Thorn, U.S. Cadastral Engineer,

under his special instructions dated May 31st, 1921 for Group 117 Arizona, ~~has~~ having been critically examined, and the necessary corrections and explanations made, the said field notes, and the resurveys retracements and 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.~~