

3133

BOOK 3133

4-679

NOV 19 1917

NOV 24 1917

NOV 23 1917

Book "A."
(Survey Exteriors)

FIELD NOTES

OF THE SURVEY OF THE

following Township boundaries:

West boundary of Township 21 North, Range 20 West,

South and North bdrs. of Township 22 North, Range 21 West,

East boundary of frac. Tp. 21 North, Range 22 West,

South, East & North bdrs. of frac. Tp. 22 North, Range 22 West,

West and North bdrs. of Township 23 North, Range 20 West,

West and North bdrs. of Township 23 North, Range 21 West,

North boundary of frac. Township 23 North, Range 22 West,

East and West bdrs. of Township 24 North, Range 21 West,

Of the Gila and Salt River Base and Meridian,

In the State of Arizona,

EXECUTED BY

Theo. O. Johnston, and Guy H. Richardson, U. S. Surveyors,

and

Edward O. Lyman and Hugo Price, U. S. Transitmen,

~~In the capacity of U. S. Surveyors~~, under instructions dated Jan. 6, 1915,

issued by the United States Surveyor General to govern surveys included in

Group No. 44, which were approved by the Commissioner of the General Land

Office, Jan. 26, 1915.

Survey commenced March 9, 1915.

Survey completed Feby. 17, 1916.

Executed under Assignment
Instructions dated Jan. 31, 1915 & Nov. 29, 1915.

3133

3133

BOOK 3133

3133

Book "A"

Group 44

See Special Index

INDEX DIAGRAM.

Township _____, Range _____

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

SPECIAL ~ INDEX ~ DIAGRAM

Book 3133

Book "A" ~ Group 44
(Survey of Township Boundaries)

Notes in this book (indexed) 3133

Notes in book "B" Group 44 3134

Surveys & Resurveys - Group 43

Surveys & Resurveys - Group 45

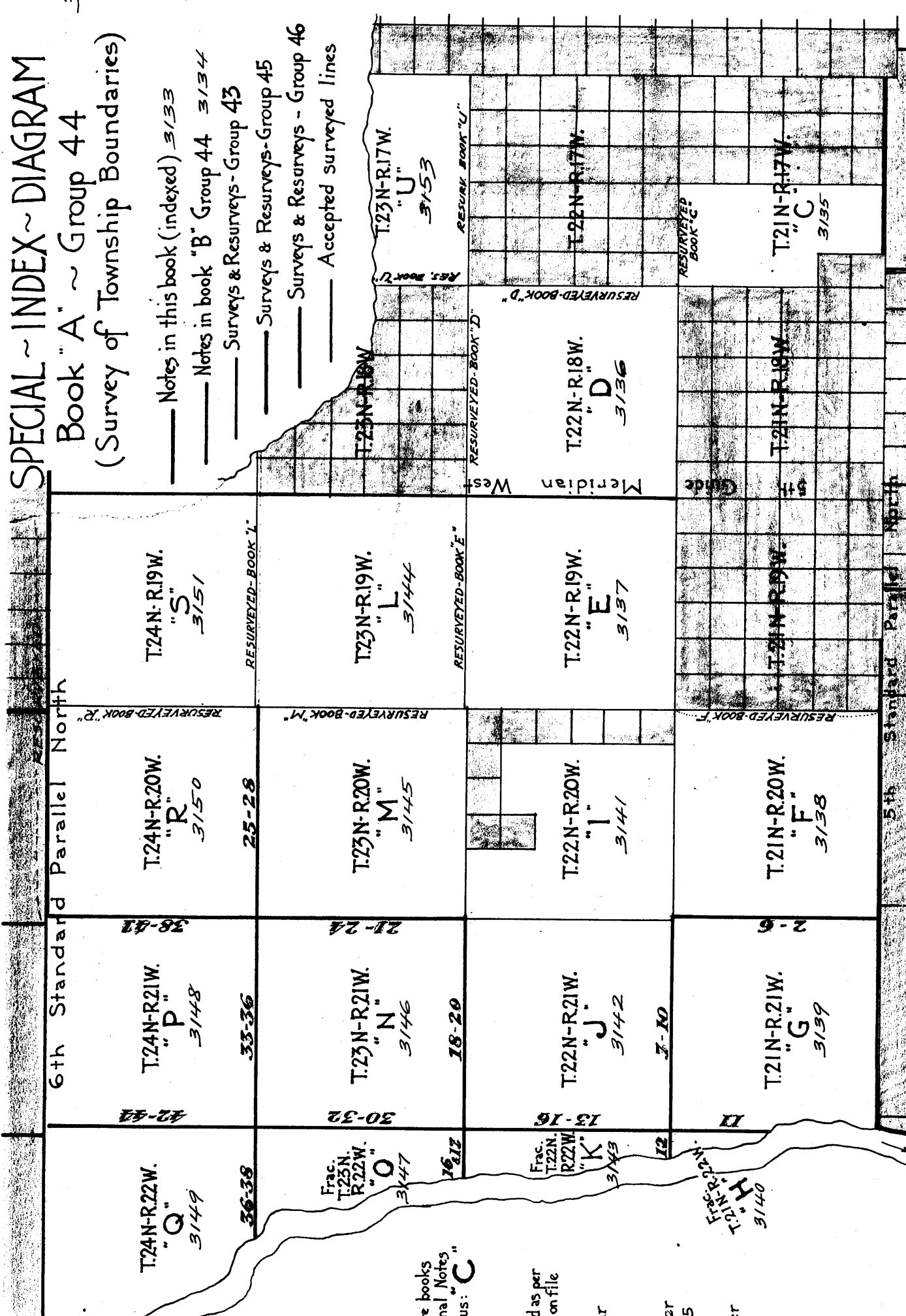
Surveys & Resurveys - Group 46

Accepted surveyed lines





BOOK 3133

Book No 3133

BOOK 3133



Red letters indicate books in which Subdivisional Notes are to be found - thus: "C"

-  Area surveyed as per accepted plats on file
-  Area under Group 43
-  Area under Group 45
-  Area under Group 46

INDEX

Showing the respective Surveys, Retracements and Resurveys of Standard lines and Township Exterior lines executed by each Surveyor and Transitman under Instructions for **GROUP 44 ARIZONA.**

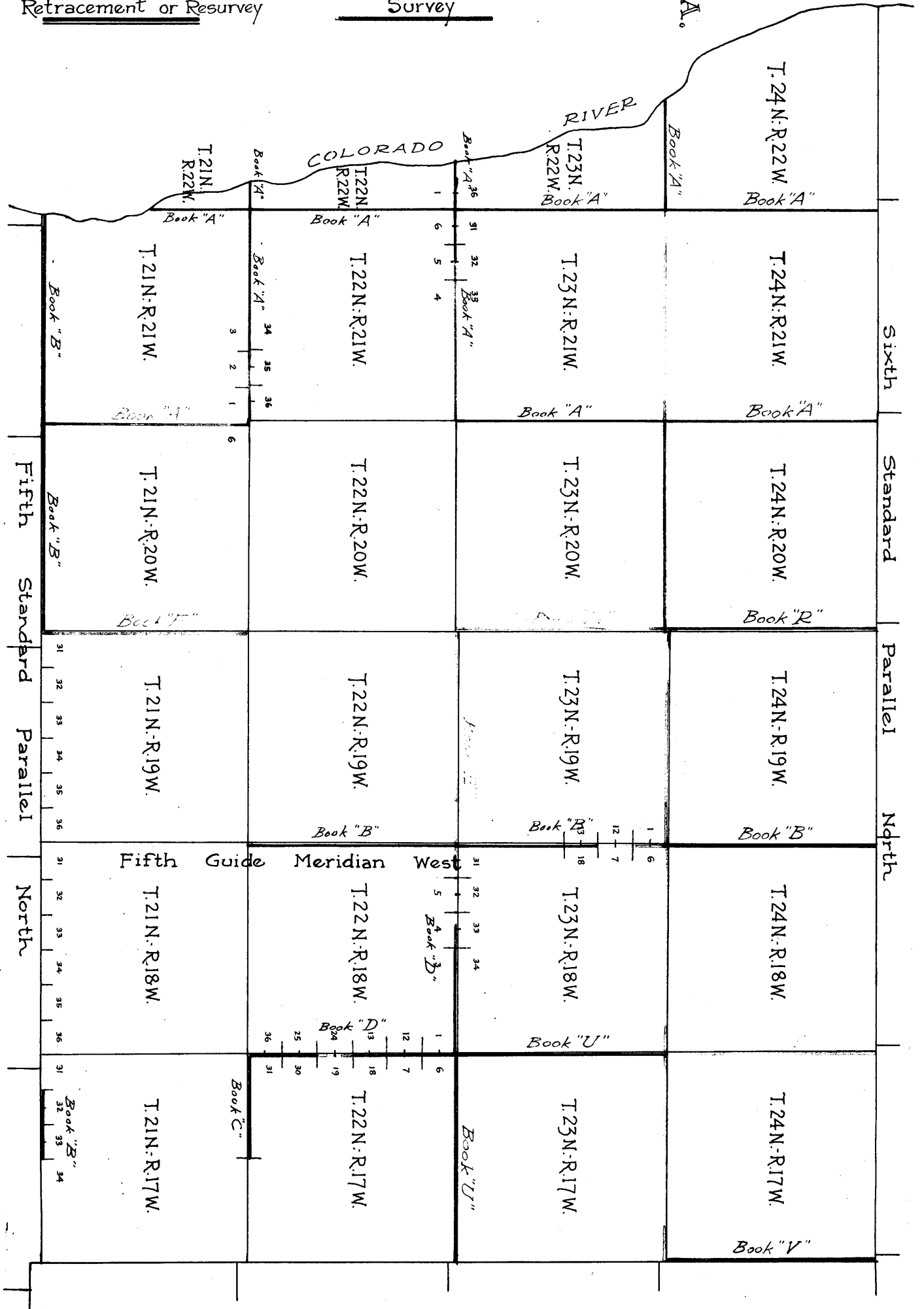
BOOK 3133

THEO. O. JOHNSTON - U.S. Surveyor
Retracement or Resurvey Survey

GUY H. RICHARDSON - U.S. Surveyor.
Retracement or Resurvey Survey

EDWARD O. LYMAN - U.S. Transitman
Retracement or Resurvey Survey

HUGO PRICE - U.S. Transitman
Retracement or Resurvey Survey



BOOK 3133

FINAL CERTIFICATE OF U.S. SURVEYORS AND TRANSITMEN

We, the undersigned, hereby certify on honor that, in pursuance of special instructions received from the U.S. Surveyor General for Arizona, bearing date of January 6, 1915, we have well, faithfully and truly, in our own proper persons, 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

G R O U P 44

which are represented on the diagram on the reverse hereof as having been severally been executed by us, and under our direction; and we do further certify on honor 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 of Arizona, and in the specific manner described in our respective field notes.

Theo C. Johnston
U.S. Surveyor.

Gay H. Richardson
U.S. Surveyor.

Edward C. Syman
U.S. Transitman.

signed subject to usual corrections
Hugo Rice
U.S. Transitman

Township Boundaries, Group 44.

3

Chains

The initials "T. O. J.", "G. H. R.", and the initials "E. O. L." and "H. P." are inserted in the following notes at the beginning and ending of those portions of the notes describing the surveys executed by Theo. O. Johnston, and Guy H. Richardson, U. S. Surveyors, and Edward O. Lyman and Hugo Price, U. S. Transitmen, respectively.

The field notes, with dates, of surveys made jointly by Johnston and Lyman, with description of instruments, record of approval by the assistant supervisor of surveys, field tests, and signatures, follow immediately herein; after which are written, in similar manner, the field notes of surveys made by Richardson and Price.

T.O.J., G.H.R., E.O.L., and H.P.

T. O. J.

Survey commenced Mar. 9, 1915, and executed by Theo. O. Johnston, U. S. Surveyor, using a Young and Sons' light mountain transit No. 8493, and Edward O. Lyman, U. S. Transitman, using a Young and Sons' light mountain transit No. 8490.

Both instruments have Smith solar attachments and full vertical circles. The horizontal limbs are provided with two double verniers placed opposite to each other, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs and vertical circles.

The instruments were approved, subject to satisfactory field tests, by the assistant supervisor of surveys, on Jan. 31, 1915.

All measurements made with steel tapes and clinometers.

I examine the adjustments of the instruments, and correct the level and collimation errors; then, wishing to observe Polaris at western elong., I proceed as follows:

At my camp near the N. bdy. of sec. 16, T. 21 N., R. 20 W., in latitude $35^{\circ}13'N.$, longitude $114^{\circ}25'30"W.$, at 8h 18m p. m., l. m. t., I observe Polaris at western elong., in accordance with instructions in the Manual, and mark a point in the line thus determined, by a tack driven in a wooden stake firmly set in the ground, 5 chs. N. of my station.

Mar. 9, 1915.

Mar. 10, 1915.

At 7h 00m a. m., l. m. t., I turn off the azimuth of Polaris $1^{\circ}23'.6$ to the east, and mark the meridian thus determined by cutting a groove in a stone firmly set in the ground east of the point established last night.

The magnetic bearing of the true meridian, at 7h 10m a. m., is $N15^{\circ}15'W.$; the angle thus determined gives the mag. decl. $15^{\circ}15'E.$

Mar. 11, 1915.

T. O. J.

West Boundary, T. 21 N., R. 20 W.

E. O. L.

Mar. 15, 1915.

I begin at the reestablished standard cor. of Tps. 21 N., Rs. 20 and 21 W. on 5th. Std. Par. N., described in Book "B." deflecting bearing of line from a transit line projected by means of carefully measured angles, from the meridian determined as hereinabove described, by observation on Polaris at western elong.; and, knowing, from subdivision of Tp. E. of line, that closing cor. will be required, I run North, bet. secs. 31 and 36, on a true line; over roughly rolling land, through scattering undergrowth. Desc. N. slope.

4.55 Wash, 10 lks. wide, course NW.

10.00 Enter wash, course W.; bank bears NE. and S. $75^{\circ}W.$

26.00 Leave wash; banks bear NE. and SW. Asc. S. slope.

Chains

28.65 Spur, slopes SW, Descend.
 36.55 Wash, 15 lks. wide, course W. Asc. S. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 14 ins. in the ground and 12 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 36 in W., and
 S 31 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor farther in ground.
 50.70 Spur slopes SW. Desc. NW. slope.
 53.23 Wash, 15 lks. wide, course S.80°W. Asc. SE. slope.
 66.00 Spur slopes SW. Desc. N. slope.
 69.20 Wash, 10 lks. wide, course W. for 3.00 chs., and then SW. Asc. S. slope.
 80.00 Set an iron post, $\frac{3}{4}$ ft. long, 3 ins. in diam., 18 ins. in the ground and 6 ins. in a mound of stone, for cor. of secs. 25, 30, 31 and 36, with brass cap, marked
 T 21 N in N. half,
 R 21 W S 25 in NW.,
 R 20 W S 30 in NE.,
 S 31 in SE. and
 S 36 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
 Land, roughly rolling.
 Soil, sandy, gravelly and stony; 4th. rate.
 No timber.
 Undergrowth, cactus, catclaw and greasewood.
 Mar. 15, 1915.

 Mar. 16, 1915.

North, bet. secs. 25 and 30,
 Over roughly rolling low ridges and spurs, general slope SW.
 5.00 Spur slopes S.60°W.
 8.25 Wash, 8 lks. wide, course S60°W.
 16.24 Spur slopes SW.
 18.47 Wash, 8 lks. wide, course SW.
 22.45 Spur slopes SW.
 26.70 Enter broad wash, course S.60°W.
 37.80 Leave same, and asc. SE. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 18 ins. in the ground, 8 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 25 in W., and
 S 30 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 Desc. N.W. slope.
 43.66 Wash, 10 lks. wide, course S.80°W.
 53.95 Wash, 10 lks. wide, course S.60°W. Ascend.
 57.40 Spur, slopes SW.
 66.52 Wash, 10 lks. wide, course SW.
 71.00 Road from Frisco to Hardyville bears N.60°E. and S.60°W. Spur slopes S.60°W. Descend N.W. slope.
 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 19, 24, 25 and 30, with brass cap, marked
 T 21 N in N. half,
 R 21 W S 24 in NW.,
 R 20 W S 19 in NE.,
 S 30 in SE., and
 S 25 in SW. quadrant, and
 1915 in S. rim;

Chains

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

Land, roughly rolling.

Soil, sandy, gravelly and stony; 4th. rate.

No timber.

Undergrowth, cactus, catclaw and greasewood.

North, bet. secs. 19 and 24,
over roughly rolling land, through scattering undergrowth.
Desc. NW. slope.

4.71 Enter broad wash, course W. Bank bears E. and W.

14.71 Leave same; bank bears E. and W.

37.23 Wash, 20 lks. wide, course SW.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ in N.,

S 24 in W. and

S 19 in E. half; and

1915 in S. rim;

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

49.40 Spur extends W; desc. N. slope.

52.10 Wash, 10 lks. wide, course N.70°W.

61.00 Spur extends W. Desc. N. slope.

63.90 Enter broad wash, course W.

66.00 Leave same.

78.15 Enter broad wash, course W. Bank bears E. and W.

79.39 Road from Frisco to Sheep Trail mine bears N.65°W. and S.65°E.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
the ground, for cor of secs. 13, 18, 19 and 24, with
brass cap, marked

T 21 N in N. half,

R 21 W S 13 in NW.,

R 20 W S 18 in NE.,

S 19 in SE. and

S 24 in SW. quadrant; and

1915 in S. rim;

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

Land, roughly rolling.

Soil, sandy and stony; 4th. rate.

No timber.

Undergrowth, cactus, catclaw and greasewood.

North, bet. secs. 13 and 18, over roughly rolling land.

Across broad wash.

2.20 Leave wash; bank bears E. and W. Asc. S. slope.

4.92 Rocky spur slopes W.

17.90 Center of wash, 80 lks. wide, course S.80°W.

Thence along general SW. slope.

31.25 Spur slopes SW.

33.30 Wash, 3 lks. wide, course W.

38.40 Spur from E.; slopes to NW.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ in N.,

S 13 in W., and

S 18 in E. half; and

1915 in S. rim;

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

Cor. is on NE. slope of spur.

43.40 Wash, 30 lks. wide, course N.80°W.

50.47 Wash, 20 lks. wide, course W.

58.55 Road bears NE. and SW.

59.90 Wash, 40 lks. wide, course W.

Chains

72.30 Spur slopes SW.
 74.68 Bottom of canyon, course SW. Stream, 1 lk. wide, in canyon.
 Asc. SE. slope.
 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., in a mound
 of stone, for cor. of secs. 7, 12, 13 and 18, with
 brass cap, marked
 T 21 N in N. half,
 R 21 W S 12 in NW.,
 R 20 W S 7 in NE.,
 S 18 in SE., and
 S 13 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 W. of cor. Impracticable to dig pits or set cor. in
 the ground.
 Land, roughly rolling and broken.
 Soil, sandy, stony decomposed granite; 4th. rate,
 No timber.
 Undergrowth, cactus, catclaw and greasewood.

North, bet. secs. 7 and 12. Over mountainous land.
 Asc. S. slope.

4.70 Spur from NE; slopes SW.
 9.70 Desc. steep NW. slope.
 15.00 Cross W. slope.
 22.60 Wash, 8 lks. wide, course from N. to SW. Thence asc. SE.
 slope.
 32.70 Spur slopes W. Desc. N. slope.
 38.60 Gulch, course SW. Asc. S. slope.
 39.60 Mine shaft bears E., about 4.00 chs. dist.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for ¼ sec. cor., with brass cap, marked
 ¼ in N.,
 S 12 in W., and
 S 7 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 W. of cor.

From cor. asc. steep SE. slope of mountain.

40.60 Mouth of tunnel bears E., about 3 chs.
 50.68 Top of ridge bears N.60°W. and S.60°E.
 Desc. abrupt N. slope, over broken cliffs.
 67.33 Wash, 20 lks. wide, course W.
 72.30 Wash, 20 lks. wide, course SW. Asc. S. slope.
 78.74 Spur slopes SW.; Desc. NW. slope.
 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins.
 in the ground, for cor. of secs. 1, 6, 7 and 12, with
 brass cap, marked
 T 21 N in N. half,
 R 21 W S 1 in NW.,
 R 20 W S 6 in NE.,
 S 7 in SE., and
 S 12 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 W. of cor. Cor. is on NW, slope of low spur.
 Land, mountainous.
 Soil, stony; 4th. rate.
 No timber.
 Undergrowth, cactus, catclaw and greasewood.

North, bet. secs. 1 and 6, Over mountainous land.
 Desc. 30 ft. to

5.00 Wash, 20 lks. wide, course S.80°W.
 8.50 Spur slopes W.

Chains

23.85 Spur slopes W. Desc. steep N. slope 90 ft. to
 34.40 Wash, 25 lks. wide, course SW. Asc. SW. slope 100 ft. to
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 8 ins. in the
 ground, 18 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor.,
 with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 1 in W., and
 S 6 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor. Impracticable to dig pits or set cor. far-
 ther in the ground.

46.90 From cor. asc. S. slope 100 ft. to
 Cross spur; slopes S. 30° E. Thence asc., along SE. slope
 70 ft. to

51.70 Spur slopes SW. desc. NW. slope 40 ft. to
 56.80 Thence along W. slope.
 59.60 Wash, 4 lks. wide, course SW. Thence asc. SW. slope of
 mountain 400 ft. to

78.20 Summit of ascent; on ridge, bearing N. 75° W. and S. 75° E.
 Desc. abrupt N. slope 220 ft. to

87.30 Thence desc. along NE. slope 100 ft. to
 95.82 Intersect N. bdy. of Tp. 3.98 chs. E. of the cor. of
 Tps. 21 and 22 N., Rs. 20 and 21 W., which is a 3 in.
 iron post, with brass cap, marked and witnessed as des-
 cribed by the surveyor general.
 At the point of intersection
 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
 the ground, for closing cor. of Tps. 21 N., Rs. 20 and 21
 W., with brass cap, marked
 T 22 N S 31 in N. half,
 T 21 N CC in S. half,
 S 1 R 21 W in SW., and
 S 6 R 20 W in SE. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 S. of cor. I change the old cor. to a cor. of two Tps.,
 pertaining to T. 22 N.

Land, mountainous.
 Soil, stony; 4th. rate.
 No timber.
 Undergrowth, cactus, catclaw and greasewood.

Mar. 16, 1915.
 E. O. L.

 South Boundary, T. 22 N., R. 21 W.

E. O. L.

Apr. 5, 1915.

At my camp, near the SW. cor. of sec. 3, in T. 21 N.,
 R. 21 W., in latitude $35^{\circ}14'N.$, longitude $114^{\circ}31'W.$, at
 6h 31'.7m p. m., l. m. t., I observe Polaris at western
 elongation, in accordance with instructions in the Manual,
 and mark a point in the line thus determined by a tack
 driven in a wooden stake firmly set in the ground 5.00
 chs. north of my station.

Apr. 5, 1915.

Apr. 6, 1915.

At 7h 00m a. m., l. m. t., I turn off the azimuth of
 Polaris $1^{\circ}23'.8$ to the east, and mark the meridian thus
 determined by cutting a groove in a stone firmly set in
 the ground east of the point established last night.

I transfer the meridian thus established, by carefully measured
 angles, to the reestablished cor. of Tps. 22 N., Rs. 20
 and 21 W., hereinabove described, and deflect the bearing

Chains

- of the south bdy. from said transit line.
Thence I run
West on S. bdy. of sec. 36, Over mountainous land.
Asc. NE. slope 20 ft. to
.95 Spur slopes N. Desc. NW. slope 25 ft. to
4.95 Gulch, course N.30°E. Asc. E. slope 140 ft. to
10.82 Summit of ascent, on spur sloping N.30°W. Thence desc. along
NW. slope 145 ft. to
17.10 Gulch, course N.30°W.
22.30 Spur slopes N.70°W. Desc. along SW. slope 170 ft. to
31.60 Gulch, course NW. for 2.00 chs. and thence SW. slope
on SE. slope 210 ft. to
39.85 As the point for $\frac{1}{4}$ sec. cor. falls on a rock ledge, where
it could not be permanently placed, at this station
Set an iron post, 3 ft. long, 1 in. in diam., 6 ins. in
the ground and 20 ins. in a mound of stone, for witness
cor. to $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 36 in N., and
WC in W. half; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor. Impossible to dig pits or set cor. in the
ground.
40.00 Point for $\frac{1}{4}$ sec. cor. Desc. along SW. slope.
40.34 Gulch, course from N. to SW.
65.90 Spur slopes S.60°W.
70.55 Wash, 12 lks. wide, 290 ft. below $\frac{1}{4}$ sec. cor. point;
course S.60°W. Asc. SE. slope 40 ft. to
78.00 Spur slopes S.60°W. Desc. 50 ft. to
80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins.
in the ground, for cor. of secs. 35 and 36, with brass
cap marked
T 22 N S 35 in NW., and
R 21 W S 36 in NE. quadrant; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor.
Land, mountainous.
Soil, stony; 4th rate.
No timber.
Undergrowth, cactus, catclaw and greasewood.
Apr. 6, 1915.
-
- Apr. 7, 1915.
West, on S. bdy. of Sec. 35. Over rolling, mountainous land.
Desc. NW. slope 65 ft. to
7.65 Wash, 10 lks. wide, course S.80°W. Continue on SW. slope
24.05 Low spur, slopes SW. Desc. on NW. slope.
33.50 Wash, 20 lks. wide, course S. 60°W.
40.00 Point 230 ft. below sec. cor.
Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 35 in N. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor.
Asc. SE. slope 65 ft. to
43.50 Summit of ascent, on spur, sloping SE. Thence on S. slope.
45.50 Desc. on SW. slope.
46.30 Spur slopes S.30°W. Desc. SW. slope of main spur.
65.10 Cross S. slope.
70.10 Low ridge, bears NE., and S.80°W.
76.00 Desc. NW. slope.
80.00 Point 240 ft. below spur noted at 43.50 chs.
Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins.
in the ground, for cor. of secs. 34 and 35, with brass
cap, marked

Chains

T 22 N S 34 in NW. and
 R 21 W S 35 in NE. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 N. of cor.
 Land, rolling and mountainous.
 Soil, gravelly and rocky; 4th. rate.
 No timber.
 Undergrowth, cactus, catclaw and greasewood.
 Apr. 7, 1915.
 E. O. L.

40.00 T. O. J.
 Apr. 7, 1915.
 West, on S. bdy. of sec. 34,
 deflecting bearing from transit line carried forward
 to the cor. of secs. 34 and 35, by Edward C. Lyman.
 Over rolling mountainous land, through scattering undergrowth.
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for ¼ sec. cor., with brass cap, marked
 ¼ S 34 in N. half, and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 N. of cor.
 70.00 Asc. SE. slope of red butte.
 76.50 Top of butte, 90 ft. high. Desc. W. slope, 70 ft. to
 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., in a mound
 of stone, for cor. of secs. 33 and 34, with brass cap
 marked
 T 22 N S 33 in NW. and
 R 21 W S 34 in NE. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 N. of cor. Impracticable to dig pits or set cor. in
 the ground.
 Land, rolling.
 Soil, gravelly and rocky; 4th. rate.
 No timber.
 Undergrowth, scattering greasewood.

15.00 West, on S. bdy. of sec. 33,
 over rolling mountainous land, through scattering under-
 growth.
 35.00 Wash, 1.50 chs. wide, course SW.
 40.00 Wash, 5.00 chs. wide, course W. Thence line runs down wash.
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for ¼ sec. cor., with brass cap, marked
 ¼ S 33 in N. half, and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 N. of cor. Cor. in wash.
 45.00 Leave wash.
 65.25 Wash, 1.00 ch. wide, course SW.
 80.00 In wash, course W.,
 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in
 the ground, for cor. of secs. 32 and 33, with brass cap,
 marked
 T 22 N S 32 in NW. and
 R 21 W S 33 in NE. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high,
 N. of cor.
 Land, rolling.
 Soil, gravelly and rocky; 4th. rate.
 No timber.
 Undergrowth, scattering greasewood.

10

South Boundary, T. 22 N., R. 21 W.

Chains

West, on S. bdy. of sec. 32,
over rolling land, through scattering under-
growth.
Land runs down wash, 10.00 chs. wide, course S.67 $\frac{1}{2}$ °W.
5.00 Leave wash.
27.20 Wash, 3.00 chs. wide, course SW.
37.80 Wash, 1.00 ch. wide, course SW.
40.00 In wash, 10.00 chs. wide, course S.67 $\frac{1}{2}$ °W.,,
set an iron post, 3 ft. long, 1 in. in diam., 26 ins.
in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 32 in N. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor.
72.50 Wash, 5.00 chs. wide, course SW.
80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
the ground, for cor. of secs. 31 and 32, with brass cap
marked
T 22 N S 31 in NW. and
R 21 W S 32 in NE. quadrant; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor.
Land, rolling, ~~mountainous~~.
Soil, gravelly and rocky; 4th. rate.
No timber.
Undergrowth, scattering greasewood.

West, on S. bdy. of sec. 31,
over rolling land.
10.00 Draw, 10.00 chs. wide, 12 ft. deep, course S.67 $\frac{1}{2}$ °W.
23.20 Draw, 5.00 chs. wide, course SW.; depth about 20 ft.
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins.
in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 31 in N. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
N. of cor.
61.00 Top of sand ridge, bears N. and S. Desc. W. slope.
75.45 Top of small butte bears N. Line on S. slope; desc. W. slope .
79.49 On N. slope,
Set an iron post, 3 ft. long, 3 ins. in diam., in a mound
of stone, for cor. of Ts. 21 and 22 N., R. 21 W. & frac. Ts. 21
and 22 N., R. 22 W., with brass cap, marked,
T 22 N in N. and
T 21 N in S. half;
R 22 W S 36 in NW.,
R 21 W S 31 in NE.,
S 6 in SE. and
S 1 in SW. quadrant; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high,
S. of cor. Impracticable to dig pits or set cor. in
the ground.
Land, rolling, ~~mountainous~~.
Soil, sandy; 4th. rate.
No timber.

Apr. 7, 1915. T.O.J.

East Boundary of Fractional T. 21 N., R. 22 W.

T.O.J.

April 8, 1915.

At the corner of Ts. 21 and 22 N., R. 21 W., and frac-
tional Ts. 21 and 22 N., R. 22 W., Ts. 21 and 22 N.,
established by me, as hereinbefore described, I orient
instrument by sighting to flag on transit line E. of cor.

Chains.	Knowing from E. bdy. of T. 21 N., R. 21 W., that closing cors. pertaining to area E. of line, will be required, I run South, on E. bdy. of frac. 1 sec. 1. over rolling land.
4.25	Draw, 2.00 chs. wide, 12 ft. deep, course W.
7.50	Wash, 5.00 chs. wide, course S. $67\frac{1}{2}^{\circ}$ W.
19.60	Ravine, 3.00 chs. wide, 40 ft. deep, course W.
31.80	Draw, 3.00 chs. wide, course NW; depth about 20 ft.
40.00	Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ S 1 in W. half, and 1915 in S. rim; And raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
55.00	Wash, 10.00 chs. wide, course W.
65.90	Top of ridge bears E. and W. Desc. S. slope.
71.64	Road to Gold Mill bears E. and W.
75.00	Wash, 7.00 chs. wide, course W.
80.00	Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of frac. sec. 1 and 12, with brass cap marked T 21 N S 1 in NW. and R 22 W S 12 in SW. quadrant; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Land, rolling. Soil, gravelly and rocky; 4th rate. No timber.

	South, on E. bdy. of frac. 1 sec. 12. Asc. N. slope, over mountainous land.
6.25	Ravine, 5.00 chs. wide, course W.; depth, 75 ft.
19.40	Bottom of canyon, course W.
33.90	Bottom of canyon, course W.
40.00	Set an iron post, 3 ft. long, 1 in. in diam., in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ S 12 in W. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground.
44.80	Canyon, 5.00 chs. wide, 75 ft. deep, course W.
45.80	Desc. S. slope of earth bank.
67.00	Wash, 25 lks. wide, course W.
79.80	Road bears NW. and SE.
80.00	Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of frac. sec. 12 and 13, with brass cap, marked T 21 N S 12 in NW. and S 13 R 22 W in SW. quadrant; and 1915 in S. rim; dig pits 24x24x12 ins. in each sec. NW. and SW. of post, 60 ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor. Land, mountainous. Soil, rocky, gravelly and sandy; 4th. rate. No timber.

	South, on E. bdy. of frac. sec. 13. Over mountainous land.
18.00	Asc. N. slope of low sand ridge, 110 ft. to Top of ridge, bears E. and W. Desc. S. slope.
33.35	Road bears NE. and SW.
38.40	Wash, 4.00 chs. wide, course W.
40.00	Point 160 ft. below ridge noted at 18.00 chs. In wash, Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

Chains

$\frac{1}{4}$ S 13 in W. half, and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 From cor. asc. N. slope of sand ridge 125 ft. to
 44.50 Top of ridgebears E. and W. Desc. S. slope 150 ft. to
 59.20 Road bears NW. and SE. Enter river bottom.
 65.00 Enter dense undergrowth.
 68.60 Left bank of Colorado River, brs. N. $34\frac{1}{2}^{\circ}$ W. and S. 24° E.
 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
 the ground, for meander cor. of fracl. secs. 13 and 18,
 with brass cap, marked M C S of center,
 T 21 N R 22 W S 13 in NW., and
 R 21 W S 18 in NE. sector,
 1915 in S. rim;
 dig a pit, 36x36x12 ins., 8 ft. N. of cor., and raise
 a mound of earth, 4 ft. base, 2 ft. high, N. of cor.
 Land, mountainous, in N. 59.00 chs., and level in S. part.
 Soil, sand; 4th. rate.
 No timber.
 Undergrowth, willow, arrow-weed and mesquite.
 Apr. 8, 1915.
 T. O. J.

 South Boundary of Fractional T. 22 N., R. 22 W.

T. O. J.
 Apr. 12, 1915. At the cor. of T. 21 and 22 N., R. 21 W.,
 and fractional T. 21 and 22 N., R. 22 W.,
 established by me, as hereinbefore described, I orient
 instrument by sighting to flag on transit line E. of
 cor., and run
 West, bet. frac. secs. 1 and 36.
 Along N. slope of low ridge, over mountainous land.
 2.40 Draw, 5.00 chs. wide, 20 ft. deep, course SW.
 Thence along S. slope of low ridge.
 17.20 Ravine, 5.00 chs. wide, 70 ft. deep, course SW.
 22.50 Ravine, 2.00 chs. wide, course SW.
 29.85 Ravine, 2.50 chs. wide, course SW.; depth 50 ft.
 36.70 Ravine, 100 ft. deep, 5.00 chs. wide, course S. $22\frac{1}{2}^{\circ}$ W.
 40.00 On S. slope of low ridge,
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 36 in N. and
 S 1 in S. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 N. of cor.
 50.00 Enter river bottom; bears N. and S.
 55.00 Enter dense undergrowth; bears N. and S.
 61.54 Left bank of Colorado River, brs. N. $23\frac{1}{2}^{\circ}$ W. and S. 33° E.
 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
 the ground, for meander cor. of fracl. secs. 1 and 36,
 with brass cap, marked
 T 22 N in N.,
 MC in W.,
 T 21 N in S., and
 R 22 W in E. half; and
 S 36 in NE., and
 S 1 in SE. sector; and
 1915 in S. rim;
 dig a pit, 36x36x12 ins., 8 ft. E. of cor., and raise
 a mound of earth, 4 ft. base, 2 ft. high, E. of cor.
 Land, mountainous for E. 50.00 chs. and level for W. part.
 Soil, sandy; 4th. rate, in mountainous part and 3rd. rate
 in river bottom.
 No timber.
 Undergrowth, willow, mesquite and arrow-weed. Apr. 12, 1915. T. O. J.

East Boundary of Fractional T. 22 N., R. 22 W.

Chains

T. O. J.
 Apr. 13, 1915.
 At my camp near the SE. cor. of sec. 1, in frac. Tp. 21 N., R. 22 W., in latitude 35°14'N., longitude 114°34'15" W., at 6h 00.2m p. m., l.m.t., I observe Polaris at western elongation, in accordance with instructions in the Manual, and mark a point in the line thus determined by a tack driven in a wooden stake firmly set in the ground 5.00 chs. N. of my station.

Apr. 13, 1915.

Apr. 14, 1915.
 At 7h 00m a. m., l. m. t., I turn off the azimuth of Polaris 1°23.9' to the east, and mark the meridian thus determined by cutting a groove in a stone firmly set in the ground east of the point established last night.

The magnetic bearing of the true meridian, at 7h 10m a.m., is N.15°15'W.; the angle thus determined gives the mag. decl. 15°15' E.

I transfer the meridian determined, as above described, by carefully measured angles, to the cor. of Ts. 21 and 22 N., R. 21 W., and fractional Ts. 21 and 22 N., R. 22 W., established by me as hereinbefore described, at which point I note the bearings of flags on my transit lines E. W. and S, which bear East, West, and South respectively.
 Thence I project line by careful fore and back sights,

17.60
 23.20
 26.80
 34.50
 40.00

North, bet. sec. 36, and frac. sec. 31.
 over mountainous land, over broken SE. slope.
 Line runs along S. slope of low hill.
 Top of ridge 85 ft. above the Tp. cor; bears N. and S.
 Desc. N. slope of ridge 100 ft. to
 Wash, 5.00 chs. wide, course W. Asc. S. slope 45 ft. to
 On S. slope of sandy ridge,
 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 36 in W. and
 S 31 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.
 From cor. asc. 50 ft. to
 42.70 Top of sandy ridge; bears E. and W.. Desc. N. slope 80 ft. to
 47.50 Bottom of ravine, 5.00 chs. wide, course W. Asc. 100 ft. to
 50.00 Thence over broken NW. slope.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 30 and 31, and frac. secs. 25 and 36, with brass cap, marked
 T 22 N in N. half,
 R 22 W S 25 in NW.,
 R 21 W S 30 in NE.,
 S 31 in SE. and
 S 36 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.
 Land, mountainous.
 Soil, rocky and gravelly; 4th. rate.
 No timber.

North, bet. sec. 30, and frac. sec. 25.
 Over mountainous land, descending N. slope.
 4.00 Bottom of canyon 5.00 chs. wide, 75 ft. deep, course S. 67 $\frac{1}{2}$ ° W.
 Asc. S. slope.
 19.50 Line runs over broken E. slope.
 25.40 Ravine, 2.50 chs. wide, course W.; depth, 30 ft.

Chains

33.80 Bottom of canyon, course W. Asc. along S. slope 50 ft. to
 37.10 Summit of ascent.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 25 in W. and
 S 30 in E. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 50.00 Wash, 10.00 chs. wide, course W.
 68.75 Wash, 3.00 chs. wide, course W.
 74.40 Ravine, 3.00 chs. wide, 20 ft. deep, course SW.
 80.00 On N. slope of low ridge,
 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the
 ground, for cor. of secs. 19, 24, and 30, and frac. sec.
 25, with brass cap, marked
 T 22 N in N. half,
 R 22 W S 24 in NW.,
 R 21 W S 19 in NE.,
 S 30 in SE., and
 S 25 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 Land, mountainous.
 Soil, rocky and gravelly; 4th. rate.
 No timber.

Apr. 14, 1915.

 Apr. 15, 1915.

North, bet. secs. 19 and 24,
 Over mountainous land.
 11.20 Draw, 3.50 chs. wide, 15 ft. deep, (50 ft. below sec. cor.)
 course S. $67\frac{1}{2}^{\circ}$ W.
 20.00 Asc. S. slope of malpais ridge.
 25.00 Top of ridge 140 ft. above bottom of draw noted at 11.20
 chs.; bears E. and W. Desc. N. slope 70 ft. to
 32.60 Draw, 5.00 chs. wide, 20 ft. deep, course NW.
 40.00 On steep S. slope of ridge; Impossible to set cor.
 40.25 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for witness cor. to $\frac{1}{4}$ sec. cor., with
 brass cap, marked
 $\frac{1}{4}$ in N.,
 S 24 in W.,
 S 19 in E., and
 WC in S. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 45.00 Bottom of canyon, 5.00 chs. wide, 80 ft. deep, course W.
 51.80 Ravine, 3.00 chs. wide, 25 ft. deep, course S. $22\frac{1}{2}^{\circ}$ W.
 59.00 Ravine, 2.00 chs. wide, 30 ft. deep, course SW.
 78.05 Ravine, 5.00 chs. wide, 35 ft. deep, course S. $67\frac{1}{2}^{\circ}$ W.
 80.00 On steep south slope of rocky ridge
 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
 the ground, for cor. of secs. 13, 18, 19 and 24, with
 brass cap, marked
 T 22 N in N. half,
 R 22 W S 13 in NW.,
 R 21 W S 18 in NE.,
 S 19 in SE., and
 S 24 in SW. quadrant; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 Land, mountainous.
 Soil, rocky and gravelly; 4th. rate.
 No timber.

Apr. 15, 1915.

Chains	
	Apr. 19, 1915. North bet. secs. 13 and 18, over mountainous land.
10.00	Wash, 10.00 chs. wide, course SW.
20.00	Asc. S. slope of malpais ridge.
26.90	Top of ridge bears E. and W. Desc. along NE. slope.
34.50	Draw, 5.00 chs. wide; 20 ft. deep; course W.
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., With brass cap marked $\frac{1}{4}$ in N., S 13 in W., and S 18 in E. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
47.50	Ravine, 5.00 chs. wide, 40 ft. deep, course W.
73.00	Wash, 6.00 chs. wide, course SW. Asc. S. slope of sand ridge 100 ft. and then along W. slope to
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 7, 12, 13 and 18, with brass cap marked T 22 N in N. half, R 22 W S 12 in NW., R 21 W S 7 in NE., S 18 in SE., and S 13 in SW. quadrant; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Land, mountainous. Soil, rocky, gravelly and sandy; 4th. rate. No timber.

	North, bet. secs. 7 and 12. Over mountainous land; ascend along broken S. slope 75 ft. to
3.00	Top of ridge; bears E. and W. Desc. N. slope 100 ft. to
10.00	Head of gulch, course W. Asc. S. slope of malpais ridge 150 ft. to
25.80	Top of ridge; desc. over broken N. slope 240 ft. to
40.00	Point for $\frac{1}{4}$ sec. cor. falls in center of canyon; course S. $67\frac{1}{2}^{\circ}$ W.; where it would be liable to destruction by floods; therefore at
39.50	Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for witness cor. to $\frac{1}{4}$ sec. cor., with brass cap, marked WC $\frac{1}{4}$ in N., S 12 in W., and S 7 in E. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
40.00	Bottom of canyon, previously described. Asc. S. slope of rocky ridge 295 ft. to
53.90	Top of rocky plateau; bears E. and W.
63.20	N. edge of plateau; bears E. and W. Desc. N. slope 220 ft. to
72.75	Wash, 5.00 chs. wide, course W. Asc. 25 ft. to
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 6, 7 and 12, with brass cap, marked T 22 N. in N. half, R 22 W S 1 in NW., R 21 W S 6 in NE., S 7 in SE., and S 12 in SW. quadrant; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

Chains

Land, mountainous.
Soil, rocky; 4th. rate.
No timber.

Apr. 19, 1915.

Apr. 20, 1915.

North, bet. secs. 1 and 6.
Over mountainous land.

- 5.00 Draw, 5.00 chs. wide, course SW.; depth 20 ft.
Asc. S. slope of low ridge 60 ft. to
- 10.60 Top of ridge; bears E. and W. Desc. N. slope 50 ft. to
- 22.25 Box canyon, vertical walls, 2.00 chs. wide, 130 ft. deep;
course W.
- 29.00 Box canyon, vertical walls, 3.50 chs. wide, 100 ft. deep,
course SW; Asc. S. slope of ridge 150 ft. to
- 40.00 On rocky N. slope of ridge
Set an iron post, 3 ft. long, 1 in. diam., 24 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
S 1 in W., and
S 6 in E. half; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.
- 43.00 Ravine, 4.00 chs. wide, 30 ft. deep, course NW.
- 46.70 Ravine, 3.00 chs. wide, 40 ft. deep, course SW. Asc. 75-
ft. to
- 57.00 Top of ridge; bears E. and W. Desc. N. slope.
- 61.25 Ravine, 5.00 chs. wide, 35 ft. deep, course SW.
- 68.75 Ravine, 2.00 chs. wide, 75 ft. deep, course SW.
- 78.70 Box ravine with perpendicular walls 30 ft. high, 40 lks.
wide, course SW.
- 80.00 Set an iron post, 3 ft. long, 3 ins. diam., in a mound of
stone, for cor. of Ts. 22 & 23 N., R. 21 W., and frac. Ts. 22 & 23 N.,
R. 22 W., with brass cap, marked
T 23 N in N., and
T 22 N in S. half;
R 22 W S 36 in NW.,
R 21 W S 31 in NE.,
S 6 in SE., and
S 1 in SW. quadrant; and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
S. of cor. Impracticable to dig pits or set cor. in
the ground.
Cor. is on right bank of canyon.
Land, mountainous.
Soil, rocky; 4th. rate.
No timber.

Apr. 20, 1915.
T. O. J.

North Boundary of Fractional T. 22 N., R. 22 W.

T. O. J.

Apr. 20, 1915. At the cor. of Ts. 22 and 23 N., R. 21 W., and
at frac. Ts. 22 & 23 N., R. 22 W., established by me as hereinbefore described, I orient instrument
by sighting to flags on my line S. of cor., and run
West, bet. secs. 1 and 36,
over mountainous land, ascending E. slope, out of ravine.
5.00 Line runs along broken S. slope.
12.60 Ravine, 2.00 chs. wide, 20 ft. deep; course S. $67\frac{1}{2}$ ° W.
Asc. SE. slope of ridge.

Chains.

- 18.40 Top of ridge bears NE. and SW. Desc. W. slope.
 24.00 Ravine, 3.50 chs. wide, course SW.; depth, 50 ft.
 34.00 Top of ridge bears N. and S. . Desc. W. slope.
 40.00 On steep W. slope of low ridge
 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the
 ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 36 in N., and
 S 1 in S. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 N. of cor.
 43.30 Ravine, 5.00 chs. wide, 80 ft. deep, course S. $67\frac{1}{2}^{\circ}$ W.
 47.70 Line runs along broken S. slope.
 59.80 Top of ridge bears N. and S. desc. W. slope, 140 ft. to
 74.10 Wash, 5.00 chs. wide, course S. $67\frac{1}{2}^{\circ}$ W.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in
 the ground, for cor. of secs. 1 and 36, and frac. secs. 2
 and 35, with brass cap, marked
 T 23 N S 35 in NW.,
 R 22 W S 36 in NE.,
 S 1 in SE., and
 S 2 in SW. quadrant;
 T 22 N in S. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 W. of cor.
 Land, mountainous.
 Soil, rocky and gravelly; 4th. rate.
 No timber.

- West, bet. frac. secs. 2 and 35.
 over rolling mountainous land.
 5.00 Draw, 6.00 chs. wide, 25 ft. deep, course S. $22\frac{1}{2}^{\circ}$ W.
 19.75 Draw, 4.00 chs. wide, 20 ft. deep, course SW.
 30.00 Enter dense undergrowth, bears N. and S.
 33.23 To Left bank of Colorado River; brs. N. and S. $5\frac{1}{4}^{\circ}$ E.
 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the
 ground, for meander cor. of frac. secs. 2 and 35, with
 brass cap, marked
 T 23 N in N.,
 T 22 N in S.,
 R 22 W in E., and
 MC in W. half;
 S 35 in NE. and
 S 2 in SE. sector; and
 1915 in S. rim;
 dig a pit, 36x36x12 ins., 8 ft. E. of cor., and raise a
 mound of earth, 4 ft. base, 2 ft. high, E. of cor.
 Land, rolling mountainous.
 Soil, gravelly and sandy; 4th. rate.
 Undergrowth, mesquite.

Apr. 20, 1915.
 T. O. J.

North Boundary of T. 22 N., R. 21 W.

E. O. L.

Apr. 21, 1915.

I begin at the cor. of Tps. 22 and 23 N., Rs. 20 and 21 W.,
 which is a 3 in. iron post, with brass cap, set, marked
 and witnessed as described by the surveyor general.
 I orient instrument by sighting to flag on transit line
 projected by carefully measured angles from the meridian

Chains

determined by observation on Polaris at western elong., in the SW. cor. of sec. 3, T. 21 N., R. 21 W., as hereinbefore described, and run West, on a random line, along the N. bdy. of T. 22 N., R. 21 W., setting temp. $\frac{1}{4}$ sec. and sec. cors. at intervals of 40.00 chs.; and at 479.08 chs. intersect the range line 180 lks. N. of cor. of Tps. 22 & 23 N., R. 21 W., & frac. Tps. 22 & 23 N., R. 22 W., hereinbefore described, I return to the cor. of Tps. 22 and 23 N., Rs. 20 and 21 W., and thence I run S. $89^{\circ}47'W.$, on a true line, bet. secs. 1 and 36. Over roughly rolling land, through scattering undergrowth. Wash, 2.00 chs. wide, course NW. 5.00 chs., and thence W. Cross small ravine near head, course N. $70^{\circ}W.$ Asc. NE. slope. On NE. slope of low ridge set an iron post, 3 ft. long, 1 in. in diam., 15 ins. in the ground and 11 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 36 in N. half,
 S 1 in S. half; and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, N. of cor. Impracticable to dig pits or set cor. farther in the ground.

3.25
 29.90
 40.00

48.25 Top of ascent; on ridge bearing N. $20^{\circ}W.$ and S. $20^{\circ}E.$ Desc. SW. slope, 195 ft. to

74.80 Middle of gulch from S. $70^{\circ}E.$ to S. $70^{\circ}W.$ Asc. over edge of bank to

76.50 Desc. W. slope to

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 2, 35 and 36, with brass cap, marked
 T 23 N S 35 in NW.,
 R 21 W S 36 in NE.,
 S 1 in SE., and
 S 2 in SW. quadrant;
 T 22 N. in S. half, and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

Land, roughly rolling spurs and ridges, general drainage N. $70^{\circ}W.$
 Soil, rocky, covered with malpais boulders; 4th rate.
 No timber.
 Undergrowth, cactus and greasewood.

Apr. 21, 1915.

Apr. 22, 1915.

S. $89^{\circ}47'W.$, bet. secs. 2 and 35; over roughly rolling ridges. From cor. line runs along the N. side of gulch, course W.

23.40 Center of gulch from S. $70^{\circ}E.$ to S. $70^{\circ}W.$; at N. edge of bend.

35.85 Same gulch, course NW.

40.00 In small gulch, course S. $65^{\circ}W.$, Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 35 in N. half,
 S 2 in S. half, and
 1915 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

48.65 Same gulch, course N. $80^{\circ}W.$

51.45 Same gulch, course S. $70^{\circ}W.$; Asc. SE. slope.

62.95 Low ridge bears N. $80^{\circ}E.$ and S. $80^{\circ}W.$

71.95 Point 2.00 chs. N. of the head of small ravine, course W.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 2, 3, 34 and 35, with brass cap, marked

Chains		
	<p>T 23 N S 34 in NW., R 21 W S 35 in NE., S 2 in SE., and S 3 in SW. quadrant; T 22 N in S. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Land, heavily rolling ridges. Soil, stony, covered with malpais boulders; 4th. rate. No timber. Undergrowth, cactus and greasewood.</p>	
40.00	<p>S.89°47'W., bet. secs. 3 and 34. Desc. along SW. slope. Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked ¼ S 34 in N. half, S 3 in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Cor is on top of small spur sloping W. bet. small ravine from N. of line to gulch 5.00 chs. S. of line.</p>	
48.20	<p>Desc. along point of spur to small ravine, course S.80°W.</p>	
62.90	<p>Gulch from S.70°E to S.65°W. Asc. along SE. slope.</p>	
70.90	<p>On top of flat ridge, bears NE. and SW.</p>	
80.00	<p>Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 3, 4, 33 and 34, with brass cap, marked T 23 N S 33 in NW., R 21 W S 34 in NE., S 3 in SE., and S 4 in SW. quadrant; T 22 N in S. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Land, roughly rolling. Soil, 4th. rate. No timber. Undergrowth, cactus and greasewood.</p>	
13.65	<p>S.89°47'W., bet. secs. 4 and 33. Desc. along NW. slope of low spur.</p>	
30.00	<p>Small ravine, course S.80°W. Thence along S. slope.</p>	
39.50	<p>Desc. SW. slope.</p>	
40.00	<p>Gulch, course N.65°W. Asc. NE. slope. Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked ¼ S 33 in N. half, S 4 in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.</p>	
48.90	<p>Top of ridge; bears S.70°E. and N.70°W. Desc. 90 ft. on S. slope.</p>	
67.90	<p>Desc. 110 ft. on SW. slope to</p>	
80.00	<p>Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, with brass cap, marked T 23 N S 32 in NW., R 21 W S 33 in NE., S 4 in SE., and S 5 in SW. quadrant; T 22 N in S. half; and 1915 in S. rim;</p>	

Chains

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.
Land, roughly rolling ridges; main drainage N. 70° W.
Soil, stony, covered with malpais boulders; 4th. rate.
No timber.
Undergrowth, cactus and greasewood.

S. $89^\circ 47' W.$, bet. secs. 5 and 32.

Desc. SW. slope to

- 2.50 Ravine, course NW. for 1.50 chs. Thence SW.
6.50 Same ravine, course NW. from NE. Line runs along S. side of same.
21.55 Same ravine, course S. $70^\circ W.$; asc. SE. slope.
30.00 Line runs along S. side of spur, near top.
40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 32 in N. half,
S 5 in S. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
N. of cor.

Apr. 22, 1915.
E. O. L.

T. O. J.

Apr. 24, 1915.

- I orient instrument at the $\frac{1}{4}$ sec. cor. above described
by sighting to flag on line E. of same, and run
S. $89^\circ 47' W.$, bet. secs. 5 and 32, continuing measurement.
42.20 line runs along top of low spur, projecting W.
51.50 Desc. along N. slope.
63.50 Bottom of ravine, 5.00 chs. wide, course N. $67\frac{1}{2}^\circ W.$; depth
40 ft.. Another ravine from NE. enters first one at
this point.
70.50 Same ravine, course S. $67\frac{1}{2}^\circ W.$. Line runs along S. slope
from this point.
80.00 On S. slope of low ridge,
Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in
the ground, for cor. of secs. 5, 6, 31 and 32, with
brass cap, marked
T 23 N S 31 in NW.,
R 21 W S 32 in NE.,
S 5 in SE., and
S 6 in SW. quadrant;
T 22 N in S. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.
Land, mountainous.
Soil, rocky; 4th. rate.
No timber.

S. $89^\circ 47' W.$, bet. secs. 6 and 31.

Asc. along S. slope of low ridge.

- 5.50 Top of spur; bears NE. and SW. Desc. W. slope.
8.50 Bottom of ravine, 5.00 chs. wide, 75 ft. deep, course SW.
Asc. E. slope.
15.00 Top of ridge; bears NE. and SW.; desc. along N. slope.
25.00 Ravine, 7.00 chs. wide, course SW. Asc. along S. slope.
40.00 On E. slope of low spur projecting to S.,
Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 31 in N. half,
S 6 in S. half, and
1915 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
N. of cor.

North Boundary, T. 22 N., R. 21 W.

Chains

45.50 E. edge of mesa. thence over top of same.
 52.80 Desc. along N. slope of mesa, 215 ft. to
 78.00 Bottom of canyon, course W.. Thence down canyon to
 79.08 The cor. of Tps. 22 & 23 N., R. 21 W., & Tacs. 22 and 23 N., R.
 22 W., hereinbefore described.
 Land, mountainous.
 Soil, rocky; 4th. rate.
 No timber.

Apr. 24, 1915.
T. O. J.

West Boundary, T. 23 N., R. 20 W.

T. O. J.
May 6, 1915.

At my camp near the SW. cor. of sec. 4, in T. 22 N., R. 20 W., in latitude 35°19' N., longitude 114°24'20" W., at 4h 38.3m a. m., l. m. t., I observe Polaris at eastern elongation, in accordance with instructions in the Manual, and mark a point in the line thus determined by a tack driven in a wooden stake firmly set in the ground 5.00 chs. N. of my station.

At 7h 00m a.m., l.m.t., I turn off the azimuth of Polaris 1°24' to the west, and mark the meridian thus determined by cutting a small groove in a stone firmly set in the ground W. of the point previously established.

The magnetic bearing of the true meridian is N.15°15'W.
 The angle thus determined gives the mag. decl. 15°15' E.

I transfer the meridian established as above described, by carefully measured angles, to the cor. of Tps. 22 and 23 N., Rs. 20 and 21 W., hereinbefore described, and at this point, as a check on both lines, I observe bearing of flag on random line W. of cor., run by Edward O. Lyman. Bearing of flag is West: hence I conclude that orientation of instrument is satisfactory, and proceed to project transit line, by means of careful fore and back sights, as follows:

North, bet. secs. 31 and 36.

Asc. over rocky S. slope 100 ft. to
 8.50 Top of ridge bears E. and W. Desc. N. slope 45 ft. to
 14.80 Draw, course W. Asc. S. slope of low ridge 45 ft. to
 19.80 Top of ridge bears E. and W. Desc. N. slope 60 ft. to
 26.40 Trail bears N.67½°W. and E.

Thence line runs over rolling land.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked
 ¼ in N.,
 S 31 in E., and
 S 36 in W. half; and
 1915 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.

64.00 Wash, 4.00 chs. wide, course S.67½°W.
 70.00 Top of low ridge; bears E. and W.; desc. N. slope.
 75.00 Ravine, 10.00 chs. wide, course SW.; depth, 70 ft.
 80.00 On E. slope of low spur projecting to S.,
 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 25, 30, 31 and 36, with brass cap, marked
 T 23 N in N. half,
 R 21 W S 25 in NW.,
 R 20 W S 30 in NE.,
 S 31 in SE., and
 S 36 in SW. quadrant; and
 1915 in S. rim;

22

West Boundary, T. 23 N., R. 20 W.

Chains

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

Land, mountainous and rolling mountainous.

Soil, rocky; 4th. rate.

No timber.

May 6, 1915.

May 10, 1915.

North, bet. secs. 25 and 30.

Over mountainous land. Asc. along E. slope 120 ft.
to

12.10 Top of spur; bears NE. and SW. Thence along the top.

25.00 E. point of spur; bears E. and SW. Line runs along broken
E. slope.

30.00 Top of spur 60 ft. above spur crossed at 12.10 chs.

Desc. 50 ft., along N. slope, to

35.75 Head of draw, course NW. Line runs along W. slope.

40.00 On W. slope.

Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in
the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ in N.,

S 30 in E., and

S 25 in W. half; and

1915 in S. rim;

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

53.05 Bottom of canyon, course S. $67\frac{1}{2}^{\circ}$ W. Asc. S. slope.

62.30 Ravine, 5.00 chs. wide, 75 ft. deep, course SW.

74.25 Top of spur 220 ft. above $\frac{1}{4}$ sec. cor.; bears W.

Thence along broken W. slope to

80.00 On steep, broken W. slope

Set an iron post, 3 ft. long, 3 ins. in diam., in a mound
of stone, for the cor. of secs. 19, 24, 25 and 30,
with brass cap, marked

T 23 N in N. half,

R 21 W S 24 in NW.,

R 20 W S 19 in NE.,

S 30 in SE., and

S 25 in SW. quadrant; and

1915 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. in
the ground.

Land, mountainous.

Soil, rocky; 4th. rate.

No timber.

North, bet. secs. 19 and 24.

Over mountainous land. Asc. along broken W. slope 100 ft.
to

5.00 Top of ridge bears N. $22\frac{1}{2}^{\circ}$ W. and S. $22\frac{1}{2}^{\circ}$ E. Desc. along
E. slope, over slide rock, 120 ft. to

14.50 Bottom of canyon, course SE.

19.50 Asc. along W. slope.

34.05 Same canyon, course SW. Asc. S. slope.

40.00 On rocky spur sloping S., 180 ft. above bottom of canyon
crossed at 14.50 chs.,

Set an iron post, 3 ft. long, 1 in. diam., in a mound of
stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ in N.,

S 24 in W. and

S 19 in E. half; and

1915 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. in
the ground.

Chains	
41.70	Draw, 3.00 chs. wide, 20 ft. deep, course E. Asc. along E. slope.
46.60	Same canyon crossed at 34.05 chs., course SE. Asc. S. slope.
53.50	Continue ascent along W. slope.
63.00	Draw, course SW. Asc. S. slope.
66.00	Thence along W. slope.
80.00	On W. slope, 270 ft. above $\frac{1}{4}$ sec. cor.,
	Set an iron post, 3 ft. long, 3 ins. diam., in a mound of stone, for cor. of secs. 13, 18, 19 and 24, with brass cap, marked
	<p style="text-align: center;">T 23 N in N. half, R 21 W S 13 in NW., R 20 W S 18 in NE., S 19 in SE., and S 24 in SW. quadrant; and 1915 in S. rim;</p>
	and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground.
	Land, mountainous.
	Soil, rocky; 4th. rate.
	No timber.

	North, bet. secs. 13 and 18.
	Over mountainous land; along W. slope.
10.00	Draw, course W. Asc. broken S. slope, over slide rock, 335 ft. to
24.35	Top of rocky ridge bears N. $67\frac{1}{2}^{\circ}$ E. and S. $67\frac{1}{2}^{\circ}$ W. Desc. broken W. slope 100 ft. to
32.00	Continue descent along N. slope, 200 ft. to
36.60	Bottom of canyon, course N. $67\frac{1}{2}^{\circ}$ W. Asc. along W. slope.
40.00	On W. slope
	Set an iron post, 3 ft. long, 1 in. diam., in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
	<p style="text-align: center;">$\frac{1}{4}$ in N., S 18 in E., and S 13 in W. half; and 1915 in S. rim;</p>
	and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground.
45.00	Asc. S. slope over broken cliffs.
51.15	Top of rocky ridge 280 ft. above $\frac{1}{4}$ sec. cor.; bears N. $22\frac{1}{2}^{\circ}$ W. and S. $22\frac{1}{2}^{\circ}$ E. Desc. along E. slope over slide rock.
55.90	Top of cliff 100 ft. high, bears NW. and SE.
58.80	Foot of cliff, 50 ft. high, bears NW. and SE., at a point 20 lks. W. of line.
80.00	On E. slope, on top of red cliff 25 ft. high, bearing E. and W.; 320 ft. below ridge crossed at 51.15 chs.,
	Set an iron post, 3 ft. long, 3 ins. diam., in a mound of stone, for cor. of secs. 7, 12, 13 and 18, with brass cap, marked
	<p style="text-align: center;">T 23 N in N. half, R 21 W S 12 in NW., R 20 W S 7 in NE., S 18 in SE., and S 13 in SW. quadrant; and 1915 in S. rim;</p>
	and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground.
	Land, mountainous.
	Soil, rocky; 4th. rate.
	No timber.

Chains

	North, bet. secs. 7 and 12. Over mountainous land; desc. along W. slope.
19.50	Mouth of draw, course W. Line runs over point of small butte.
31.30	Wash, 8 lks. wide, course N. $67\frac{1}{2}^{\circ}$ W.
40.00	On N. slope, 300 ft. below sec. cor., Set an iron post, 3 ft. long, 1 in. diam., in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ in N., S 7 in E., and S 12 in W. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground. White point of high butte bears N $56\frac{1}{2}^{\circ}$ W.
50.00	Desc. N. slope 45 ft. to
60.65	Asc. gradually on S. slope.
71.60	Wash, 1.70 chs. wide, course W. Asc. S. slope 60 ft. to
74.82	Low spur slopes SW. Desc. N. slope 45 ft. to Enter broad wash, course SW. Bank bears NE. and SW. Asc. 12 ft. to
80.00	In wash Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 6, 7 and 12, with brass cap, marked T 23 N in N. half, R 21 W S 1 in NW., R 20 W S 6 in NE., S 7 in SE., and S 12 in SW. quadrant; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor., Land, mountainous. Soil, gravelly and stony; 4th. rate. No timber. Undergrowth, scattering greasewood, cactus, catclaw, yucca and scrub juniper.
	May 10, 1915.

	May 14, 1915.
	North, bet. secs. 1 and 6. Across wash.
2.50	Dim old road, from Chloride to Colorado; bears NE. and SW.
5.00	Leave wash. Right bank bears NE. and SW. Asc. SW. slope 75 ft. to
10.30	Top of low point of spur; slopes W. 3.00 chs. to broad wash: thence over NW. slope. Desc. 25 ft. to
21.10	Wash, 30 lks. wide, course SW. Asc. point of spur sloping S.
26.32	Along SE. point of spur.
40.00	70 ft. above wash noted at 21.10 chs., Set an iron post, 3 ft. long, 1 in. diam., 15 ins. in the ground, 11 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ in N., S 6 in E., and S 1 in W. half; and 1915 in S. rim; and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
44.95	From cor. asc. SE. slope 45 ft. to
56.50	Desc. along E. slope 30 ft. to Wash, 40 lks. wide, course from NW. to S. 20° E.; asc. S. slope.
79.00	Top of spur 290 ft. above wash; slopes SE.
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of Tps. 23 and 24 N., Rs. 20 and 21 W., with brass cap, marked

Chains

T 24 N in N. half,
T 23 N in S. half,
R 21 W S 36 in NW.,
R 20 W S 31 in NE.,
S 6 in SE., and
S 1 in SW. quadrant; and
1915 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
S. of cor., from which

White point of butte, previously described, bears S. 84 1/2° W.

Land, mountainous.

Soil, gravelly and rocky; 4th. rate.

No timber.

Undergrowth, greasewood, yucca, catclaw, cactus, and
scrub juniper.

May 14, 1915.

T. O. J.

North Boundary, T. 23 N., R. 20 W.

E. O. L.

May 12 and 14, 1915.

At the ^{reestablished} cor. of Tps. 23 and 24 N., R. 20 W., set by me, as described in Book "M, " , I orient my instrument by sighting to flag on transit line projected by means of carefully measured angles from the meridian determined near the SW. 1/4 of sec. 4, in T. 22 N., R. 20 W., by observation on Polaris at Eastern elongation, and run West, on a random line, along the N. bdy. of T. 23 N., R. 20 W., setting temp. 1/4 sec. and sec. cors. at intervals of 40.00 chs.; and, at 477.75 chs. intersect the range line, 12 lks. N. of the cor. of Tps. 23 and 24 N., Rs. 20 and 21 W., hereinbefore described.

The falling answers to a correction of 0° 01', or 2 lks. S. per mile, counting from the NE. cor. of the Tp.; therefore I run

N. 89° 59' E., on a true line, bet. secs. 6 and 31.

10.10 Desc., on E. slope, over mountainous land, 95 ft. to
Bottom of small ravine, course S. 10° W. Asc. W. slope.

12.70 Desc. over cliff 40 ft. high; bears N. and S.

Enter broad wash, course S. Right bank bears N. and S.

12.90 Dim wagon road, in wash, bears N. and S.

15.10 Leave wash; left bank bears N. and S.

Asc. abrupt W. slope, over broken cliffs, 200 ft. to

23.85 Top of small spur; slopes S.

28.85 Bottom of ravine, course S. 10° W. Asc. steep W. slope
225 ft. to

37.75 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in
the ground, for 1/4 sec. cor., with brass cap, marked

1/4 S 31 in N. half,
S 6 in S. half, and

1915 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
N. of cor.

55.10 From cor. continue ascent, on steep W. slope, 280 ft. to
Top of ridge; bears NW. and SE.; the divide between
the Colorado River and Sacramento Valley. Desc. NE.
slope of ridge 140 ft. to

67.60 Head of ravine, course NW. for 10.00 chs., and thence NE.
Asc. NW. slope 20 ft. to

74.80 Top of low spur sloping to NE. Desc. E. slope 40 ft. to

77.75 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in
the ground, for cor. of secs. 5, 6, 31 and 32, with
brass cap, marked

Chains

T 24 N S 31 in NW.,
 R 20 W S 32 in NE.,
 S 5 in SE., and
 S 6 in SW. quadrant;
 T 23 N in S. half, and
 1915 in S. rim;

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

Land, mountainous.

Soil, gravelly and rocky; 4th. rate.

No timber.

Undergrowth, cactus, catclaw, yucca and greasewood.

N. $89^{\circ}59'E.$, bet. secs. 5 and 32.

Desc. W. slope, over mountainous land, through scattering undergrowth.

1.40 Bottom of ravine, Course N. $25^{\circ}W.$
 Asc. W. slope.

9.20 Desc. SE. slope of ridge.

36.70 Wash, course N. $65^{\circ}E.$: Thence down gently sloping valley about 15.00 chs. wide.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ S 32 in N. half,
 S 5 in S. half, and
 1915 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 N. of cor.

52.20 Same wash, course S. $80^{\circ}E.$; width, 15 lks.

59.65 Same wash, course N. $75^{\circ}E.$; width, 15 lks.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, with brass cap, marked

T 24 N S 32 in NW.,
 R 20 W S 33 in NE.,
 S 4 in SE., and
 S 5 in SW. quadrant;
 T 23 N in S. half, and
 1915 in S. rim;

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

Land, mountainous in W. 35 chs., and in valley for E. part.

Soil, gravelly and stony; 4th. rate.

No timber.

Undergrowth, cactus, catclaw, yucca, greasewood and scrub juniper.

N. $89^{\circ}59'E.$, bet. secs. 4 and 33.

Over gently sloping plain, through scattering undergrowth.

5.00 Road from Chloride to Colorado River brs. N. $80^{\circ}W.$ & S. $80^{\circ}E.$

24.60 Wash, 10 lks. wide, course N. $35^{\circ}E.$

30.60 Same road bears N. $70^{\circ}E.$ and S. $65^{\circ}W.$

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ S 33 in N. half,
 S 4 in S. half, and
 1915 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
 N. of cor.

Desc. gradually on NE. slope.

75.00 Thence across plain, drainage N.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 3, 4, 33 and 34, with brass cap, marked

Chains	
	<p>T 24 N S 33 in NW., R 20 W S 34 in NE., S 3 in SE., and S 4 in SW. quadrant; T 23 N in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Land, gently sloping plain. Soil, gravelly; 4th. rate. No timber. Undergrowth, cactus, yucca, catclaw and greasewood.</p>

	<p>N.89°59'E., bet. secs. 3 and 34. Over gently sloping plain with north drainage, through scattering undergrowth.</p>
23.00	Wash, 15 lks. wide, course N.10°W.
40.00	Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked ¼ S 34 in N. half, S 3 in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.
65.80	Wash, 20 lks. wide, course N.20°W.
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 2, 3, 34 and 35, with brass cap, marked T 24 N S 34 in NW., R 20 W S 35 in NE., S 2 in SE., and S 3 in SW. quadrant; T 23 N in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Land, gently sloping plain. Soil, gravelly; 4th. rate. No timber. Undergrowth, cactus, catclaw, and greasewood.

	<p>N.89°59'E., bet. secs. 2 and 35. Across gently sloping plain, drainage N., through scatter- ing undergrowth.</p>
29.55	Dim old road bears N.15°W. and S.15°E.
31.55	Wash, 20 lks. wide, course N.15°W. Leave plain and asc. NW. slope 60 ft. to
40.00	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked ¼ S 35 in N. half, S 2 in S. half, and 1915 in S. rim; and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.
54.60	Continue on NW. slope, ascending 125 ft. to On spur extending NW. Low pass S. of line. Desc. E. slope 260 ft. to
69.50	Wash, 20 lks. wide, course N. Thence across plain.
80.00	Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 2, 35 and 36, with brass cap, marked T 24 N S 35 in NW., R 20 W S 36 in NE., S 1 in SE., and S 2 in SW. quadrant; T 23 N in S. half, and 1915 in S. rim;

Chains

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
W. of cor.

Land, level plain in west 31.55 chs., and east 10.70 chs.,
and roughly rolling for balance of line.

Soil, gravelly and rocky; 4th. rate.

No timber.

Undergrowth, cactus, catclaw, greasewood and yucca.

N.89°59'E., bet. secs. 1 and 36.

Asc. W. slope 50 ft. to

6.10 Spur extending N. Desc. E. slope of spur 90 ft. to

13.50 Thence over slightly sloping plain.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the
ground, for 1/4 sec. cor., with brass cap, marked

1/4 S 36 in N. half,

S 1 in S. half, and

1915 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
N. of cor.

69.50 Wash, 10 lks. wide, course N.

73.20 Wash, 12 lks. wide, course N.10°W.

80.00 The reestablished cor. of Tps. 23 and 24 N., R. 20 W.,
described in Book "M." in.

Land, roughly rolling in W. 13.50 chs., and nearly level
plain on balance of line.

Soil, stony and gravelly; 4th. rate.

No timber.

Undergrowth, cactus, catclaw, yucca and greasewood.

May 12 and 14, 1915.
E. O. L.

Chains

G. H. R.
H. P.

Surveys executed by us under Group 44 commenced Dec. 18, 1915; Guy H. Richardson, U. S. surveyor, using a Young and Sons' light mountain transit No. 8539, and Hugo Price, U. S. Transitman, using a Young and Sons' light mountain transit No. 8484.

Both instruments have Smith solar attachments and full vertical circles. The horizontal limbs are provided with two double verniers, reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs and vertical circles.

The instruments were approved, subject to satisfactory field tests, by the assistant supervisor of surveys, on Nov. 29, 1915.

All measurements made with steel tapes and clinometers.

We examine the adjustments of the instruments, and correct the level and collimation errors.

G. H. R.
H. P.

G. H. R.
Dec. 19, 1915.

At my camp, near the center of sec. 3, in T. 23 N., R. 18 W., in latitude $35^{\circ}24\frac{1}{2}'$ N., longitude $114^{\circ}11\frac{1}{2}'$ W., at 2h 30m p.m., l.m.t., I set off $35^{\circ}24\frac{1}{2}'$ on the lat. arc; $23^{\circ}23'$ S. on the decl. arc; and determine a meridian with the solar, which I mark by cutting a small groove in a stone, firmly set in the ground 5 chs. N. of my station.

Dec. 19, 1915.

Dec. 20, 1915.

At the above station, at 1h 35.4m a.m., l.m.t., I observe Polaris at western elongation, in accordance with instructions, and mark a point in the line thus determined by a tack driven in a wooden stake W. of the point determined by the solar.

At 7h 30m a.m., l.m.t., I lay off the azimuth of polaris $1^{\circ}23\frac{1}{2}'$ to the E.; the meridian thus determined coinciding with that given by the solar.

At 8h 00m a.m., l.m.t., I set off $35^{\circ}24\frac{1}{2}'$ on the lat, arc; $23^{\circ}21\frac{1}{2}'$ S. on the decl. arc; and determine a meridian with the solar, which agrees with the determination of the meridian by the polaris observation and the solar previously described.

The solar apparatus, by p.m., and a.m. observations, defines the position of the meridian in accordance with that established by the Polaris observation; I therefore conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8h 10 m a.m., l.m.t., is $N.14^{\circ}30'W.$; the angle thus determined gives the mag. decl. $14^{\circ}30' E.$

G. H. R.

H. P.

At my station, approximately 20 ft. S. of the one occupied by Guy H. Richardson, I set off latitude and declination on their respective arcs on my instrument, and test the solar apparatus simultaneously with the tests above described. The indications, by p.m. and a.m. observations, of both instruments, are identical; and I therefore con-

30

West Boundary, T. 23 N., R. 21 W.

Chains

clude that the adjustments of the instrument are satisfactory.

Dec. 20, 1915.
H. P.

H. P.

Jan. 13, 1916. At the corner of Ts. 22 and 23 N., R. 21 W. & frac. Ts. 22 and 23 N., R., 22 W., here-
inbefore described, I set off 35°20' on the lat. arc;
21°35' S. on the decl. arc; and determine a meridian
with the solar at 10h 00m. a.m., l.m.t.

Thence I run

North, bet. secs. 31 and 36,
over rolling and broken land, through scattering undergrowth.
Asc. 135 ft. to

6.50 Ridge bears NE. and SW.
27.15 Wash, 15 lks. wide, course NW.
40.00 Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the
ground and 10 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor.,
with brass cap, marked

$\frac{1}{4}$ in N.,
S 31 in E., and
S 36 in W. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

51.62 Deep wash, 40 lks. wide, course W.

69.40 Enter deep wash, course SW.

75.60 Leave same.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the
ground, for cor. of secs. 25, 30, 31 and 36, with brass
cap, marked

T 23 N in N. half,
R 22 W S 25 in NW.,
R 21 W S 30 in NE.,
S 31 in SE., and
S 36 in SW. quadrant; and
1916 in S. rim;

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

Land, rolling and broken.

Soil, rocky and sandy; 4th rate.

No timber.

Undergrowth, greasewood, catclaw and cactus.

North, bet. secs. 25 and 30,
over rolling and broken land, through scattering under-
growth.

20.70 Enter wash, course SW.

23.90 Leave same.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked

$\frac{1}{4}$ in N.,
S 25 in W., and
S 30 in E. half; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

63.45 Enter Wash, course SW.

66.95 Leave same.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 22 ins. in the
ground, for cor. of secs. 19, 24, 25 and 30, with brass
cap, marked

West Boundary, T. 23 N., R. 21 W.

Chains

T 23 N in N. half,
R 22 W S 24 in NW.,
R 21 W S 19 in NE.,
S 30 in SE., and
S 25 in SW. quadrant; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

Land, rolling and broken.
Soil, rocky, sandy loam, 4th rate.
No timber.
Undergrowth, greasewood, catclaw and cactus.

At this cor. I set off 21°34½' S. on the decl. arc; and
at apparent noon observe the sun on the meridian. The
resulting lat. is 35°21½'. Jan. 13, 1916.

Jan. 13, 1916.

10.00 North, bet. secs. 19 and 24,
40.00 over rolling and broken land, through scattering undergrowth.

Deep wash, 15 lks. wide, course W.
Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the
ground and 14 ins. in a mound of stone, for ¼ sec. cor.,
with brass cap, marked

¼ in N.,
S 19 in E., and
S 24 in W. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

42.20 Deep wash, 40 lks. wide, course W.
71.00 Deep wash, 40 lks. wide, course SW.
80.00 Set an iron post, 3 ft. long, 3 ins. diam., 10 ins. in the
ground and 14 ins. in a mound of stone, for cor. of secs.
13, 18, 19 and 24, with brass cap, marked

T 23 N in N. half,
R 22 W S 13 in NW.,
R 21 W S 18 in NE.,
S 19 in SE., and
S 24 in SW. quadrant; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

Land, rolling and broken.
Soil, rocky and sandy loam; 4th rate.
No timber.
Undergrowth, greasewood, catclaw and cactus.

16.70 North, bet. secs. 13 and 18,
40.00 over rolling and broken land, through scattering under-
growth.

Deep wash, 15 lks. wide, course W.
Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the
ground and 6 ins. in a mound of stone, for ¼ sec. cor.,
with brass cap, marked

¼ in N.,
S 13 in W., and
S 18 in E. half; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

Jan. 13, 1916.

32

West Boundary, T. 23 N., R. 21 W.

Chains

Jan. 14, 1916.

At this cor. I set off $35^{\circ}23'$ on the lat. arc; $21^{\circ}25'$ S. on the decl. arc; and at 9h 30m a.m., l.m.t., determine a meridian with the solar.

49.05 Deep wash, 30 lks. wide, course W.

59.55 Deep wash, 10 lks. wide, course W.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 16 ins. in the ground and 8 ins. in a mound of stone, for cor., of secs.

7, 12, 13 and 18, with brass cap, marked

T 23 N in N. half,

R 22 W S 12 in NW.,

R 21 W S 7 in NE.,

S 18 in SE., and

S 13 in SW. quadrant; and

1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor farther in the ground.

Land, rolling and broken.

Soil, rocky and sandy loam; 4th rate.

No timber.

- Undergrowth, greasewood and catclaw.

North, bet. secs. 7 and 12,

over rolling and broken land, through scattering undergrowth.

16.65 Deep wash, 20 lks. wide, course W.

23.14 Enter deep wash, course W.

26.90 Leave same.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ in N.,

S 7 in E., and

S 12 in W. half; and

1916 in S. rim;

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

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the ground and 4 ins. in a mound of stone, for cor. of secs.

1, 6, 7 and 12, with brass cap, marked

T 23 N in N. half,

R 22 W S 1 in NW.,

R 21 W S 6 in NE.,

S 7 in SE., and

S 12 in SW. quadrant; and

1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.

Land, rolling and broken.

Soil, rocky and sandy; 4th rate.

No timber.

Undergrowth, greasewood and catclaw.

North, bet. secs. 1 and 6,

over rolling land, through scattering undergrowth.

40.00 Set an iron post, 3 ft. long, 3 ins. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked $\frac{1}{4}$ in N.,

S 1 in W., and

S 6 in E. half; and

1916 in S. rim;

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

51.95 Wash, 70 lks. wide, course W.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the ground and 4 ins. in a mound of stone, for cor. of Tps.

West Boundary, T. 23 N., R. 21 W.

Chains

23 and 24 N., R. 21 W., and fracl. Tps. 23 and 24 N., R. 22 W.,
 with brass cap, marked, T 24 N. half;
 T 23 N in S. half,
 R 22 W S 36 in NW.,
 R 21 W S 31 in NE.,
 S 6 in SE., and
 S 1 in SW. quadrant; and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
 S. of cor. Impracticable to dig pits or set cor. far-
 ther in the ground.

Land, rolling.
 Soil, rocky and sandy; 4th rate.
 No timber.
 Undergrowth, greasewood and catclaw.

At this cor. I set off 21°24 1/2' S. on the decl. arc; and at
 apparent noon observe the sun on the meridian. The re-
 sulting lat. is 35°25'. Jan. 14, 1916.
 H. P.

North Boundary, T. 23 N., R. 21 W.

G. H. R.
 Jan. 10, 1916.

At the cor. of Tps. 23 and 24 N., Rs. 20 and 21 W., here-
 inbefore described, at 10h 00m a.m., l.m.t., I set off
 35°25' on the lat. arc; 22°03' S on the decl. arc; and
 determine a meridian with the solar.

Thence I run
 West on a random line, along the N. bdy. of T. 23 N.,
 R 21 W., setting temp. 1/4 sec. and sec. cors. at intervals
 of 40 chs.; and at 478.00 chs. intersect range line 123
 lks. N. of the cor. of Tps. 23 & 24 N., R. 21 W., & frac. Tps. 23
 & 24 N., R. 22 W., hereinbefore described.
 The falling answers to a correction of 0°09', or 20 1/2 lks.
 S. per mile, counting from the NE. cor. of the Tp.;
 therefore the true return course is N. 89°51' E.

Jan. 24, 1916.

At 9h 30m a.m., l.m.t., I set off 35°25' on the lat. arc;
 19°22 1/2' S. on the decl. arc; and determine a meridian
 with the solar, at the cor. of Tps. 23 & 24 N., R. 21 W. & frac.
 Ts. 23 and 24 N., R. 22 W., hereinbefore described.

Thence I run
 N. 89°51' E., on a true line, bet. secs. 6 and 31,
 over gently sloping plateau, through scattering under-
 growth.

38.00 Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the
 ground and 8 ins. in a mound of stone, for 1/4 sec. cor.,
 with brass cap, marked

1/4 S 31 in N. half,
 S 6 in S. half, and
 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
 N. of cor. Impracticable to dig pits or set cor. far-
 ther in the ground.

60.00 Wash, 60 lks. wide, course SW.

63.00 Wash, 60 lks. wide, course NW.

78.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the
 ground and 4 ins. in a mound of stone, for cor. of secs.
 5, 6, 31 and 32, with brass cap, marked

34

North Boundary of T. 23 N., R. 21 W.

Chains.

T 24 N S 31 in NW.,
R 21 W S 32 in NE.,
S 5 in SE., and
S 6 in SW. quadrant;
T 23 N in S. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

Land, rolling plateau.

Soil, sandy and rocky loam; 4th rate.

No timber.

Undergrowth, greasewood and cactus.

N. $89^{\circ}51'E.$, bet. secs. 5 and 32,
over rolling and broken plateau, through scattering
undergrowth.

10.20 Wash, 50 lks. wide, course NW.

29.10 Wash, 50 lks. wide, course NW.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the
ground and 14 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor.,
with brass cap, marked

$\frac{1}{4}$ S 32 in N. half,
S 5 in S. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
N. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

55.05 Wash, 40 lks. wide, course SW.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., in a mound of
stone, on bed rock, for cor. of secs. 4, 5, 32 and 33,
with brass cap, marked

T 24 N S 32 in NW.,
R 21 W S 33 in NE.,
S 4 in SE., and
S 5 in SW. quadrant;
T 23 N in S. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

Land, rolling and broken.

Soil, rocky; 4th rate.

No timber.

Undergrowth, cactus and greasewood.

N. $89^{\circ}51'E.$, bet. secs. 4 and 33,
over gently sloping plateau, through scattering under-
growth.

30.00 Leave plateau and enter mountainous land.

35.00 Wash, 5 chs. wide, course S. $20^{\circ}W.$; asc. W. slope.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the
ground and 14 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor.,
with brass cap, marked

$\frac{1}{4}$ S 33 in N. half,
S 4 in S. half, and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
N. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

55.00 Spur, 200 ft. above wash, extends S.; desc. E. slope 85
ft. to

61.00 Wash, 20 lks. wide, course SW.; asc. W. slope 170 ft. to

68.75 Spur extends SW.; desc. broken NE. slope 110 ft. to

80.00 Set an iron post, 3 ft. long, 3 ins. diam., in a mound of
stone, on bed rock, for cor. of secs. 3, 4, 33 and 34.

Chains

with brass cap, marked

- T 24 N S 33 in NW.,
- R 21 W S 34 in NE.,
- S 3 in SE., and
- S 4 in SW. quadrant;
- T 23 N in S. half, and
- 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Impracticable to dig pits or set cor. in the ground.

Land, plateau for W. 30 chs., and mountainous for balance. Soil, rocky; 4th rate.

No timber.

Undergrowth, greasewood and cactus.

N.89°51'E., bet. secs. 3 and 34.

over mountainous land, through scattering undergrowth. Asc. broken W. slope 150 ft. to

- 14.30 Short spur extends SW.; desc. SE. slope 90 ft. to
- 25.10 Head of wash, course S.20°W.; asc. SW. slope 160 ft. to
- 32.15 Short spur extends S.; desc. 130 ft; to
- 40.00 Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground and 8 ins. in a mound of stone, for ¼ sec. cor., with brass cap, marked

- ¼ S 34 in N. half,
- S 3 in S. half, and
- 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Impracticable to dig pits or set cor. farther in the ground.

45.90 Desc. broken SE. slope 85 ft. to

- Wash, 20 lks. wide, course SW.; asc. 400 ft. to
- 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 12 ins. in the ground and 12 ins. in a mound of stone, for cor. of secs. 2, 3, 34 and 35, with brass cap, marked

- T 24 N S 34 in NW.,
- R 21 W S 35 in NE.,
- S 2 in SE., and
- S 3 in SW. quadrant;
- T 23 N in S. half, and
- 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.

Land, mountainous.

Soil, rocky; 4th rate.

No timber.

Undergrowth, greasewood, cactus and sage-brush.

Jan. 24, 1916.

Jan. 10, 1916.

N.89°51'E., bet. secs. 2 and 35, over mountainous land, through scattering undergrowth. Asc. SW. slope 110 ft. to

- 2.60 Small spur extends S.; desc. SE. slope 65 ft. to
- 10.50 Head of wash, course S.10°W.; asc. broken SW. slope.
- 40.00 Point for ¼ sec. cor. falls at a point where it is impracticable to set same: therefore at

- 43.32 Set an iron post, 3 ft. long, 1 in. diam., in a mound of stone, on bed rock, for witness cor. to ¼ sec. cor., with brass cap, marked

- WC in W. half,
- ¼ S 35 in N. half,
- S 2 in S. half, and
- 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Impracticable to dig pits or set cor. in the ground.

36

North Boundary of T. 23 N., R. 21 W.

Chains

Asc. along broken SW. slope of large butte about 5 chs. S. of line.
 52.20 Ridge, 960 ft. above wash, bears N. and S.; desc. E. slope 580 ft. to
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 6 ins. in the ground and 18 ins. in a mound of stone, for cor. of secs. 1, 2, 35 and 36, with brass cap, marked
 T 24 N S 35 in NW.,
 R 21 W S 36 in NE.,
 S 1 in SE., and
 S 2 in SW. quadrant;
 T 23 N in S. half, and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 Land, rough mountainous.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, cactus, greasewood, scrub oak and sage-brush.

N. 89° 51' E., bet. secs. 1 and 36, over mountainous land, through scattering undergrowth. Desc. E. slope 250 ft. to
 33.20 Wash, 50 lks. wide, course SE.; asc. broken SW. slope.
 38.75 Spur extends S.; desc. broken NE. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 8 ins. in the ground and 18 ins. in a mound of stone, for ¼ sec. cor., with brass cap, marked
 ¼ S 36 in N. half,
 S 1 in S. half, and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Impracticable to dig pits or set cor. farther in the ground.
 58.35 Wash, 80 ft. below spur, 100 lks. wide, course SE.; asc. broken SW. slope 75 ft. to
 80.00 The cor. of Tps. 23 and 24 N., Rs. 20 and 21 W., hereinbefore described.
 Land, mountainous.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, greasewood and cactus.

Jan. 10, 1916.
G. H. R.

North Boundary, Fractional T. 23 N., R. 22 W.

H. P.
 Jan. 14, 1916.
 From the cor. of Ts. 23 & 24 N., R. 21 W., & frac. Ts. 23 & 24 N., R. 22 W., hereinbefore described, I run,
 West, on a true line, bet. secs. 1 and 36, over rolling land, through scattering undergrowth.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked
 ¼ S 36 in N. half,
 S 1 in S. half, and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.

North Boundary of Fractional T. 23 N., R. 22 W.

Chains

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 2, 35 and 36, with brass cap, marked

T 24 N S 35 in NW.,
 R 22 W S 36 in NE.,
 S 1 in SE., and
 S 2 in SW. quadrant;
 T 23 N in S. half, and
 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.

Land, rolling.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, greasewood and catclaw.

40.00 West, bet. secs. 2 and 35,
 over rolling land, through scattering undergrowth.
 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked

¼ S 35 in N. half,
 S 2 in S. half, and
 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.

56.64 Wash, 40 lks. wide, course SW.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 2, 34, & 35 & frac. sec. 3, with brass cap, marked

T 24 N S 34 in NW.,
 R 22 W S 35 in NE.,
 S 2 in SE., and
 S 3 in SW. quadrant;
 T 23 N in S. half, and
 1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1; ft. high, W. of cor,

Land, rolling.
 Soil, rocky; 4th rate.
 Undergrowth, greasewood, catclaw and cactus.
 No timber.

Jan. 14, 1916.

Jan. 21, 1916.
 At 10h 00m a.m., l.m.t., I set off 35°25' on the lat. arc; 20°03' S. on the decl. arc; and determine a meridian with the solar, at the cor. of secs. 2, 34 & 35, and frac. sec. 3.

Thence I run West, bet. sec. 34, and frac. sec. 3.
 over rolling and broken land, through scattering undergrowth.
 Desc. 170 ft. to

26.00 Enter river bottom; bears N. and S.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked

¼ S 34 in N. half,
 S 3 in S. half, and
 1916 in S. rim;

dig pits, 18x18x12 ins., E. and W. of cor., 3 ft. dist., and raise a mound of earth, 3½ ft. base, 1½ ft. high, N. of cor., from which

A screw-bean tree, 6 ins. diam., bears N. 31°45' E., 68 lks. dist., marked ¼ S 34 BT.
 A screw-bean tree, 6 ins. diam., bears S. 75° E., 22 lks. dist., marked ¼ S 3 BT.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of sec. 34 and frac. secs. 3, 4, and 33, with brass cap, marked

Chains

cap, marked

- T 24 N S 33 in NW.,
- R 22 W S 34 in NE.,
- S 3 in SE., and
- S 4 in SW. quadrant;
- T 23 N in S. half, and
- 1916 in S. rim;

from which

- A willow, 12 ins. diam., bears N.25 $\frac{1}{2}$ °E., 43 lks. dist., marked T 24 N R 22 W S 34 BT.
- A willow, 10 ins. diam., bears S.13 $\frac{1}{2}$ °E., 72 lks. dist., marked T 23 N R 22 W S 3 BT.
- A willow, 12 ins. diam., bears S.7 $\frac{1}{4}$ °W., 64 lks. dist., marked T 23 N R 22 W S 4 BT.
- A willow, 12 ins. diam., bears N.10 $\frac{1}{2}$ °W., 85 lks. dist., marked T 24 N R 22 W S 33 BT.

Land, rolling plateau in E. 26 chs. and level river bottom in west part.

Soil, sandy and rocky; 3rd and 4th rate.

Timber, some cottonwood, willow and screw-bean, in river bottom.

Undergrowth, greasewood, cactus, catclaw, arrow-weed and willow.

West, bet. fractional secs. 4 and 33.

over level land, through dense undergrowth, and scattering timber.

16.47 To left bank of Colorado River, brs. N.47°W. and S.6°E.

Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, cor meander cor. of fracl. secs. 4 and 33, with brass cap, marked

- MC in W.,
- T 24 N. in N.,
- T 23 N in S., and
- R 22 W in E. half;
- S 33 in NE., and
- S 4 in SE. sector; and
- 1916 in S. rim;

from which

- A willow, 7 ins. diam., bears N.72 $\frac{1}{2}$ °E., 50 lks. dist., marked T 24 N R 22 W S 33 MC BT.
- A willow, 8 ins. diam., bears S.75°45'E., 130 lks. dist., marked T 23 N R 22 W S 4 MC BT.

Land, level.

Soil, sandy; 2nd rate.

Timber, willow and cottonwood.

Undergrowth, arrow-weed and willow.

Jan. 21, 1916.

H. P.

East Boundary of T. 24 N., R. 21 W.

H. P.

Feb. 7, 1916.

At 9h 00m a.m., l.m.t., I set off 35°25' on the lat. arc; 15°32 $\frac{1}{2}$ ' S. on the decl. arc; and determine a meridian with the solar, at the cor. of Tps. 23 and 24 N., Rs. 20 and 21 W., hereinbefore described.

Thence I run

North, bet. secs. 31 and 36,

East Boundary, T. 24 N., R. 21 W.

Chains

over rolling mountainous land, through scattering undergrowth.
 Asc. 45 ft. to
 18.50 Top of low spur extends SE.; thence on broken NE. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, and 8 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 31 in E., and
 S 36 in W. half, and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 67.00 Wash, 2 chs. wide, course SE.
 70.00 Asc. SW. slope 150 ft. to
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the ground and 6 ins. in a mound of stone, for cor. of secs. 25, 30, 31 and 36, with brass cap, marked
 T 24 N in N. half,
 R 21 W S 25 in NW.,
 R 20 W S 30 in NE.,
 S 31 in SE., and
 S 36 in SW. quadrant; and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 Land, rolling mountainous.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, juniper, greasewood, catclaw and cactus.

 North bet. secs. 25 and 30,
 over rolling mountainous land, through scattering undergrowth.
 Asc. 210 ft. to
 22.75 Top of ridge bears NW. and SE.
 40.00 Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground and 6 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 25 in W., and
 S 30 in E. half, and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 80.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the ground and 4 ins. in a mound of stone, for cor. of secs. 19, 24, 25 and 30, with brass cap, marked
 T 24 N in N. half,
 R 21 W S 24 in NW.,
 R 20 W S 19 in NE.,
 S 30 in SE., and
 S 25 in SW. quadrant; and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.
 Land, rolling mountainous.
 Soil, rocky; 4th rate.
 No timber.
 Undergrowth, greasewood, cactus, catclaw and juniper.

 North, bet. secs. 19 and 24,
 over rolling land, through scattering undergrowth.

40

East Boundary, T. 24 N., R. 21 W.

Chains

40.00 Set an iron post, 3 ft. long, 1 in. diam., 15 ins. in the ground and 11 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 19 in E., and
 S 24 in W. half; and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 20 ins. in the ground and 4 ins. in a mound, for cor. of secs. 13, 18, 19 and 24, with brass cap, marked
 T 24 N in N. half,
 R 21 W S 13 in NW.,
 R 20 W S 18 in NE.,
 S 19 in SE., and
 S 24 in SW. quadrant; and
 1916 in S. rim;
 and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor. Impracticable to dig pits or set cor. farther in the ground.

Land, rolling.

Soil, gravelly loam; 3rd rate.

No timber.

Undergrowth, greasewood, juniper, cactus, catclaw and spanish bayonet.

At this cor. I set off $15^{\circ}30\frac{1}{2}'$ S. on the decl. arc; and at apparent noon observe the sun on the meridian. The resulting lat. is $35^{\circ}27\frac{1}{2}'$.
 Feb. 7., 1916.

Feb. 7, 1916.

North, bet. secs. 13 and 18,
 over rolling land, through scattering undergrowth.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 13 in W., and
 S 18 in E. half; and
 1916 in S. rim;

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

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 7, 12, 13 and 18, with brass cap, marked

T 24 N in N. half,
 R 21 W S 12 in NW.,
 R 20 W S 7 in NE.,
 S 18 in SE., and
 S 13 in SW. quadrant; and
 1916 in S. rim;

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

Land, rolling.

Soil, gravelly loam; 3rd rate.

No timber.

Undergrowth, greasewood, juniper, cactus, catclaw and spanish bayonet.

North, bet. secs. 7 and 12,
 over rolling land, through scattering undergrowth.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
 S 7 in E., and
 S 12 in W. half; and
 1916 in S. rim;

Chains

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.

79.50 Road from Chloride to Colorado River bears E. and W.

80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 1, 6, 7 and 12, with brass cap, marked

T 24 N in N. half,
R 21 W S 1 in NW.,
R 20 W S 6 in NE.,
S 7 in SE., and
S 12 in SW. quadrant; and
1916 in S. rim;

dig pits, 18x18x12 ins., in each sec., 5½ ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

Land, rolling.
Soil, gravelly loam; 3rd. rate.
No timber.
Undergrowth, greasewood, catclaw, juniper, cactus and spanish dagger.

North, bet. secs. 1 and 6,
over rolling land, through scattering undergrowth.

18.00 Wash, 40 lks. wide, course E.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., with brass cap, marked

¼ in N.,
S 1 in W., and
S 6 in E. half; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.

70.82 Intersect 6th Standard Parallel N., 15.95 chs. E. of the standard cor. of Tps. 25 N., Rs. 20 and 21 W., which is an iron post, 3 ins. diam., with brass cap, properly marked & witnessed, (reestablished under current Group No. 45). At point of intersection

Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for closing cor. of Tps. 24 N., Rs. 20 and 21 W., with brass cap, marked

T 25 N R 20 W S 31 in N. half,
T 24 N CC in S. half,
S 1 R 21 W in SW., and
S 6 R 20 W in SE. quadrant; and
1916 in S. rim;

dig pits, 24x18x12 ins., crosswise on each line, E. and W., 3 ft. dist., and S. of post, 7 ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, S. or cor.

Land, rolling.
Soil, gravelly loam; 3rd. rate.
No timber.
Undergrowth, greasewood, cactus, catclaw, juniper and spanish bayonet.

Feb. 7, 1916.
H. P.

Chains.

H. P.
Feb. 16, 1916.
At 10h oom a.m., l.m.t., I set off 35°25' on the lat. arc; 12°35' S. on the decl. arc; and determine a meridian with the solar at the cor. of Tps. 23 & 24 N., R. 21 W. & frac. Ts. 23 and 24 N., R. 22 W., hereinbefore described.

Thence I run
North, bet. secs. 31 and 36,
over rolling land, through scattering undergrowth.
Enter broad wash, course W.

20.00

Leave same.

40.00

Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for 1/4 sec. cor., with brass cap, marked
1/4 in N.,
S 31 in E., and
S 36 in W. half; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
W. of cor.

77.18

Wash, 100 lks. wide, course SW.

80.00

Set an iron post, 3 ft. long, 3 ins. diam., 18 ins. in the ground and 6 ins. in the ground, for cor. of secs. 25, 30, 31 and 36, with brass cap, marked

T 24 N in N. half,
R 22 W S 25 in NW.,
R 21 W S 30 in NE.,
S 31 in SE., and
S 36 in SW. quadrant; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
W. of cor. Impracticable to dig pits or set cor. farther in the ground.

Land, rolling and broken.

Soil, rocky; 4th rate.

No timber.

Undergrowth, greasewood, catclaw and cactus.

North, bet. secs. 25 and 30,
over rolling land, through scattering undergrowth.

3.00

Enter wash, course SW.

6.50

Leave same.

24.00

Enter wash, course SW.

35.00

Leave same.

40.00

Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for 1/4 sec. cor., with brass cap, marked

1/4 in N.,
S 25 in W., and
S 30 in E. half; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
W. of cor.

61.00

Wash, 100 lks. wide, course W.

80.00

Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the ground, for cor. of secs. 19, 24, 25 and 30, with brass cap, marked

T 24 N in N. half,
R 22 W S 24 in NW.,
R 21 W S 19 in NE.,
S 30 in SE., and
S 25 in SW. quadrant; and
1916 in S. rim;

and raise a mound of stone, 2 ft. base, 1 1/2 ft. high,
W. of cor.

Land, rolling and broken.

Soil, rocky; 4th rate.

No timber.

Undergrowth, greasewood, catclaw and cactus.

Chains

North, bet. secs. 19 and 24,
over rolling and broken land, through scattering under-
growth.

5.00
11.00
32.00
40.00

Enter wash, course SW.
Leave same.
Enter wash, course W.
Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
S 19 in E., and
S 24 in W. half; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.

At this cor. I set off $12^{\circ}33\frac{1}{2}'$ S. on the decl. arc; and at
apparent noon, observe the sun on the meridian. The re-
sulting lat. is $35^{\circ}27'$. Feb. 16, 1916.

48.50
80.00

Leave wash, course W.
Set an iron post, 3 ft. long, 3 ins. diam., 16 ins. in the
ground and 8 ins. in a mound of stone, for cor. of secs.
13, 18, 19 and 24, with brass cap, marked
T 24 N in N. half,
R 22 W S 13 in NW.,
R 21 W S 18 in NE.,
S 19 in SE., and
S 24 in SW. quadrant; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.
Land, rolling and broken.
Soil, rocky; 4th rate.
No timber.
Undergrowth, greasewood, catclaw and cactus.

North, bet. secs. 13 and 18,
over rolling and broken land,
through scattering undergrowth.

5.50
34.95
40.00

Deep wash, 60 lks. wide, course SW.
Enter wash, course SW.
Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
S 13 in W., and
S 18 in E. half; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.

40.95
47.45
80.00

Leave wash, course SW.
Wash, 100 lks. wide, course W.
Set an iron post, 3 ft. long, 3 ins. diam., 16 ins. in the
ground, and 8 ins. in a mound of stone, for cor. of secs.
7, 12, 13 and 18, with brass cap, marked
T 24 N in N. half,
R 22 W S 12 in NW.,
R 21 W S 7 in NE.,
S 18 in SE., and
S 13 in SW. quadrant; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.
Land, rolling and broken.
Soil, rocky; 4th rate.
No timber.
Undergrowth, greasewood, catclaw and cactus.

44

West Boundary of T. 24 N., R. 21 W.

Chains

North, bet. secs. 7 and 12,
over rolling and broken land, through scattering
undergrowth.

18.96- Wash, 100 lks. wide, course W.
40.00 Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap, marked
 $\frac{1}{4}$ in N.,
S 7 in E., and
S 12 in W. half, and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.

62.00 Wash, 100 lks. wide, course SW.
75.00 Wash, 2 chs. wide, course SW.
80.00 Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the
ground, for cor. of secs. 1, 6, 7 and 12, with brass cap,
marked
T 24 N in N. half;
R 22 W S 1 in NW.,
R 21 W S 6 in NE.,
S 7 in SE., and
S 12 in SW. quadrant; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor.

Land, rolling and broken.
Soil, rocky; 4th rate.
No timber.
Undergrowth, greasewood, catclaw and cactus.
Feb. 16, 1916.

Feb. 17, 1916.

At 9h30m a.m., l.m.t., I set off $35^{\circ}29\frac{1}{2}'$ on the lat. arc;
 $12^{\circ}14\frac{1}{2}'$ S. on the decl. arc; and determine a meridian
with the solar, at the cor. of secs. 1, 6, 7 and 12.

Thence I run

North, bet. secs. 1 and 6,
Over rolling land, through scattering undergrowth.

12.50 Road from Chloride to Colorado River bears E. and W.
29.00 Enter wash, course W.
38.50 Leave same.
40.00 Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the
ground and 6 ins. in a mound of stone, for $\frac{1}{4}$ sec. cor.,
with brass cap, marked
 $\frac{1}{4}$ in N.,
S 1 in W., and
S 6 in E. half; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
W. of cor. Impracticable to dig pits or set cor. far-
ther in the ground.

58.40 Enter wash, course SW.
72.36 Intersect 6th standard parallel N., 17.83 chs. E. of the
standard cor. of Tps. 25 N., Rs. 21 and 22 W., which
is an iron post, 3 ins. diam., with brass cap, properly
marked & witnessed (established under current Group No. 245)

At point of intersection
Set an iron post, 3 ft. long, 3 ins. diam., 24 ins. in the
ground, for closing cor. of Tps. 24 N., Rs. 21 and 22 W.,
with brass cap, marked
T 25 N R 21 W S 31 in N. half,
CC T 24 N in S. half,
S 1 R 22 W in SW., and
S 6 R 21 W in SE. quadrant; and
1916 in S. rim;
and raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high,
S. of cor.

Land, rolling. Soil, rocky; 4th rate.
No timber. Undergrowth, greasewood, catclaw and cactus.
Feb. 17, 1916. H. P.

Group 44, Donnell, Arizona, Group 44.

Witnesses of Jay H. Michaelson and Mary Price.

TABLES OF TOWNSHIP BOUNDARIES.

LATITUDES, DEPARTURES, AND CLOSING ERRORS.

GROUP 44, ARIZONA.

Boundaries of Portion of T. 21 N., R. 17 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
South boundary (5th.Std.Par.N)	S.89°30'W.	161.76		1.41		161.76	
Subdivisional West Boundary.	N.3°40'E.	37.16	37.08		2.38		
	N.0°12'E.	42.69	42.69		.15		
	N.2°49'E.	40.65	40.60		2.00		
	N.3°49'W.	41.27	41.18				2.75
	S.89°34'W.	40.91		.31			40.91
	S.88°53'W.	41.45		.81			41.44
West Boundary	N.0°04'E.	320.22	320.22		.37		
North Boundary	N.88°47'E.	241.46	5.13		241.40		
Subdivisional East Boundary	S.0°06'E.	41.70		41.70	.07		
	S.1°22'W.	41.07		41.06			.98
	S.0°30'W.	40.82		40.82			.36
	S.0°48'E.	41.08		41.08	.57		
	S.1°15'W.	41.20		41.19			.90
	S.0°08'W.	39.58		39.58			.09
	S.0°33'E.	239.04		239.03	2.29		
Convergency					.17		
Totals			486.90	486.99	249.40	249.19	
				486.90	249.19		
Error in Latitude				0.09			
	Error in Departure				0.21		

Boundaries of T. 21 N., R. 20 W.

Line designated	True Course	Dist.	Latitudes.		Departures.		
			N.	S.	E.	W.	
			Chs.	chs.	chs.	chs.	
South boundary (5th.Std.Par.N).	West	480.00				480.00	
West Boundary	North	495.82	495.82				
North Boundary	East	475.51			475.51		
East Boundary	S.0°01'E.	80.00		80.00	.02		
	S.0°05'W.	80.22		80.22			.12
	S.0°07'E.	80.36		80.36	.16		
	S.0°04'E.	79.74		79.74	.09		
	S.0°34'W.	80.24		80.24			.79
	S.3°12'E.	95.23		95.08	5.32		
Convergency					.52		
Totals			495.82	495.64	481.62	480.91	
			495.64		480.91		
Error in Latitude			0.18				
	Error in Departure				0.71		

Latitudes, Departures and Closing Errors.

Boundaries of T. 21 N., R. 21 W.

Line designated	True Course	Dist.	Latitudes		Departures.	
			N.	S.	E.	W.
			chs.	chs.	chs.	chs.
South Boundary (5th.St.Par.N.)	West	478.70				478.70
West Boundary (Colorado River)	Meanders		267.04			5.66
West Boundary	North	228.60	228.60			
North Boundary	East	483.47			483.47	
East Boundary	South	495.82		495.82		
Convergency					0.52	
Totals			495.64	495.82	483.99	484.36
				495.64		483.99
Error in Latitude				0.18		
						0.37

Boundaries of Fractional T. 21 N., R. 22 W.

Line designated	True Course	Dist.	Latitudes		Departures.	
			N.	S.	E.	W.
			chs.	chs.	chs.	chs.
West Boundary (Colorado River)	Meanders.		228.12			61.28
North Boundary	East	61.54			61.54	
East Boundary	South	228.60		228.60		
Convergency					0.02	
Totals			228.12	228.60	61.56	61.28
				228.12	61.28	
Error in Latitude				0.48		
						0.28

Boundaries of T. 22 N., R. 18 W.

Line designated	True Course	Dist.	Latitudes		Departures.	
			N.	S.	E.	W.
			chs.	chs.	chs.	chs.
South Boundary	S.89°58'W.	479.58		.28		479.58
West boundary (5th.Guide MerW)	North	484.36	484.36			
North Boundary	N.89°41'E.	80.51	.44		80.51	
	N.89°15'E.	161.06	2.11		161.04	
	N.89°52'E.	236.04	.55		236.04	

(continued)

Latitudes, Departures and Closing Errors.

Boundaries of T. 22 N., R. 18 W., continued.

Line designated	True Course	Dist.	Latitudes.		Departures.	
			N.	S.	E.	W.
		Chs.	chs.	chs.	chs.	chs.
East Boundary	S.4°06'E.	88.50		88.27	6.33	
	S.5°05'E.	158.44		157.82	14.04	
	S.5°14'W.	40.62		40.45		3.70
	S.4°55'W.	40.31		40.16		3.45
	S.4°17'W.	159.84		159.39		11.94
Convergency					0.52	
Totals			487.46	486.37	498.48	498.67
			486.37			498.48
Error in Latitude			1.09			
Error in Departure						0.19

Boundaries of T. 22 N., R. 19 W.

Line designated	True Course	Dist.	Latitudes.		Departures.	
			N.	S.	E.	W.
		chs.	chs.	chs.	chs.	chs.
South Boundary	N.89°57'W.	479.90	.42			479.90
West Boundary	North	484.70	484.70			
North Boundary	East	479.98			479.98	
East boundary (5th Guide Mer. W.)	South	484.36		484.36		
Convergency					.52	
Totals			485.12	484.36	480.50	479.90
			484.36		479.90	
Error in Latitude			0.76			
Error in Departure					0.60	

Boundaries of a Portion of T. 22 N., R. 20 W.

Line designated	True Course	Dist.	Latitudes.		Departures.	
			N.	S.	E.	W.
		chs.	chs.	chs.	chs.	chs.
South Boundary	West	399.49				399.49
West Boundary	North	480.00	480.00			
North Boundary	S.89°56'E.	158.65		.18	158.65	
North Boundary (Subdivisional)	S.0°09'E.	80.12		80.12	.21	
	S.0°03'E.	80.00		80.00	.07	
	East	80.00			80.00	
	N.0°02'W.	80.00	80.00			.05
	East	160.00			160.00	
East Boundary (Subdivisional)	S.0°01'E.	400.00		400.00	.12	
Convergency					.38	
Totals			560.00	560.30	399.49	399.54
			560.00			399.49
Error in Latitude						0.05
Error in Departure				0.30		

Latitudes, Departures, and Closing Errors. 49

Boundaries of T. 22 N., R. 21 W.

Line designated	True Course	Dist. chs.	Latitudes		Departures	
			N. chs.	S. chs.	E. chs.	W. chs.
South Boundary	West	479.49				479.49
West Boundary	North	480.00	480.00			
North Boundary	N.89°47'E.	479.08	1.81		479.08	
East Boundary	South	480.00		480.00		
Convergency						.52
Totals			481.81	480.00	479.60	479.49
Error in Latitude			480.00		479.49	
			1.81			
Error in Departure						.11

Boundaries of Fractional T. 22 N., R. 22 W.

Line designated	True Course	Dist. chs.	Latitudes		Departures	
			N. chs.	S. chs.	E. chs.	W. chs.
South Boundary	West	61.54				61.54
West boundary (Colorado River)	(meanders)		480.04			51.97
North Boundary	East	113.23			113.23	
East Boundary	South	480.00		480.00		
Convergency						.69
Totals			480.04	480.00	113.32	113.51
Error in Latitude			480.00			113.32
				.04		
Error in Departure						.19

Boundaries of T. 23 N., R. 17 W.

Line designated	True Course	Dist. chs.	Latitudes		Departures	
			N. chs.	S. chs.	E. chs.	W. chs.
South Boundary	N.89°11'W.	83.46	1.19			83.45
	N.89°38'W.	162.64	1.04			162.64
	N.89°46'W.	82.52	.34			82.52
	N.89°04'W.	39.90	.65			39.89
	N.88°42'W.	39.97	.91			39.96
	S.89°09'W.	81.20		1.20		81.19
West Boundary	N.3°07'E.	79.90	79.78		4.34	
	N.0°30'W.	159.76	159.75			1.39
	N.0°39'W.	41.13	41.13			.47
	N.2°42'W.	38.56	38.52			1.82
	N.2°W.	40.41	40.39			1.41
	N.1°32'E.	120.04	120.00		3.21	
North Boundary	S.89°43'E.	487.31		2.41	487.31	
East Boundary	South	480.00		480.00		
Convergency						.52
Totals			483.70	483.61	495.78	494.74
Error in Latitude			483.61		494.74	
			0.09			.64
Error in Departure						

Latitudes Departures and Closing Errors.

Boundaries of T. 23 N., R. 19 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	West	479.98					479.98
West Boundary	North	483.84	483.84				
North Boundary	East	476.05			476.05		
East Boundary 5th. Guide Mer. W.	S.0°02'E.	161.20		161.20	.09		
	S.0°31'E.	322.72		322.71	2.91		
Convergency					.52		
Totals			483.84	483.91	479.57		479.98
Error in Latitude				483.84			479.57
				.07			
							.41

Boundaries of T. 23 N., R. 20 W.							
Line designated	True Course.	Dist.	Latitudes		Departures.		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	N.89°56'W.	478.65	.55				478.65
West Boundary	North	480.00	480.00				
North Boundary	N.89°59'E.	477.75	.14		477.75		
East Boundary	South	480.00		480.00			
Convergency					.52		
Totals			480.69	480.00	478.27		478.65
			480.00				478.27
Error in Latitude			.69				
							.38

Boundaries of T. 23 N., R. 21 W.							
Line designated	True Course	Dist.	Latitudes		Departures.		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	S.89°47'W.	479.08		1.81			479.08
West Boundary	North	480.00	480.00				
North Boundary	N.89°51'E.	478.00	1.25		478.00		
East Boundary	South	480.00		480.00			
Convergency					.52		
Totals			481.25	481.81	478.52		479.08
				481.25			478.52
Error in Latitude			.56				
							.56

Latitudes, Departures, and Closing Errors.

Boundaries of Fractional T. 23 N., R. 22 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	West	113.23					113.23
West Boundary (Colorado River)	(Meanders)	480.30	480.30				143.16
North Boundary	East	256.47			256.47		
East Boundary	South	480.00		480.00			
Convergency					.18		
Totals			480.30	480.00	256.65	256.39	
			480.00		256.39		
Error in Latitude			.30				
	Error in Departure				.26		

Boundaries of T. 24 N., R. 17 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	N.89°43'W.	487.31	2.41				487.31
West Boundary	North	464.45	464.45				
North Boundary (6th. Std. Par. N.)	East	484.39			484.39		
East Boundary	S.0°07'E.	25.56		25.56	.05		
	S.0°08'E.	40.10		40.10	.09		
	S.0°07'E.	40.02		40.02	.08		
	S.0°08'E.	40.06		40.06	.09		
	S.0°07'E.	40.09		40.09	.08		
	S.0°05'E.	40.05		40.05	.06		
	S.0°09'E.	40.07		40.07	.11		
	S.0°07'E.	40.06		40.06	.08		
	S.0°12'E.	40.09		40.09	.14		
	S.0°02'E.	39.72		39.72	.02		
S.0°09'E.	40.03		40.03	.10			
S.0°03'E.	40.03		40.03	.04			
Convergency					.52		
Totals			466.86	465.88	485.85	487.31	
			465.88			485.85	
Error in Latitude			.98				
	Error in Departure				1.46		

Boundaries of T. 24 N., R. 18 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
		chs.	chs.	chs.	chs.	chs.	chs.
South Boundary	N.89°35'W.	160.00	1.16				160.00
	N.89°10'W.	162.86	2.37				162.84
	S.89°27'W.	40.39		.39			40.39
	S.89°47'W.	119.28		.45			119.28
West Boundary	North	462.07	462.07				
North boundary (6th. Std. Par. N.)	East	482.18			482.18		
East boundary (5th. Guide Mer. W.)	South	464.45		464.45			
Convergency					.50		

Table continued on next page.

52

Latitudes, Departures, and Closing Errors.

Boundaries of T. 24 N., R. 18 W., (continued)							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
Totals			465.60	465.29	482.68	482.51	
			465.29		482.51		
Error in Latitude			.31				
Error in Departure					.17		
Boundaries of T. 24 N., R. 19 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
South Boundary	West	476.05				476.05	
West Boundary	North	461.98	461.98				
North Boundary (6th. Std. Par. N.)	East	475.64			475.64		
East Boundary (5th. Guide Mer. W.)	South	462.07		462.07			
Convergency					.52		
Totals			461.98	462.07	476.16	476.05	
				461.98	476.05		
Error in Latitude			.09				
Error in Departure					.11		
Boundaries of T. 24 N., R. 20 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
South Boundary	S. 89° 59' W.	477.75		.14		477.75	
West Boundary	North	470.82	470.82				
North Boundary (6th. Std. Par. N.)	East	476.73			476.73		
East Boundary	South	470.52		470.52			
Convergency					.52		
Totals			470.82	470.66	477.25	477.75	
			470.66			477.25	
Error in Latitude			.16				
Error in Departure					.50		
Boundaries of T. 24 N., R. 21 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
South Boundary	S. 89° 51' W.	478.00		1.25		478.00	
West Boundary	North	472.36	472.36				
North Boundary (6th. Std. Par. N.)	East	478.12			478.12		
East Boundary	South	470.82		470.82			
Convergency					.52		

Table continued on next page.

Latitudes, Departures, and Closing Errors.

Boundaries of T. 24 N., R. 21 W. (Continued).							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
Totals			472.36	472.07	478.64	478.00	
			472.07		478.00		
Error in Latitude			.29				
	Error in Departure				.64		

Boundaries of Fractional T. 24 N., R. 22 W.							
Line designated	True Course	Dist.	Latitudes		Departures		
			N.	S.	E.	W.	
			chs.	chs.	chs.	chs.	
South Boundary	West	256.47				256.47	
West Boundary (Colorado River)	Meanders		472.14			216.50	
North Boundary (6th. Std. Par. N.Y.)	East	471.53			471.53		
East Boundary	South	472.36		472.36			
Convergency					.30		
Totals			472.14	472.36	471.83	472.97	
				472.14		472.83	
Error in Latitude			.22				
	Error in Departure				.14		


FOR CERTIFICATES OF U.S. SURVEYORS AND U.S. TRANSITMEN,

See page 2 of this Book.

I, _____, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for _____ bearing date of the _____ day of _____, 191 _____, 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 _____ of the _____ Meridian, in the State of _____, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear 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 _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

U. S. Surveyor.

Subscribed by said _____, and sworn to before me }
this _____ day of _____, 191 _____ }

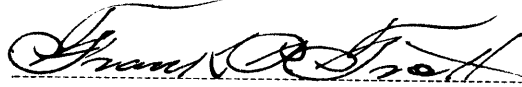


APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, *March 9*, 191*8*.

The foregoing field notes of the survey of ~~W. bdy. of Tp. 21 N.~~,
 West bdy. of Township 21, North, Range 20 West; South and North bdrs.
 of Township 22 North, Range 21 West; East bdy. of frac. Township 21
 North, Range 22 West; South, East and North bdrs. of frac. Township 22
 North, Range 22 West, West and North bdrs. of Township 23 North, Ranges
 20 and 21 West; North bdy. of frac. Township 23 North, Range 22 West,
 East and West bdrs. of Township 24 North, Range 21 West, of the Gila
 and Salt River Base and Meridian, in the State of Arizona,
 executed by Theo. O. Johnston & Guy H. Richardson, U.S. Surveyors, and Edward O.
 Lyman and Hugo Price, U. S. Transitmen,
 under his special instructions dated January 6, 1915 for Group 44, Arizona, having been
 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.
 of Arizona.

~~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.~~