3554

Book "F"
4—679

BOOK 3554

FIELD NOTES

OF THE SURVEY OF THE

Part of East boundary,

West boundary,

Part of North boundary, and

Subdivision lines

of

TOWNSHIP 27 NORTH, RANGE 12 WEST,

(In the Hualpai Indian Reservation.)

Of the __Gila and Salt River Base and__ Meridian,

In the State of _____ Arizona.

EXECUTED BY

Dupree R.Averill and James C.O'Brien,

U. S. Surveyors, and

Glenn F.Sawyer, U.S.Transitman,

In the capacity of U. S. Surveyor s., under instructions dated February 26, , 1920,
issued by the United States Surveyor General to govern surveys included in
Group No.109.Ariz., which were approved by the Commissioner of the General Land
Office, March 10, , 1920, and Assignment Instructions,dated
September 10,1920, November 22, 1920, and April 19, 1921.

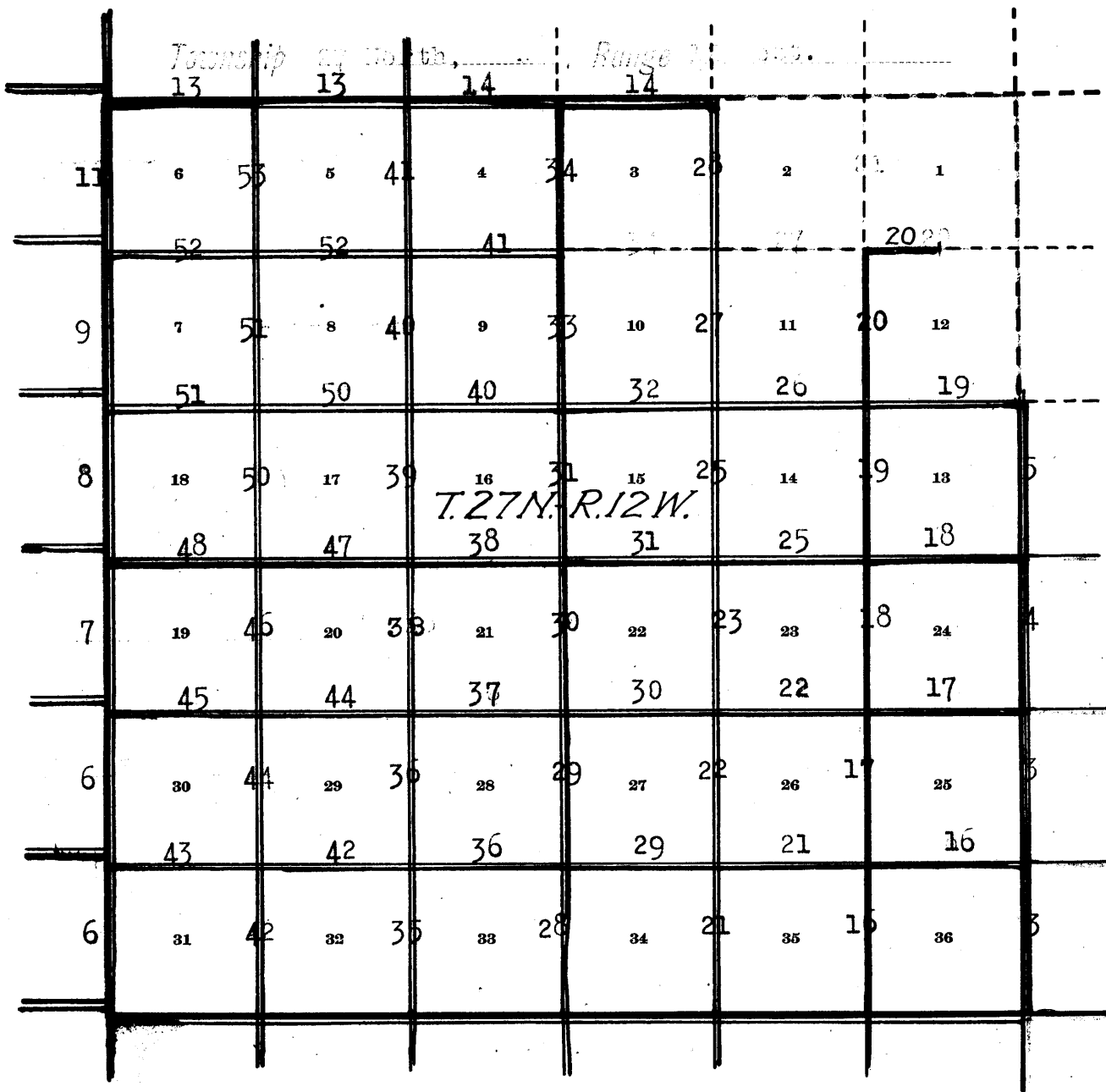Survey commenced _____ November 9, _____, 1920

Survey completed _____ June 16, _____, 1921.

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Book "F"

Group 109 - - - Arizona.

BOOK 3554

INDEX DIAGRAM.

Township 27 North, Range 12 West.

| 13 | 13 | 14 | 14 |

T.27N. R.12 W.

———— Lines surveyed under Group 109.

———— Lines surveyed under Group 108.

– – – – – Unsurveyed.

DATE DIAGRAM.

Book "F"

Group 109 - - - - Arizona.

Township 27 North, Range 12 West.

```
      11-28-20      12-2-1920     12-2-1920     11-23-20

11-29-20 │   6   │11-28-20│   5   │11-26-20│   4   │11-23-20│   3   │6-15-21│   2   │         │   1   │
      11-27-20      11-26-20      11-26-20      11-23       ----------11-24-20
                                              1920

11-26-20 │   7   │11-26-20│   8   │11-26-20│   9   │11-22-1920│  10  │6-15-21│  11   │11-24-20│  12   │
      11-27-20      11-25-20      11-25-20      6-16-21       11-18-20      11-24-20

11-26-20 │  18   │11-25-20│  17   │11-22-20│  16   │11-20 11-22 1920│ 15 │11-18-20│ 14 │11-18-20│ 13 │ 11-18-20
      11-26 11-24  11-24-20      11-23-20      11-20-20      11-17-20      11-18-20
       1920

11-26-20 │  19   │11-25-20│  20   │11-19-20│  21   │11-20-20│  22   │11-17-20│  23  │11-17-20│  24  │ 11-16 11-18 1920
      11-11-20      11-12-20      11-13-20      11-19-20      11-17-20      11-15-20

11-11-20 │  30   │11-10-20│  29   │11-12-20│  28   │11-13-20│  27   │11-13-1920│ 26 │11-17-20│ 25 │ 11-16-20
      11-9-20      11-10 11-11    11-12 11-13    11-13-1920    11-15-20      11-15-20
                    1920           1920

11-9-20 │  31   │11-10-20│  32   │11-11-20│  33   │11-13-20│  34   │11-13-1920│ 35 │11-15-20│ 36 │ 11-15-20
```

For dates of survey of this line, see Book "E" of this Group

———│— Black lines indicate surveys by Dupree R. Averill, U. S. S., on
dates shown thereon

———│— Red lines indicate surveys by James C. O'Brien, U. S. S., on
dates shown thereon.

———│— Blue lines indicate surveys by Glenn F. Sawyer, U. S. T., on
dates shown thereon.

2

Surveys hereinafter described executed by Dupree R. Aver-
ill and James C. O'Brien, U. S. Surveyors, and Glenn
F. Sawyer, U. S. Transitman, on dates shown on diagram
on page 1 hereof, Averill using Buff solar transit No.
9223, O'Brien and Sawyer using Young and Sons' light
mountain transit No. 8389. For description of in-
struments and certificate of approval, see Book "B".

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

We examine the adjustments of the transits and correct
all errors; then, to test the solar apparatus, by com-
paring their indications, resulting from solar obser-
vations made during a. m. and p. m. hours with a
meridian determined by observations on Polaris at
elongation, we proceed as follows:

Nov. 7, 1920: at our camp at Milkweed Tank, near the
center of sec. 10, T. 26 N., R. 12 W., G. & S. R. B.
& M., lat. 35° 39½' N., long. 113° 33' W., using the
meridian established as described in Book "E", at 9
hrs. 0 m., a. m., l. m. t., we set off 35° 39½' N.,
on the lat. arcs; 16° 18' S. on the decl. arcs; and
determine a meridian with each solar which agrees
with the true meridian.

At apparent noon, with the lat. arcs unchanged, we ob-
serve the sun on the meridian with each solar; the
resulting decl. in each case is 16° 21' S., which is
the computed decl. of the sun.

At 3 hrs. 0 m., p. m., l. m. t., with the lat. arcs un-
changed, we set off 16° 22½' S. on the decl. arcs and
determine a meridian with each solar, which agrees
with the true meridian.

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

Survey of Part of the
East Boundary of T. 27 N., R. 12 W.

Chains	
	From the cor. of Ts. 26 and 27 N., Rs. 11 and 12 W., which is an iron post, 3 ins. diam., properly marked, set in a mound of stone, witnessed by a mound of stone S. of post, as described in the field notes of current Group 108,
	North, bet. secs. 31 and 36.
	Over level land, through scattering timber and undergrowth
15.00	Asc. 40 ft.
25.00	Spur, slopes NW. Desc. 55 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

$$\overset{\frac{1}{4}}{\text{S 36} \mid \text{S 31}}$$
$$1920$$

From which
A cedar, 6 ins. diam., brs. N. 11° E., 250 lks. dist., marked $\frac{1}{4}$ S 31 B T.
A cedar, 10 ins. diam., brs. N. $69\frac{3}{4}$° W., 338 lks. dist., marked $\frac{1}{4}$ S 36 B T.

	Asc.
43.50	Spur, slopes NW. Desc. 270 ft.
49.35	Gulch, 10 lks. wide, course NE. Asc. 120 ft., over SE. slope.
64.02	Spur, slopes SE. Desc.
66.62	Head of draw, course SE. Asc. 120 ft., over S. slope.
75.41	Spur, slopes NE. Desc. 170 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 27 ins. in the ground, for cor. of secs. 25, 30, 31 and 36, marked on brass cap

$$\text{T 27 N}$$
$$\text{R 12 W} \mid \text{R 11 W}$$
$$\text{S 25} \mid \text{S 30}$$
$$\overline{\text{S 36} \mid \text{S 31}}$$
$$1920$$

From which
A pinyon, 8 ins. diam., brs. S. $87\frac{3}{4}$° E., 193 lks. dist., marked T 27 N R 11 W S 31 B T.
A pinyon, 10 ins. diam., brs. S. $55\frac{1}{2}$° W., 366 lks. dist., marked T 27 N R 12 W S 36 B T.
No other trees within limits. Raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
Land, level, rolling and mountainous.
Soil, gravelly and rocky, 4th rate.
Timber, cedar and pinyon.
Undergrowth, quinine brush and cactus.

	North, bet. secs. 25 and 30.
	Over mountainous land, through scattering timber and undergrowth.
	Desc. 130 ft.
4.60	Draw, course NW. Asc.
8.60	Spur, slopes W. Desc. 210 ft.
28.03	Wash, 20 lks. wide, course NE. Asc. 20 ft.
34.30	Spur, slopes NE. Desc. 45 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

$$\overset{\frac{1}{4}}{\text{S 25} \mid \text{S 30}}$$
$$1920$$

From which
A cedar, 24 ins. diam., brs. N. 30° E., 261 lks. dist., marked $\frac{1}{4}$ S 30 B T.
A cedar, 20 ins. diam., brs. S. 54° W., 76 lks. dist., marked $\frac{1}{4}$ S 25 B T.

Survey of Part of the
East Boundary of T. 27 N., R. 12 W.

Chains	
	Desc. 30 ft.
43.70	Draw, course NW. Asc. 20 ft.
47.00	Spur, slopes NW. Desc. 55 ft.
49.85	Wash, 10 lks. wide, course NW. Thence over level land.
52.49	Wash, 10 lks. wide, course W.
54.14	Wash, 10 lks. wide, course SW. Asc. 130 ft.
69.69	Desc.
72.29	Draw, course SE. Asc. 190 ft.
77.57	Spur, slopes SE. Desc.
79.17	Gulch, course SE. Asc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 2 ins. in the ground, in a mound of stone, for cor. of secs. 19, 24, 25 and 30, marked on brass cap

```
              T 27 N
         R 12 W | R 11 W
           S 24 | S 19
           S 25 | S 30
              1920
```

From which
A cedar, 8 ins. diam., brs. S. 71° E., 343 lks.
dist., marked T 27 N R 11 W S 30 B T.
A cedar, 12 ins. diam., brs. N. 75¼° W., 146 lks.
dist., marked T 27 N R 12 W S 24 B T.
No other trees within limits. Raise a mound of stone, 2
ft. base, 1½ ft. high, W. of cor.
Land, mountainous and level.
Soil, gravelly loam, 3rd and 4th rates.
Timber, cedar and pinyon.
Undergrowth, sagebrush and quinine brush.

North, bet. secs. 19 and 24.
Over broken land, through scattering undergrowth.
Asc. 150 ft.

9.73	Spur, slopes SW. Desc. 90 ft.
17.32	Head of draw, course E. Asc. 25 ft.
26.60	Spur, slopes NE. and spur slopes NW. Desc. 120 ft.
29.52	Draw, course NW. Continue descent.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

```
            ¼
     S 24  |  S 19
         1920
```

Continue descent.

44.80	Draw, course SW. Asc. 110 ft.
51.80	Ridge, brs. NE. and SW. Desc. 115 ft.
65.80	Draw, course NE. Asc. 65 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 24 ins. in the ground, for cor. of secs. 13, 18, 19 and 24, marked on brass cap

```
              T 27 N
         R 12 W | R 11 W
           S 13 | S 18
           S 24 | S 19
              1920
```

And raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor.
Land, broken and mountainous.
Soil, rocky, 3rd and 4th rates.
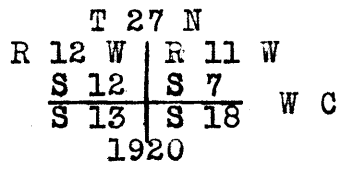No timber.
Undergrowth, sagebrush and cactus.

Chains	
	North, bet. secs. 13 and 18.
	Over mountainous land, through scattering undergrowth. Asc. 40 ft.
7.50	Spur, slopes NE. Desc. 170 ft.
22.00	Center of canyon, 12 chs. wide, course E. Asc. 165 ft.
32.00	Desc.
38.00	Draw, course SE. Asc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 24 ins. in the ground, for ¼ sec. cor., marked on brass cap

S 13 | S 18
1920
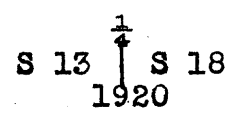
And raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.
Continue ascent, 100 ft.

47.50	Spur, slopes SE. Desc. 35 ft.
50.00	Draw, course E. Asc. 60 ft.
55.00	Spur, slopes NE. Desc. 135 ft.
62.80	Draw, course E. Asc.
63.30	Top of cliff, brs. NW. and SE. Impracticable to measure on line from this point. Offset West 1.46 chs., and continue North on offset line through sec. 13, ascending 75 ft.
75.26	At this point, offset West 1.54 chs., and continue North on offset line, 3 chs. West of sec. line.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with cross (X) at exact cor. point, for witness cor. to cor. of secs. 7, 12, 13 and 18; and raise a mound of stone around post, with brass cap marked

T 27 N
R 12 W | R 11 W
S 12 | S 7
S 13 | S 18   W C
1920

Land, mountainous.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush and cactus.

A deep canyon draining into the Colorado River prevents the survey of the rest of the East Boundary of T. 27 N., R. 12 W.

<div align="center">

Survey of the West Boundary
of T. 27 N., R. 12 W.

</div>

Chains	
	From the cor. of Ts. 26 and 27 N., R. 12 W., described in Book "E",
	North, along the W. bdy. of sec. 31.
	Over rolling mountainous land, through scattering undergrowth.
	Desc. 60 ft.
7.76	The cor. of Ts. 26 and 27 N., R. 13 W., described in Book "D".
14.93	Draw, course NE. Asc. 30 ft.
20.91	Spur, slopes NE. Desc. 75 ft.
24.86	Draw, course NE. Asc.
36.83	Spur, slopes NE. Desc. 20 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground with marked (X) stone, for $\frac{1}{4}$ sec. cor. of sec. 31, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

<div align="center">

$\frac{1}{4}$ S 31

1920

</div>

41.65	Gulch, 10 lks. wide, course NE. Continue descent.
47.76	(40.00 chs. North of the cor. of Ts. 26 and 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, for $\frac{1}{4}$ sec. cor. of sec. 36, T. 27 N., R. 13 W., marked on brass cap

<div align="center">

$\frac{1}{4}$ S 36

1920

</div>

	And raise a mound of stone, 2 ft. base, 1$\frac{1}{2}$ ft. high, W. of cor. Continue descent, 160 ft.
66.07	Wash, 20 lks. wide, course NW. Asc. 30 ft.
71.84	Spur, slopes W. Desc. 70 ft.
75.12	Gulch, 10 lks. wide, course W. Asc. 50 ft.
77.72	Spur, slopes NW. Desc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for cor. of secs. 30 and 31, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

<div align="center">

```
            | T 27 N
   T 27 N   | S 30
   R 13 W  -+-------
     S 36   | S 31
            | R 12 W
         1920
```

</div>

	Land, rolling mountainous.
	Soil, gravelly, 3rd rate.
	No timber.
	Undergrowth, sagebrush and cactus.

	North, along the W. bdy. of sec. 30.
	Over rolling land, through scattering undergrowth.
7.76	(80.00 chs. North of the cor. of Ts. 26 and 27 N., R. 13 W.) Set an iron post, 3 ft. long, 2 ins. diam., 15 ins. in the ground, with marked (X) stone, for cor. of secs. 25 and 36, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

<div align="center">

```
   T 27 N  |
     S 25  | T 27 N
   -------- | R 12 W
     S 36  | S 30
   R 13 W  |
        1920
```

</div>

	Desc. 500 ft., over NE. slope.
23.90	Trail, brs. NW. and SE.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 6 ins. in the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor. of sec. 30, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

Survey of the West Boundary
of T. 27 N., R. 12 W.

Chains	
	¼ S 30
	1920
	Continue descent, 65 ft.
42.00	Gulch, course NE.
47.76	(40.00 chs. North of the cor. of secs. 25 and 36, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor. of sec. 25, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

¼ S 25
1920

	Continue descent.
48.30	Gulch, course NW. Asc. 150 ft.
60.00	Desc. 45 ft.
66.30	Gulch, course E. Asc. 55 ft.
77.00	Gulch, course SE. Asc. 65 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 24 ins. in the ground, for cor. of secs. 19 and 30, T. 27 N., R. 12 W., marked on brass cap

```
        T 27 N | T 27 N
        R 13 W | S 19
          S 25 | S 30
               | R 12 W
             1920
```

And raise a mound of stone, 2 ft. base, 1½ ft. high,
E. of cor.
Land, rolling and mountainous.
Soil, gravelly, 3rd rate.
Timber, none.
Undergrowth, sagebrush and cactus.

	North, along the W. bdy. of sec. 19.
	Over mountainous land, through scattering undergrowth.
	Asc. 120 ft.
7.76	(80.00 chs. North of the cor. of secs. 25 and 36, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, marked with cross (X) at exact cor. point, for cor. of secs. 24 and 25, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

```
        T 27 N |
          S 24 | T 27 N
          S 25 | R 12 W
        R 13 W | S 19
             1920
```

	Continue ascent, 615 ft.
37.20	Top of small bench, brs. E. and W.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground, with marked (X) stone, for ¼ sec. cor. of sec. 19, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

¼ S 19
1920

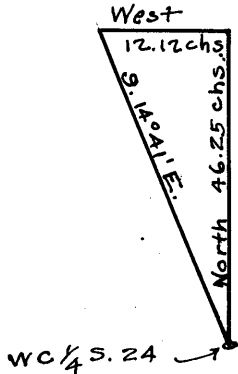|	
44.80	(37.04 chs. North of the cor. of secs. 24 and 25, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in. diam.; 28 ins. in the ground, for witness cor. to ¼ sec. cor. of sec. 24, T. 27 N., R. 13 W., marked on brass cap

Survey of the West Boundary
of T. 27 N., R. 12 W.

Chains	
	W C ¼ S 24 1920

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

44.90 Rim of bench - cliffs br. E. and SW.

47.76 The true point for ¼ sec. cor. of sec. 24, T. 27 N., R. 13 W. falls on inaccessible cliffs. Impossible to chain from the 44.90 ch. point. Set a flag ahead on line, from which I measure a base West 12.12 chs., from the W. end of which, flag at the witness cor. brs. S. 14° 41' E. The three angles of the triangle are therefore 14° 41', 75° 19' and 90°, the sum of which is 180°. The distance triangulated is given by tan. 75° 19' X 12.12 = 3.81630 X 12.12 = 46.25 chs., which added to 44.80 chs. gives 91.05 chs.

I measure South 11.05 chs., to

80.00 Set an iron post, 3 ft. long, 2 ins. diam., 26 ins. in the ground, for cor. of secs. 18 and 19, T. 27 N., R. 12 W., marked on brass cap

T 27 N | T 27 N
R 13 W | S 18
S 24 | S 19
  | R 12 W
1920

And raise a mound of stone, 2 ft. base, 1½ ft. high, E. of cor.
This cor. is 1300 ft. below witness cor.
Land, mountainous.
Soil, rocky, 4th rate.
No timber.
Undergrowth, sagebrush and cactus.

North, along the W. bdy. of sec. 18.
Over mountainous land, through scattering undergrowth.
Desc.

3.55 Gulch, course W. Asc.

7.76 Low spur, slopes W. (80.00 chs. North of the cor. of secs. 24 and 25, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for cor. of secs. 13 and 24, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

T 27 N
S 13 | T 27 N
S 24 | R 12 W
R 13 W | S 18
1920

Desc.

11.05 Gulch, course W. Continue descent.

25.00 Enter Spencer Canyon, course N., from SW.

36.70 Mouth of Hindu Canyon, 2 chs. wide, from SE.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground, with marked (X) stone, for ¼ sec. cor. of sec. 18, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

Survey of the West Boundary
of T. 27 N., R. 12 W.

Chains	
	$\frac{1}{4}$ S 18 1920
47.76	The true point for $\frac{1}{4}$ sec. cor. of sec. 13, T. 27 N., R. 13 W. falls in Spencer Canyon, where it cannot be permanently established.
48.00	Center of Spencer Canyon Wash, 4 chs. wide, course NE. Asc.
50.26	(42.50 chs. North of the cor. of secs. 13 and 24, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, for witness cor. to $\frac{1}{4}$ sec. cor of sec. 13, T. 27 N., R. 13 W.; marked on brass cap

$\frac{1}{4}$ S 13
W | C
1920

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

Thence alone E. slope

53.16	Gulch, course E.
58.76	Gulch, course NE. Asc. 80 ft.
63.05	Spur, slopes E. Desc. 140 ft.
69.74	Gulch, course NE. Asc. 15 ft.
70.72	Spur, slopes E. Set flag for triangulation. Desc. 50 ft.
80.00	Spencer Canyon Wash, course NW. Set an iron post, 3 ft. long, 2 ins. diam., 18 ins. in the ground, with marked (X) stone, for cor. of secs. 7 and 18, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

```
                T 27 N |  T 27 N
                R 13 W |  S  7
                  S 13 | ─S 18
                       |  R 12 W
                     1920
```

Land, mountainous.
Soil, rocky and gravelly, 4th rate.
Timber, none.
Undergrowth, palo verde and cactus.

North, along the W. bdy. of sec. 7.
Across wash.

7.00	Center of Spencer Canyon Wash, course NW., 2 chs. wide. Asc.
7.76	The true point for cor. of secs. 12 and 13 falls in wash, where it cannot be permanently established.
10.00	(82.24 chs. North of the cor. of secs. 13 and 24, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 2 ins. diam., 20 ins. in the ground, with marked (X) stone, for witness cor. to cor. of secs. 12 and 13, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

```
        T 27 N |
         S 12  |  T 27 N
        ─S 13  |  R 12 W
        R 13 W |   S  7
           W C
          1920
```

Thence offset West 10.00 chs., and continue North on offset line. Desc. in wash.

14.00	Leave wash, course NW. Asc. 260 ft.
40.00	Impossible to measure East at this point to the true point for $\frac{1}{4}$ sec. cor. of sec. 7, T. 27 N., R. 12 W. Continue offset line.
45.84	Offset East 6.47 chs. Thence S. 2$\frac{3}{4}$° E., 2.40 chs.

Survey of the West Boundary
of T. 27 N., R. 12 W.

Chains	
	Thence S. 10° E., 2.00 chs.
	S. 32¼° E., 2.00 "
	North .22 "
	East .11 "

To a point 1.88 chs. West of the true point for ¼ sec.
  cor. of sec. 7, T. 27 N., R. 12 W. The true point is
  inaccessible.

40.00 Set an iron post, 3 ft. long, 1 in. diam., 7 ins. in the
  ground, with marked (X) stone, for witness cor. to ¼
  sec. cor. of sec. 7, T. 27 N., R. 12 W.; and raise a
  mound of stone around post, with brass cap marked

| ¼ S 7 W C
  1920

I return to the 45.84 ch. point, on offset line, 10 chs.
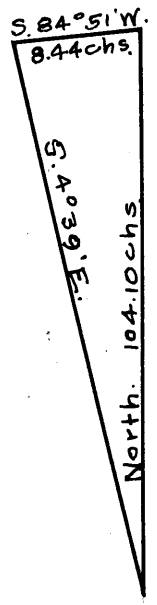 west of sec. line, and traverse as follows:

East 6.47 chs.
N. 12° W. 1.97 "
South   .01 "
East   .20 "   To a point 3.74 chs.
  west of the true point for ¼ sec. cor. of sec. 12, T.
  27 N., R. 13 W.

47.76 (40.00 chs. northing from the cor. of secs. 12 and 13,
  T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in.
  diam., 15 ins. in the ground, with marked (X) stone,
  for witness cor. to ¼ sec. cor. of sec. 12, T. 27 N.,
  R. 13 W.; and raise a mound of stone around post, with
  brass cap marked

¼ S 12 | W C
  1920

Cor. stands at foot of cliff, 20 ft. high, facing W.
From this cor., line ascends out of canyon, over cliffs
  impossible to chain, and the rim of canyon is invis-
  ible. The only way by which this line can be surveyed
  is to find a point on the north rim of canyon, on the range
  line, and triangulate back to some point in the canyon.
  For this purpose, the flag set at 70.72 chs. on the
  W. bdy. of sec. 18 is most suitable. Determine such
  a point on the N. rim of can-
  yon, and measure a base S.
  84° 51' W., 8.44 chs. - no
  longer can be obtained - from
  the W. end of which, flag at
  the 70.72 ch. point on the
  W. bdy. of sec. 18 brs. S. 4°
  39' E. The three angles of
  the triangle are 4° 39', 90°
  30' and 84° 51', the sum of
  which is 180°. The distance
  triangulated is given by the
  sine proportion:

$$\frac{X}{8.44} \quad \frac{\sin. 90° 30'}{\sin. 4° 39'}$$

log. 8.44 =   0.926342
log. sin. 90° 30' = 9.999983
         0.926325
log. sin 4° 39' = 8.908853
     log. X   = 2.017472
       X   = 104.10 chs.

which added to 70.72 chs., gives 174.82 chs., or 14.82 chs.
North of the point for cor. of secs. 6 and 7.

S. 84° 51' W.
8.44 chs.

S. 4° 39' E.

North 104.10 chs.

Survey of the West Boundary
of T. 27 N., R. 12 W.

Chains	
	To establish a witness cor. to cor. of secs. 6 and 7, T. 27 N., R. 12 W., I traverse as follows from triangulation point

S. 8° 32' E.   14.83 chs.
South   .15 "   To a point on rim of canyon, 2.20 chs. East of the true point for cor. of secs. 6 and 7, which falls on perpendicular cliff, about 2000 ft. high.

At this point, set an iron post, 3 ft. long, 2 ins. diam., 14 ins. in the ground, with marked (X) stone, for witness cor. to cor. of secs. 6 and 7, T. 27 N., R. 12 W.; and raise a mound of stone around post, with brass cap marked

```
              | T 27 N
    T 27 N    | S 6
    R 13 W    |------  W C
      S 12    | S 7
              | R 12 W
           1920
```

Land, mountainous.
Soil, rocky, 4th rate.
No timber.
Undergrowth, cactus.

From the witness cor. to cor. of secs. 6 and 7, T. 27 N., R. 12 W., 2.20 chs. East of the true point for said cor.
North, on offset line, through sec. 6.
Over rolling land, through scattering undergrowth.

5.48	(77.72 chs. North of the true point for cor. of secs. 12 and 13, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 2 ins. diam., 10 ins. in the ground, with marked (X) stone, for witness cor. to cor. of secs. 1 and 12, T. 27 N., R. 13 W.; and raise a mound of stone around post, with brass cap marked

```
          T 27 N  |
            S 1   | T 27 N
    W C   ------- | R 12 W
           S 12   |   S 6
          R 13 W  |
           1920
```

From this witness cor., the true point for cor. of secs. 1 and 12, T. 27 N., R. 13 W. brs. N. 43° 59' W., 3.17 chs. dist. This point falls on perpendicular cliff, 2000 ft. high.
From the witness cor. to cor. of secs. 1 and 12, T. 27 N., R. 13 W.,

N. 13° 28' W.,   9.44 chs., to a point on the sec. line, 14.66 chs. N. of the true point for cor. of secs. 6 and 7, T. 27 N., R. 12 W.

14.66	Thence North along the W. bdy. of sec. 6. Over heavily rolling land, through scattering undergrowth. Asc.30 ft.
20.20	Spur, slopes SW. Desc. 40 ft.
30.00	Draw, course SW. Asc. 75 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 15 ins. in the ground, for ¼ sec. cor. of sec. 6, T. 27 N., R. 12 W., with marked (X) stone; and raise a mound of stone around post, with brass cap marked

```
        | ¼ S 6
         1920
```

Asc. 20 ft.

47.76	(40.00 chs. North of the true point for cor. of secs. 1 and 12, T. 27 N., R. 13 W.) Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the ground, on bed rock, with marked (X) stone, for ¼ sec. cor. of sec. 1, T. 27 N., R. 13 W., and raise a mound of stone around post, with brass cap marked

Survey of the West Boundary
of T. 27 N., R. 12 W.

.Chains	
	¼ S 1
	1920

Asc. 30 ft., over S. slope.

53.05 | Spur, slopes SW. Desc. 90 ft., over N. slope.

80.00 | Set an iron post, 3 ft. long, 3 ins. diam., 15 ins. in the ground, in a mound of stone, with marked (X) stone for cor. of Ts. 27 and 28 N., R. 12 W., marked on brass cap

```
                          |  T 28 N
                          |  R 12 W
                  T 27 N  |  S 31
                  R 13 W  _____
                          |  S 6
                    S 1   |  T 27 N
                       1920
```

From which

A cedar, 6 ins. diam., brs. S. 62½° W., 73 lks. dist., marked T 28 N R 13 W S 1 B T.

No other trees within limits.

Land, heavily rolling.

Soil, gravelly and sandy loam, 3rd and 4th rates.

No timber.

Undergrowth, sagebrush and cactus.

Survey of Part of the
North Boundary of T. 27 N., R. 12 W.

Chains	
	From the cor. of Ts. 27 and 28 N., R. 12 W., hereinbefore described.
	East, on a true line, bet. secs. 6 and 31.
	Over rolling land, through scattering undergrowth.
26.48	Draw, course N.
38.87	Head of draw, course N.
58.37	Draw, course N. Enter scattering timber.
76.88	(The point for establishment of this cor. is determined from the controlling distance on the S. Bdy. less the convergency.) Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4} \, \frac{\text{S 31}}{\text{S 6}}$$
1920

From which
A cedar, 8 ins. diam., brs. N. 6° E., 234 lks. dist., marked ¼ S 31 B T.
A cedar, 12 ins. diam., brs. S. 63° W., 342 lks. dist., marked ¼ S 6 B T.

81.88	Draw, course NW. Asc. 80 ft., over W. slope.
93.38	Spur, slopes SE. Desc. 55 ft., over SE. slope.
106.88	Draw, course SE. Asc. 40 ft., over SW. slope.
113.18	Spur, slopes S. Desc. 35 ft.
116.88	Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, for cor. of secs. 5, 6, 31 and 32, marked on brass cap

T 28 N   R 12 W
$$\frac{\text{S 31} \mid \text{S 32}}{\text{S 6} \mid \text{S 5}}$$
T 27 N
1920

From which
A cedar, 10 ins. diam., brs. N. 25¼° E., 78 lks. dist., marked T 28 N R 12 W S 32 B T.
A cedar, 12 ins. diam., brs. S. 67½° E., 82 lks. dist., marked T 27 N R 12 W S 5 B T.
A cedar, 14 ins. diam., brs. S. 47¼° W., 190 lks. dist., marked T 27 N R 12 W S 6 B T.
A cedar, 12 ins. diam., brs. N. 42° W., 124 lks. dist., marked T 28 N R 12 W S 31 B T.

Land, rolling.
Soil, sandy and gravelly, 3rd rate.
Timber, scattering cedar.
Undergrowth, sagebrush, yucca and cactus.
Fair grass.

	East, on a true line, bet. secs. 5 and 32.
	Over heavily rolling land, through scattering timber and undergrowth. Desc.
2.70	Draw, course SW. Asc. 65 ft.
13.00	Spur, slopes S. Desc. 45 ft.
17.80	Draw, course SW. Asc. 45 ft.
23.00	Spur, slopes S. Desc. 15 ft.
35.00	Draw, course SW. Asc. 10 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock with marked (X) stone, for ¼ sec. cor.; amd raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \, \frac{\text{S 32}}{\text{S 5}}$$
1920

	Continue ascent, 15 ft.
42.80	Spur, slopes S. Desc. 40 ft.
54.60	Draw, course SE. Asc. 50 ft.
59.30	Spur, slopes S. Desc. 45 ft.
64.60	Draw, course S. Asc. 80 ft.
76.70	Spur, slopes SW. Desc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 18 ins. in

Survey of Part of the
North Boundary of T. 27 N., R. 12 W.

Chains	
	the ground, in a mound of stone, with marked (X) stone for cor. of secs. 4, 5, 32 and 33, marked on brass cap,

T 28 N   R 12 W
S 32 | S 33
S 5 | S 4
T 27 N
1920

From which

A cedar, 14 ins. diam., brs. S. 32¼° W., 92 lks. dist., marked T 27 N R 12 W S 5 B T.

A cedar, 12 ins. diam., brs. N. 48½° W., 115 lks. dist., marked T 28 N R 12 W S 32 B T.

No other trees within limits.
Land, heavily rolling.
Soil, gravelly, 3rd and 4th rates.
Timber, cedar.
Undergrowth, sagebrush and cactus.

East, on a true line, bet. secs. 4 and 33.
Over rolling land, through scattering undergrowth.

5.50	Draw, course S. Asc. 15 ft.
11.00	Spur, slopes S. Desc. 25 ft., over NE. slope.
36.00	Cliff, 40 ft. high, brs. N. and S. Desc. 190 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor., and raise a mound of stone around post, with brass cap marked

¼ S 33
S 4
1920

As the edge of an impassable canyon occurs at 62.26 chs., it is impossible to set a witness cor. to cor. of secs. 3, 4, 33 and 34 within 10 chs. of the true point; I therefore discontinue the survey of this sectional boundary at this point.
Land, rolling.
Soil, sandy and gravelly loam, 2nd and 4th rates.
No timber.
Undergrowth, sagebrush and cactus.
Fair grass.

At the point for ¼ sec. cor. of secs. 3 and 34, on the N. bdy. of sec. 3, T. 27 N., R. 12 W., which point is determined by traverse through sec. 3, from the section line bet. secs. 3 and 4, as hereinafter described

Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground, with marked (X) stone, for ¼ sec. cor. of secs. 3 and 34; and raise a mound of stone around post, with brass cap marked

¼ S 34
S 3
1920

Thence
East, on a true line, bet. secs. 3 and 34.
Over rolling mountainous land, through scattering undergrowth.   Asc.

1.00	Spur, slopes NE. Desc. 125 ft.
5.54	Gulch, course N. Asc. 200 ft.
20.65	Spur, slopes NE. Desc. 180 ft.

Survey of Part of the
North Boundary of T. 27 N., R. 12 W.

Chains	
34.84	Impassable cliff, brs. NE. and SW. Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, marked cross (X) at exact point, for witness cor. to cor. of secs. 2, 3, 34 and 35; and raise a mound of stone around post, with brass cap marked

<div align="center">

T 28 N   R 12 W

S 34	S 35
S 3	S 2

W C

T 27 N

1920

</div>

From this witness cor., the Colorado River brs. N. $83\frac{1}{4}°$ E., 3 miles distant. For a mile to the east of that point, the course of the river is S. $83\frac{1}{4}°$ W.

Impossible to continue the survey of this boundary beyond this point.

Land, rolling mountainous.

Soil, gravelly and rocky, 4th rate.

Timber, few scattering cedar and pinyon trees.

Undergrowth, sagebrush and cactus.

Survey of the Subdivision (Part)
of T. 27 N., R. 12 W.

Chains	
	From the cor. of secs. 1, 2, 35 and 36, on the S. bdy.of Tp., described in Book "E"
	N. 0° 1' W., bet. secs. 35 and 36.
	Over rolling land, through scattering timber and under-growth. Asc. 25 ft.
10.00	Spur, slopes NE. Desc. 25 ft.
22.50	Draw, course NE. Asc.
27.00	Spur, slopes NE. Desc.
33.00	Draw, course E. Asc.
40.00	Low ridge, brs. NE. and SW. Set an iron post, 3 ft. long, 1 in. diam., 5 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

$$\frac{1}{4}$$
S 35 | **S 36**
1920

	From which
	A cedar, 10 ins. diam., brs. N. $39\frac{1}{4}°$ E., 68 lks. dist., marked $\frac{1}{4}$ S 36 B T.
	A cedar, 10 ins. diam., brs. S. $38\frac{3}{4}°$ W., 75 lks. dist., marked $\frac{1}{4}$ S 35 B T.
	Desc. 90 ft.
50.00	Draw, course NE. Asc. 35 ft.
55.00	Spur, slopes NE. Desc.
56.50	Canyon, 3 chs. wide, 100 ft. deep, course NW.
61.50	Spur, slopes W. Desc. 75 ft.
67.00	Draw, course SW. Asc. 35 ft.
70.50	Spur, slopes SW. Desc. 110 ft.
80.00	Draw, course NE. Set an iron post, 3 ft. long, 2 ins. diam., 16 ins. in the ground, with marked (X) stone, for cor. of secs. 25, 26, 35 and 36; and raise a mound of stone around post, with brass cap marked

T 27 N   R 12 W
S 26 | **S 25**
S 35 | **S 36**
1920

Land, rolling.
Soil, gravelly, 3rd rate.
Timber, scattering cedar.
Undergrowth, sagebrush and cactus.

	N. 89° 57' E., on a random line, bet. secs. 25 and 36.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
80.20	Fall 9 lks. S. of the cor. of secs. 25, 30, 31 and 36, on the E. bdy. of Tp., hereinbefore described.
	Thence
	S. 89° 53' W. on a true line, bet. secs. 25 and 36.
	Over rolling land, through scattering timber and under-growth. Asc.
1.00	Spur, slopes N. Desc. 45 ft.
4.94	Head of draw, course N. Thrnce over level land.
6.46	Draw, course N.
14.60	Gulch, 10 lks. wide, course NE. Asc. 145 ft.
19.56	Spur, slopes N. Desc. 95 ft.
24.59	Draw, 10 lks. wide, course NW. Asc.
30.00	Desc. 185 ft.
40.10	Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor.; marked on brass cap

$$\frac{1}{4}\frac{\text{S 25}}{\text{S 36}}$$
1920

From which

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	A pinyon, 8 ins. diam., brs. N. 78° W., 153 lks. dist., marked $\frac{1}{4}$ S 25 B T.
	A pinyon, ( ) ins. diam., brs. S. 35° E., 276 lks. dist., marked $\frac{1}{4}$ S 36 B T.
	Continue descent.
42.20	Draw, course N. Asc. 230 ft.
54.20	Spur, slopes NE. Desc. 290 ft., over NW. slope.
70.20	Draw, course N. Asc. 80 ft.
72.70	Spur, slopes N. Desc. 90 ft.
80.20	The cor. of secs. 25, 26, 35 and 36.
	Land, rolling and mountainous.
	Soil, gravelly, 3rd rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

	N. 0° 1' W., bet. secs. 25 and 26.
	Over rolling and mountainous land, through scattering undergrowth. Asc. 40 ft.
6.00	Spur, slopes NE. Desc. 40 ft.
10.00	Draw, course NE. Asc. 250 ft.
16.00	Rock cliff, 50 ft., high, brs. NE. and SW. Continue ascent.
26.50	Spur, slopes NE. Desc. over NW. slope, 350 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4}$$
$$\text{S 26} \mid \text{S 25}$$
$$1920$$

	Continue descent, 80 ft.
46.00	Draw, course NE. Thence over rolling land.
59.30	Same wash, course NW.
77.60	Wash, 10 lks. wide, course W.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 20 ins. in the ground, with marked (X) stone, for cor. of secs. 23, 24, 25 and 26; and raise a mound of stone around post, with brass cap marked

$$\text{T 27 N} \quad \text{R 12 W}$$
$$\text{S 23} \mid \text{S 24}$$
$$\text{S 26} \mid \text{S 25}$$
$$1920$$

	Land, mountainous and rolling.
	Soil, rocky, 3rd and 4th rates.
	No timber.
	Undergrowth, sagebrush and cactus.

	N. 89° 55' E., on a random line, bet. secs. 24 and 25.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
79.94	Fall 9 lks. N. of the cor. of secs. 19, 24, 25 and 30, on the E. bdy. of Tp., hereinbefore described. Thence S. 89° 57' W., on a true line, bet. secs. 24 and 25.
	Over mountainous land, through scattering undergrowth and timber. Asc. 140 ft.
6.66	Spur, slopes SW. Desc. 530 ft.
23.63	Draw, course SW. Continue descent.
38.49	Wash, 15 lks. wide, course S. Asc.
39.97	Set an iron post, 3 ft. long, 1 in diam., 8 ins. in the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \frac{\text{S 24}}{\text{S 25}}$$
$$1920$$

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	Asc. 20 ft.
41.98	Spur, slopes SW. Desc. 50 ft.
45.64	Wash, 10 lks. wide, course SW. Asc.
59.89	Spur, slopes SW. Desc. 55 ft.
72.35	Wash, 10 lks. wide, course SW. Thence over rolling land.
79.94	The cor. of secs. 23, 24, 25 and 26.
	Land, mountainous and rolling.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, sagebrush and cat claw.

N. 0° 1' W., bet. secs. 23 and 24. Over mountainous land, through scattering undergrowth. Asc. 460 ft.

26.10	Rock cliff, 80 ft. high, brs. NE. and SW. Continue ascent.
26.60	Spur, slopes SW. Desc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with cross (X) at exact cor. point; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4}$$

S 23 | S 24
1920

Continue descent, 25 ft.

45.00	Draw, course SW. Asc. 225 ft., over SE. slope.
65.00	Spur, slopes SE. Desc. 25 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 6 ins. in the ground, with marked (X) stone for cor. of secs. 13, 14, 23 and 24; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W
S 14 | S 13
S 23 | S 24
1920

Land, mountainous.
Soil, rocky, 3rd and 4th rate.
No timber.
Undergrowth, sagebrush and catclaw.

N. 89° 57' E., on a random line, bet. secs. 13 and 24.

40.00	Set temp. ¼ sec. cor.
79.92	Fall 12 lks. S. of the cor. of secs. 13, 18, 19 and 24, on the E. bdy. of Tp., hereinbefore described. Thence S. 89° 52' W., on a true line bet. secs. 13 and 24.
	Over rolling and mountainous land, through scattering timber and undergrowth. Asc. 70 ft.
12.90	Spur, slopes SE. Desc. 130 ft.
28.90	Draw, course SW. Asc. 65 ft.
34.90	Spur, slopes S. Desc. 85 ft.
39.96	Set an iron post, 3 ft. long, 1 in. diam., on bed rock in a mound of stone, for ¼ sec. cor., marked on brass cap

¼ $\frac{S\ 13}{S\ 24}$
1920

From which
A cedar, 6 ins. diam., brs. N. 80½° E., 87 lks. dist., marked ¼ S 13 B T.
A cedar, 8 ins. diam., brs. S. 21° E., 180 lks. dist., marked ¼ S 24 B T.
Continue descent.

43.90	Draw, course SE. Asc. 90 ft.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
48.90	Spur, slopes SE. Desc. 70 ft.
56.40	Draw, course S. Asc. 145 ft.
74.90	Spur, slopes SW. Desc. 30 ft.
79.92	The cor. of secs. 13, 14, 23 and 24.

Land, rolling and mountainous.
Soil, rocky, 3rd and 4th rates.
Timber, scattering cedar.
Undergrowth, sagebrush and cactus.

N. 0° 1' W., bet. secs. 13 and 14.
Over rolling land, through scattering undergrowth.
Desc. 80 ft.

4.85	Head of draw, course NW. Asc. 25 ft.
11.34	Spur, slopes W. Desc.
15.41	Head of gulch, course SW. Asc. 105 ft.
24.67	Head of gulch, course SW. Continue ascent.
31.66	Spur, slopes SW. Desc. 105 ft.
37.45	Head of gulch, course NW. Thence along E. slope.
39.21	Head of gulch, course SW. Asc. 20 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\begin{array}{c|c} & \frac{1}{4} \\ \text{S 14} & \text{S 13} \\ \hline & 1920 \end{array}$$
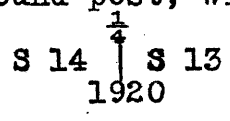
Asc. 70 ft.

42.87	Spur, slopes W. Desc. 70 ft.
57.07	Gulch, 10 lks. wide, course SW. Asc.
59.85	Spur, slopes SW. Desc.
69.64	Gulch, course SW. Asc. 55 ft.
80.00	Spur, slopes SW. Set an iron post, 3 ft. long, 2 ins. diam., 18 ins. in the ground, with marked (X) stone, for cor. of secs. 11, 12, 13 and 14; and raise a mound of stone around post, with brass cap marked
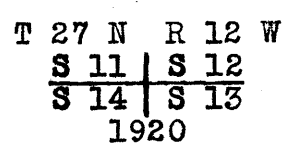
$$\begin{array}{c|c} \text{T 27 N} & \text{R 12 W} \\ \text{S 11} & \text{S 12} \\ \hline \text{S 14} & \text{S 13} \\ & 1920 \end{array}$$

Land, rolling.
Soil, gravelly loam, 3rd rate.
Timber, none.
Undergrowth, sagebrush and cactus.

N. 89° 52' E., on a random line, bet. secs. 12 and 13.

40.00	Set temp. ¼ sec. cor.
77.02	Fall 26 lks. N. of the witness cor. to cor. of secs. 7, 12, 13 and 18, which is established 3.00 chs. W. of the true point for cor. of secs. 7, 12, 13 and 18, on the E. bdy. of Tp. As the true point for cor. is inaccessible in deep canyon, as hereinbefore described,

N. 89° 57' W. on a true line, bet. secs. 12 and 13, from the witness cor., but giving the distance from the true point. Over rolling land, through scattering undergrowth. Asc. 105 ft.

10.00	Spur, slopes SE. Desc.
17.15	Draw, course SE. Asc. gradually.
22.55	Low ridge, brs. N. and S. Desc. 40 ft.
33.25	Head of draw, course SE. Asc. 25 ft.
40.01	Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	$\frac{1}{4}$ $\dfrac{\text{S 12}}{\text{S 13}}$
	1920
	Thence over nearly level land.
47.10	Desc. 105 ft.
69.55	Wash, course SW. Asc.
80.02	The cor. of secs. 11, 12, 13 and 14.
	Land, rolling and nearly level.
	Soil, rocky and gravelly loam, 3rd and 4th rates.
	Timber, none.
	Undergrowth, sagebrush and cactus.

N. 0° 1' W., bet. secs. 11 and 12.
Over rolling land, through scattering undergrowth.
Desc. 20 ft.

5.00	Head of draw, course SW. Asc. 65 ft.
11.43	Spur, slopes SW. Thence over gently rolling land.
23.43	Low spur, slopes SW. Desc. 55 ft.
31.07	Draw, course SW. Asc. gradually, 30 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$\frac{1}{4}$

S 11 | S 12
1920

Continue ascent, 220 ft.

60.38	Spur, slopes W. Desc. 160 ft.
69.05	Head of gulch, course NW. Asc. 40 ft.
76.00	Desc. 50 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 12 ins. in the ground, with marked (X) stone, for cor. of secs. 1, 2, 11 and 12; and raise a mound of stone around post, with brass cap marked

T 27 N   R 12 W
$\dfrac{\text{S 2} \mid \text{S 1}}{\text{S 11} \mid \text{S 12}}$
1920

Land, rolling and gently rolling.
Soil, gravelly and rocky, 4th rate.
No timber.
Undergrowth, sagebrush and cactus.

S. 89° 57' E. on a true line, bet. secs. 1 and 12.
Over broken mountainous land, through scattering undergrowth.

0.45	Cliff, 30 ft. high, brs. N. and S. Asc. 160 ft.
9.20	Spur, slopes N. Desc. 240 ft.
21.61	Head of wash, course NE. Asc. 75 ft.
30.50	Spur, slopes NW. Desc. 210 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$\frac{1}{4}$ $\dfrac{\text{S 1}}{\text{S 12}}$
1920

|	
42.35	Rim of canyon, brs. NW. and SE. Impossible to continue farther on this line.
	Land, broken mountainous.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

| Chains	
	Soil, gravelly loam, rocky; 4th rate. Timber, none. Undergrowth, black brush, sagebrush and cactus.
	An impassable canyon occurs at 24.35 chs. North bet. secs. 1 and 2, which prevents the survey of this mile and the setting of any witness cor. within 10.00 chs. of the true point for ¼ sec. cor. on this sec. line.
	From the cor. of secs. 2, 3, 34 and 35, on the S. bdy. of the Tp., described in Book "E", N. 0° 1' W., bet. secs. 34 and 35. Over level land, through scattering timber and undergrowth.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground, in a mound of stone, with marked (X) stone, for ¼ sec. cor. marked on brass cap,

$$S\ 34\ \overset{\frac{1}{4}}{|}\ S\ 35$$
$$1920$$
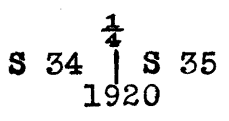
From which
      A cedar, 8 ins. diam., brs. S. 62¾° W., 475 lks.
          dist., marked ¼ S 34 B T.
      No other trees within limits.

| 73.20 | Four wire fence, brs. N. 27½° W. and S. 27½° E. |
| 80.00 | Set an iron post, 3 ft. long, 2 ins. diam., 16 ins. in the ground, in a mound of stone, for cor. of secs. 26, 27, 34 and 35, marked on brass cap |

$$\begin{array}{c} T\ 27\ N\ \quad R\ 12\ W \\ \underline{S\ 27\ |\ S\ 26} \\ S\ 34\ |\ S\ 35 \\ 1920 \end{array}$$
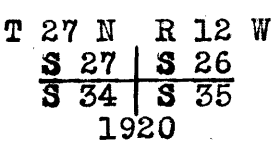
From which
      A cedar, 10 ins. diam., brs. N. 21° E., 547 lks.
          dist., marked T 27 N R 12 W S 26 B T.
      A cedar, 6 ins. diam., brs. S. 73½° E., 376 lks.
          dist., marked B T.
      A cedar, 10 ins. diam., brs. S. 53° W., 322 lks.
          dist., marked T 27 N R 12 W S 34 B T.
      A cedar, 10 ins. diam., brs. N. 81¾° W., 457 lks.
          dist., marked B T.

Land, level.
Soil, gravelly, 3rd rate.
Timber, cedar.
Undergrowth, sagebrush and cactus.

	N. 89° 57' E., on a random line, bet. secs. 26 and 35.
40.00	Set temp. ¼ sec. cor.
79.80	Intersect N. and S. line, 23 lks. S. of the cor. of secs. 25, 26, 35 and 36. Thence S. 89° 47' W., on a true line, bet. secs. 26 and 35. Over mountainous land, through scattering undergrowth. Asc. 25 ft.
2.00	Divide, brs. N. and S. Desc. 35 ft., over NW. slope.
5.00	Draw, course N. Asc. 85 ft., over NE. slope.
8.00	Spur, slopes N. Desc. 125 ft.
10.00	Cliff, 50 ft. high, brs. NE. and SW. Continue descent.
15.00	Draw, course N. Asc. 290 ft.
18.00	Draw, course NE. Continue ascent.
34.00	Spur, slopes S. Desc. 30 ft.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
39.90	Set an iron post, 3 ft. long, 1 in. diam., 24 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4} \quad \frac{S\ 26}{S\ 35}$$
$$1920$$

From which

A cedar, 24 ins. diam., brs. S.___ E., 207 lks.
dist., marked ¼ S 35 B T.
No other trees within limits. Raise a mound of
stone, 2 ft. base, 1½ ft. high, N. of cor.

	Asc. 220 ft.
54.95	Spur, slopes E. Desc.
59.95	Head of gulch, course NE. Asc. 60 ft.
63.85	Spur, slopes N. Desc. 30 ft.
68.55	Head of draw, course N. Asc. 40 ft.
72.80	Spur, slopes N. Desc.
79.80	The cor. of secs. 26, 27, 34 and 35.
	Land, rolling and mountainous.
	Soil, gravelly loam, 3rd rate.
	Timber, very few scattering cedar trees.
	Undergrowth, sagebrush, black brush and cactus.

	N. 0° 1' W., bet. secs. 26 and 27.
	Over level land, through scattering undergrowth.
5.00	Desc. N. slope, on spur, slopes N., 355 ft.
17.91	Leave spur, slopes NE. Continue descent.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 14 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$S\ 27 \overset{\frac{1}{4}}{\mid} S\ 26$$
$$1920$$

	Continue descent.
40.90	Draw, course W. Asc. 130 ft.
46.10	Spur, slopes NW. Desc. 260 ft.
60.48	Draw, course W. Continue descent, 90 ft.
67.18	Wash, 20 lks. wide, course NE. Asc. 225 ft.
79.80	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for witness cor. to cor. of secs. 22, 23, 26 and 27; and raise a mound of stone around post, with brass cap marked

$$\begin{array}{c} W \quad\quad C \\ T\ 27\ N \quad R\ 12\ W \\ \frac{S\ 22 \mid S\ 23}{S\ 27 \mid S\ 26} \\ 1920 \end{array}$$

|	
80.00	The true point for cor. of secs. 22, 23, 26 and 27 falls on cliff, 50 ft. high, brs. NE. and SW.
	Land, level and rolling.
	Soil, gravelly loam, 3rd and 4th rates.
	Timber, none.
	Undergrowth, sagebrush and cactus.

In order to survey the line bet. secs. 23 and 26, I proceed as follows: from a point 1.85 chs. N. 0° 1' W. of the true point for cor. of secs. 22, 23, 26 and 27, which is inaccessible, set a flag ahead on a bearing N. 87° E., and another flag on a bearing N. 0° 20' E. From the last flag I run to the first flag,
S. 53° 48' E., 27.39 chs.,

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

BOOK 3554

Chains	
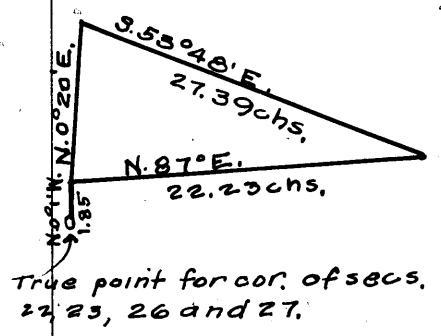
and compute the length of the line on the bearing N. 87° E. from the sine proportion. The three angles of the triangle are 86° 40', 54° 8' and 39° 12', the sum of which is 180°. The distance triangulated is given by

$$\frac{X}{27.39} = \frac{\text{sin. } 54° \ 8'}{\text{sin. } 86° \ 40'}$$

log. 27.39 =	1.437592
log.sin.54°8'=	9.908690
	1.346282
log.sin.86°40' =	9.999265
log. X =	1.347017
X =	22.23 chs.

The latitude and departure of this line are 1.16 chs. N. and 22.20 chs. E., and the total northing from the true point for cor. of secs. 22, 23, 26 and 27, is 1.16 chs. + 1.85 = 3.01 chs.

Thence S. 81° E., 17.83 chs., on traverse line. The latitude and departure of this line are S. 2.79 chs. and E. 17.61 chs., which gives the total easting of 39.81 chs. and a total nothing of .22 chs.

Thence East .19 chs. and South .37 chs., to a point on the random line, 40.00 chs. S. 89° 47' E., of the true point for cor. of secs. 22, 23, 26 and 27, where I set temp ¼ sec. cor.

Thence,
S. 89° 47' E., on a random line, bet. secs. 23 and 26.

| 79.88 | Intersect N. and S. line, 46 lks. S. of the cor. of secs. 23, 24, 25 and 26. |

Thence,
S. 89° 53' W. on a true line, bet. secs. 23 and 26.
Over rolling land, through scattering undergrowth.

2.05	Wash, 10 lks. wide, course NW.
5.00	Same wash, course SW.
16.80	Wash, 30 lks. wide, course NW. Asc. 200 ft.
39.94	Spur, slopes N. Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4} \ \frac{\text{S } 23}{\text{S } 26}$$
1920

And raise a mound of stone, 2 ft. base, 1½ ft. high N. of cor.
Thence by triangulation and traverse, as hereinbefore described, over mountainous land.

| 79.88 | The true point for cor. of secs. 22, 23, 26 and 27, witnessed 0.20 chs. S. 0° 1' E., as hereinbefore described. |

Land, rolling and mountainous.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush, catclaw and cactus.

Because of the mountainous nature of the country, it is impossible to measure directly the section line bet. secs. 22 and 23. I therefore use the triangulation hereinbefore described in the survey of the line bet. secs. 23 and 26, from which I compute the length of the line bearing N. 0° 20' E. from a point N. 0° 1' W., 1.85 chs. from the true point for cor. of secs. 22, 23, 26 and 27.

$$\frac{X}{27.39} = \frac{\text{sin. } 39° \ 12'}{\text{sin. } 86° \ 40'}$$

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	

$$\begin{array}{llr} \log. & 27.39 & = 1.437592 \\ \log. \sin. 39° 12' & = & 9.800737 \\ & & \overline{1.238329} \\ \log. \sin. 86° 40' & = & 9.999265 \\ \log. X & = & \overline{1.239064} \\ X & = & 17.34 \end{array}$$

The total northing of the line from the true point for cor. of secs. 22, 23, 26 and 27 is therefore 17.34 + 1.85 = 19.19 chs. Thence West 10. lks. to true line bet. secs. 22 and 23 and continue

19.19 N. 0° 1' W., bet. secs. 22 and 23.
Over rolling land, through scattering undergrowth.

22.50 Draw, course W., 480. ft. below cor.

31.50 Wash, 15 lks. wide, course S. 80° W. Asc. 80 ft.

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

$$\frac{1}{4}$$

S 22 | S 23

1920
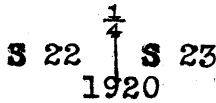
And raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.

40.16 Impracticable to chain from this point. Set a flag ahead on line, and from the 40.16 ch. point, measure a base S. 89° 59' W., 10.97 chs., from the W. end of which, flag brs. N. 44° 22' E. The three angles of the triangle are 45° 37', 44° 23' and 90°, the sum of which is 180°. The distance triangulated is given by tan. 45° 37' X 10.97 = 1.02176 X 10.97= 11.21 chs., which added to 40.16 chs., gives 51.37 chs.
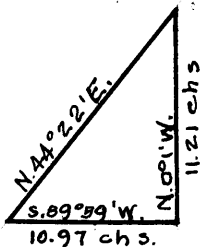
51.37 Top of cliff, 200 ft. high, brs. E. and W. From this point, triangulate again as follows: Set a flag ahead on line, and measure a base N. 89° 59' E. from it 2.49 chs., from the E. end of which, flag at the 51.37 ch. point brs. S. 8° 34' W. The three angles of the triangle are therefore 90°, 81° 25', and 8° 35', the sum of which is 180°. The dist. triangulated is given by tan. 81° 25' X 2.49 = 6.62523 X 2.49 = 16.50 chs., which added to 51.37 chs., gives
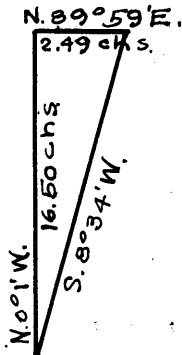
67.87 Continue ascent, 80 ft. Dist. by chaining.

80.00 Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for cor. of secs. 14, 15, 22 and 23; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W

S 15 | S 14
S 22 | S 23

1920
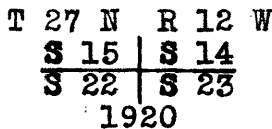
Land, rolling and mountainous.
Soil, rocky and gravelly loam, 4th and 3rd rates.
No timber.
Undergrowth, palo verde and cat claw.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	N. 89° 53' E., on a random line, bet. secs. 14 and 23.
40.00	Set temp. ¼ sec. cor. Impracticable to continue chaining from here. Set flag ahead on random line 30 lks. N. of the cor. of secs. 13, 14, 23 and 24 and return to
35.33	From this point, measure a base N. 0° 7' W., 13.31 chs. – impracticable to secure longer base – from the N. end of which, flag set on line at the cor. of secs. 13, 14, 23 and 24 brs. S. 73° 31' E. The three angles of the triangle are therefore 90°, 73° 24', and 16° 36', the sum of which is 180°. The distance triangulated is given by tan. 73° 24' X 13.31 = 3.3548 X 13.31 = 44.65 chs., which added to 35.33 gives
79.98	Intersect N. and S. line, 30 lks. N. of the cor. of secs. 13, 14, 23 and 24.
	Thence
	N. 89° 54' W., on a true line, bet. secs. 14 and 23. Over mountainous land, through scattering undergrowth, dist. by triangulation.
39.99	The true point for ¼ sec. cor. falls on steep surface rock, where the cor. cannot be established. Cut a cross (X) at the exact corner point.
40.04	Set an iron post, 3 ft. long, 1 in. diam., on bed rock with marked (X) stone, for witness cor. to ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \quad \frac{S\ 14}{S\ 23} \quad W\ C$$
$$1920$$

44.65	Spur, slopes SW. Desc. 105 ft., distance by chaining.
49.40	Gulch, 5 lks. wide, course SW. Asc. 45 ft.
54.90	Spur, slopes SW. Desc. 90 ft.
57.50	Gulch, 10 lks. wide, course S. Asc. 170 ft.
65.40	Spur, slopes SW. Desc. 135 ft., over W. slope.
76.35	Gulch, 10 lks. wide, course SE. Asc. 80 ft.
79.98	The cor. of secs. 14, 15, 22, 23,
	Land, mountainous.
	Soil, rocky, 4th rate.
	Timber, none.
	Undergrowth, scattering palo verde and cactus.

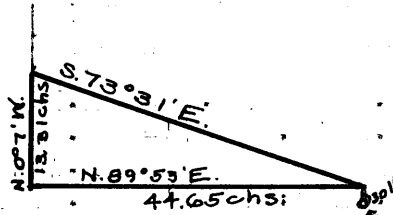|	
	N. 0° 1' W., bet. secs. 14 and 15. Over rolling land, through scattering undergrowth. Asc. 25 ft.
5.15	Desc. 50 ft.
13.30	Head of draw, course SE. Asc. 80 ft.
25.10	Spur, slopes SW. Desc. 30 ft.
36.70	Head of canyon, course SW. Asc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$S\ 15 \ \overset{\frac{1}{4}}{\big|} \ S\ 14$$
$$1920$$

	Continue over rolling land.
51.56	Rim of deep canyon, brs. E. and W., prevents continuation of sec. line. Offset East 2.17 chs., from which point I triangulate as follows:
	Set a flag ahead on rim of canyon, on a bearing N. 1° 39' E.; and from the offset point, measure a base N. 60° 53' E.,

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.
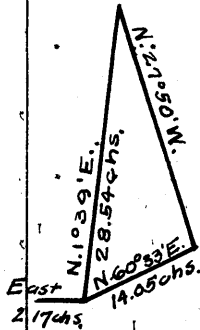
Chains	
	14.05 chs., from the E. end of which, flag brs. N. 27° 50' W. The three angles of the triangle are 58° 54', 29° 29' and 91° 37', the sum of which is 180°. The distance triangulated is given by the sine proportion:

$$\frac{X}{14.05} = \frac{\sin. 91° 37'}{\sin. 29° 29'}$$

log. 14.05=	1.147676
log. sin.91°37'=	9.999827
	1.147503
log. sin.29°29'=	9.692115
log. X =	1.455388
X =	28.54

The northing of the triangulated line is 28.52 chs., and the easting is .82 chs., which because of the bearing of the section line, gives .83 chs. + 2.17 chs., or 3.00 chs. E. of the sec. line. The total northing is 51.56 + 28.52, or 80.08 chs. Measure South .08 chs. and W. .07 chs., to a point 2.93 chs. N. 89° 56' E., of the true point for cor. of secs. 10, 11, 14 and 15, where I

80.00 Set an iron post, 3 ft. long, 2 ins. diam., on bed rock with marked (X) stone, for witness cor. to cor. of secs. 10, 11, 14 and 15; and raise a mound of stone around post, with brass cap marked

```
         T 27 N   R 12 W
       S 10 │ S 11
  W C  ─────┼─────
       S 15 │ S 14
           1920
```

Land, rolling and mountainous,
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush.

From the true point for cor. of secs. 10, 11, 14 and 15,
S. 89° 54' E. on a random line, bet. secs. 11 and 14.

40.00 Set temp. ¼ sec. cor.

80.08 Intersect N. and S. line, 23 lks. S. of the cor. of secs. 11, 12, 13 and 14.
Thence
S. 89° 56' W., on a true line, bet. secs. 11 and 14.
Over rolling land, through scattering undergrowth.
Desc. 40 ft.

13.70 Draw, course W., from NE.

20.00 Leave draw, course NW.

28.30 Same draw, course SW. Asc. very gradual E. slope.

31.98 Spur, slopes S. Desc. 20 ft.

35.97 Draw, course SE. Asc. 55 ft.

40.04 Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

```
     S 11
  ¼ ─────
     S 14
    1920
```

Continue ascent, 20 ft.

42.50 Spur, slopes S. Desc. 115 ft.

74.80 Head of gulch, course SW. Asc. 30 ft.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
77.15	The witness cor. to cor. of secs. 10, 11, 14 and 15, 2.93 chs. N.89°56'E. of true point.
77.21	Top of rocky point, on rim of canyon, 700 ft. deep, brs. N. and S.
80.08	The true point for cor. of secs. 10, 11, 14 and 15, in inaccessible canyon.

Land, rolling and mountainous.
Soil, gravelly, 3rd rate.
No timber.
Undergrowth, sagebrush and catclaw.

In order to survey the line bet. secs. 10 and 11, I determine a point in the canyon, due north of a flag which is set 17.87 chs. S. and 2.67 chs. W. of the true point for cor. of secs. 10, 11, 14 and 15. I measure a base West 5.00 chs. from the W. end of which, flag brs. S. 5° 13' E. The three angles of the triangle are therefore 5° 13', 84° 47' and 90°, the sum of which is 180°. The distance triangulated is given by tan. 84° 47' X 5.00 = 10.9529 X 5.00 = 54.76 chs., or 36.89 chs. North and 2.67 chs. West of the true point for cor. of secs. 10, 11, 14 and 15.
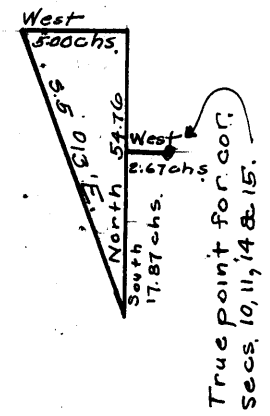
Thence measure North 3.11 chs. and East 2.67 chs. to

| 40.00 | Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked |

$$\frac{1}{4}$$
$$S\ 10\ |\ S\ 11$$
$$1921$$

The approximate topography from the true point for cor. of secs. 10, 11, 14 and 15 is as follows: Desc. 1300 ft.

30.00	Foot of wall of canyon, brs. NE. and SW. Continue descent, 85 ft.
40.00	The ¼ sec. cor. Continue N. 0° 1' W., bet. secs. 10 and 11. Desc. 80 ft., over NW. slope.
50.10	Draw; course W. Continue desc., 120 ft.
54.00	Draw, course NW. Continue descent, 150 ft., over NW. slope.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 12 ins. in the ground, with marked (X) stone, for cor. of secs. 2, 3, 10 and 11; and raise a mound of stone around post, with brass cap marked

$$T\ 27\ N\quad R\ 12\ W$$
$$S\ 3\ |\ S\ 2$$
$$S\ 10\ |\ S\ 11$$
$$1921$$

Land, rough mountainous.
Soil, rocky, 4th rate.
Undergrowth, sagebrush, cactus.
No timber or grass.

A rugged peak on the sec. line bet. secs. 2 and 11 prevents the establishment of the ¼ sec. cor. or a witness cor. within 10 chs. of the true point, and therefore makes the survey of this mile impossible.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	From the cor. of secs. 2, 3, 10 and 11.
	North on random line, bet. secs. 2 and 3.
40.00	Set temp. $\frac{1}{4}$ sec. cor. From this temp. cor., a flag on the N. bdy. of Tp., set 74.92 chs. E. of the cor. of secs. 3, 4, 33 and 34, brs. N. 7° 14' W. From this temp. cor., I measure a base N. 82° 46' E. 10.00 chs., from the E. end of which, the flag on the N. bdy. brs. N. 21° 9' W. The three angles of the triangle are therefore 76° 5', 90° and 13° 55', the sum of which is 180°. The distance triangulated is given by tan. 76° 5' X 10.00 = 4.03578 X 10 = 40.36 chs. The northing of this line is 40.04 chs., and the westing is 5.08 chs. Therefore if the random line were projected to the boundary, the distance would be 80.04 chs., and the line would intersect the true point for cor. of secs. 2, 3, 34 and 35.
	From the true point for cor. of secs. 2, 3, 34 and 35, (inaccessible) south on a true line bet. secs. 2 and 3.
	Over mountainous land, through scattering undergrowth, dist. by triangulation as hereinbefore described.
	Desc. 1065 ft., over impassable cliffs.
40.04	Set an iron post, 3 ft. long, 1 in. diam., on bed rock with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked
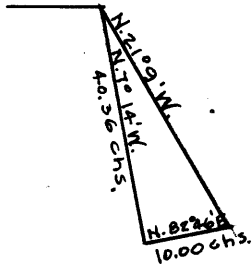
$$S\ 3 \quad \frac{1}{4} \quad S\ 2$$
$$1921$$
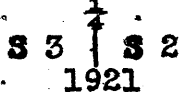
	Continue descent, distance by chaining.
40.25	Wash, 10 lks. wide, course E. Continue descent, 200 ft.
66.75	Main wash, 100 lks. wide, in canyon, course NE. Asc. 125 ft., over N. slope.
80.04	The cor. of secs. 2, 3, 10 and 11.
	Land, rough mountainous.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, cat claw.

	From the cor. of secs. 3, 4, 33 and 34, on the S. bdy. of Tp., described in Book "E"
	N. 0° 2' W., bet. secs. 33 and 34.
	Over rolling land, through scattering timber and undergrowth. Desc.
1.00	Draw, course SW. Asc. 40 ft.
10.00	Low ridge, brs. NE. and SW. Desc. gradual NW. slope.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

$$S\ 33 \quad \frac{1}{4} \quad S\ 34$$
$$1920$$
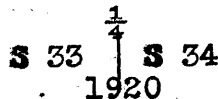
	From which
	A cedar, 10 ins. diam., brs. S. 80$\frac{3°}{4}$ E., 195 lks. dist., marked $\frac{1}{4}$ S 34 B T.
	A cedar, 8 ins. diam., brs. S. 88$\frac{3°}{4}$ W., 152 lks. dist., marked $\frac{1}{4}$ S 33 B T.
	Desc. 50 ft.
56.00	Draw, course NE.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	Continue gradual descent, 45 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 20 ins. in the ground, in a mound of stone, for cor. of secs. 27, 28, 33 and 34, marked on brass cap

$$\begin{array}{c|c} \multicolumn{2}{c}{\text{T 27 N R 12 W}} \\ \text{S 28} & \text{S 27} \\ \hline \text{S 33} & \text{S 34} \\ \multicolumn{2}{c}{1920} \end{array}$$

From which

A cedar, 12 ins. diam., brs. N. $58\frac{1}{4}°$ E., 106 lks. dist., marked T 27 N R 12 W S 27 B T.

A cedar, 18 ins. diam., brs. S. $49\frac{1}{4}°$ E., 87 lks. dist., marked T 27 N R 12 W S 54 B T.

A cedar, 12 ins. diam., brs. S. $33\frac{3}{4}°$ W., 56 lks. dist., marked T 27 N R 12 W S 53 B T.

A cedar, 14 ins. diam., brs. N. 27° W., 100 lks. dist., marked T 27 N R 12 W S 28 B T.

Land, rolling.
Soil, rocky, 4th rate.
Timber, cedar.
Undergrowth, sagebrush and cactus.

	N. 89° 57' E., on a random line, bet. secs. 27 and 34.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
79.94	Intersect the cor. of secs. 26, 27, 34 and 35.
	Thence S. 89° 57' W., on a true line, bet. secs. 27 and 34
	Over rolling land, through scattering undergrowth.
4.02	Four wire fence, brs. N. $27\frac{1}{2}°$ W. and S. $27\frac{1}{2}°$ E. Desc. 90 ft.
19.00	Wash, 20 lks. wide, course NW. Asc. 45 ft.
24.87	Spur, slopes NW. Desc. 30 ft.
34.85	Head of draw, course NW. Asc. through scattering timber.
39.97	Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

$$\frac{1}{4}\;\begin{array}{|c} \text{S 27} \\ \hline \text{S 34} \end{array}$$
$$1920$$

From which

A cedar, 18 ins. diam., brs. N. $71\frac{1}{4}°$ W., 166 lks. dist., marked $\frac{1}{4}$ S 27 B T.

A cedar, 8 ins. diam., brs. S. $29\frac{3}{4}°$ E., 116 lks. dist., marked $\frac{1}{4}$ S 34 B T.

	Asc. 20 ft.
48.00	Spur, slopes NW. Desc. 45 ft.
59.95	Thence over nearly level land.
71.75	Spur, slopes NW. Desc. 35 ft.
76.73	Wash, 10 lks. wide, course NW. Asc.
79.94	The cor. of secs. 27, 28, 33 and 34.
	Land, rolling and nearly level.
	Soil, gravelly, 3rd rate.
	Timber, cedar.
	Undergrowth, sagebrush and quinine brush.
	Good grass.

	N. 0° 2' W., bet. secs. 27 and 28.
	Over rolling land, through scattering timber and undergrowth.
2.00	Wash, course NE.
13.10	Draw, course SE.
20.00	Draw, course SW.
25.50	Draw, course SW.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, in a mound of stone, for $\frac{1}{4}$ sec. cor., marked on brass cap

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	$\frac{1}{4}$
	S 28 | S 27
	1920
	From which
	A cedar, 12 ins. diam., brs. N. 82$\frac{1}{4}$° E., 220 lks. dist., marked $\frac{1}{4}$ S 27 B T.
	A cedar, 8 ins. diam., brs. N. 86° W., 123 lks. dist., marked $\frac{1}{4}$ S 28 B T.
65.00	Head of draw, course NE.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 20 ins. in the ground, with marked (X) stone, for cor. of secs. 21, 22, 27 and 28; and raise a mound of stone around post, with brass cap marked
	T 27 N R 12 W
	S 21 | S 22
	S 28 | S 27
	1920
	Land, rolling.
	Soil, rocky, 4th rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.
	N. 89° 57' E., on a random line, bet. secs. 22 and 27.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
79.98	Intersect N. and S. line, 2 lks. S. of the true point for cor. of secs. 22, 23, 26 and 27, witnessed 0.20 chs. S. 0° 1' E.
	Thence, S. 89° 56' W., on a true line bet. secs. 22 and 27
	Over mountainous land, through scattering undergrowth. Asc. 100 ft.
2.65	Spur, slopes NE. Desc. 455 ft., over cliffs.
36.20	Draw, course N. Asc.
39.99	Gulch, 15 lks. wide, course NE. Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked
	$\frac{1}{4}$ $\frac{S\ 22}{S\ 27}$
	1920
	Continue ascent, 555 ft.
47.97	Foot of cliff, 165 ft. high. Continue ascent.
53.05	Spur, slopes NE. Desc.
68.00	Canyon, course N. Asc. E. slope.
76.33	Spur, slopes NE. Desc.
79.98	The cor. of secs. 21, 22, 27 and 28.
	Land, mountainous.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, quinine brush, sagebrush and cactus.
	N. 0° 2' W., bet. secs. 21 and 22.
	Over mountainous land, through scattering undergrowth. Desc. 680 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with barked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	S 21 $\frac{1}{4}$ S 22
	1920
	Continue descent, 45 ft.
47.55	Wash, 15 lks. wide, course NW. Asc. 40 ft.
60.94	Gulch, 10 lks. wide, course SW. Continue ascent, 325 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for cor. of secs. 15, 16, 21 and 22; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W

S 16	S 15
S 21	S 22

1920

Land, mountainous.
Soil, gravelly loam, 3rd rate.
Timber, none.
Undergrowth, sagebrush.

	N. 89° 56' E., on a random line, bet. secs. 15 and 22.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
80.00	Intersect N. and S. line, 7 lks. S. of the cor. of secs. 14, 15, 22 and 23.
	Thence
	S. 89° 53' W., on a true line, bet. secs. 15 and 22.
	Over mountainous land, through scattering undergrowth. Asc. 25 ft.
1.96	Spur, slopes S. Desc. 65 ft.
8.48	Head of canyon, course S. Asc. 130 ft.
19.74	Spur, slopes SW. Desc. 610 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 8 ins. in the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$\frac{1}{4}$ | S 15
| S 22

1920

	Continue descent, 50 ft.
45.20	Wash, 15 lks. wide, course S. Asc. 175 ft.
55.85	Spur, slopes SW. Desc. 190 ft.
66.20	Wash, 10 lks. wide, course SW. Thence along S. slope.
69.75	Wash, course S.
71.55	Wash, 20 lks. wide, course SW. Asc. 160 ft.
80.00	The cor. of secs. 15, 16, 21 and 22.
	Land, mountainous.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, sagebrush.

	N. 0° 2' W., bet. secs. 15 and 16.
	Over broken mountainous land, through scattering undergrowth. Asc. 55 ft.
4.93	Spur, slopes E. Desc. 65 ft.
8.39	Gulch, course SE. Asc. 345 ft.
12.11	Foot of cliff, 300 ft. high, brs. E. and W. Continue ascent
15.57	Spur, slopes SE. Desc. 175 ft.
31.00	Gulch, 15 lks. wide, course SE. Asc. 215 ft.
37.07	Divide, brs. NE. and W. Desc. 25 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

S 16 $\frac{1}{4}$ S 15
1920

Chains	Asc.
	Asc.
43.11	Spur, slopes NE. Desc. 185 ft.
47.16	Gulch, course E. Asc. 40 ft.
49.75	Spur, slopes E. Thence along E. slope.
57.00	Desc. 25 ft.
63.23	Wash, 10 lks. wide, course SE.
66.23	Head of gulch, course SE. Asc. 65 ft., over S. slope.
75.45	Rim of canyon, brs. E. and W. Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for witness cor. to cor. of secs. 9, 10, 15 and 16; and raise a mound of stone around post, with brass cap marked

<div align="center">

W C

T 27 N   R 12 W

S 9 | S 10

S 16 | S 15

1920

</div>

80.00	The true point for cor. of secs. 9, 10, 15 and 16 falls over brink of canyon.

Land, rough mountainous.
Soil, gravelly and rocky, 3rd and 4th rates.
No timber.
Undergrowth, sagebrush, ocotillo and cactus.

In order to survey the line bet. secs. 10 and 15, which cannot be measured by chaining because it lies in a deep canyon, I run traverse line as follows from the witness cor. to cor. of secs. 9, 10, 15 and 16:

<div align="center">

N. 67° W.	5.00 chs.
N. 34° W.	3.14 "
East	.44 "
South	.01 "

</div>

To a point 5.92 chs. West of the true point for cor. of secs. 9, 10, 15 and 16. I then proceed to the approximate position for the $\frac{1}{4}$ sec. cor. of secs. 10 and 15, from which the flag 5.92 chs. W. of the true point for cor. of secs. 9, 10, 15 and 16, brs. West and the flag 3.93 chs. E. of the true point for cor. of secs. 10, 11, 14 and 15 brs. E.
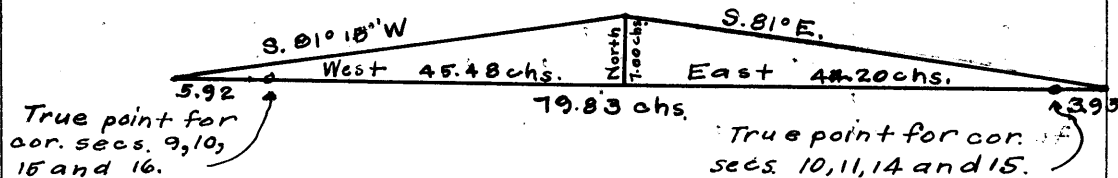
Measure a base North 7.00 chs. - impossible to obtain longer base - from the north end of which, flag 5.92 chs. W. of the true point for cor. of secs. 9, 10, 15 and 16 brs. S. 81° 15' W. and flag 3.93 chs. E. of the true point for cor. of secs. 10, 11, 14 and 15 brs. S. 81° E. In the western triangle, the three angles are 81° 15', 90° and 8° 45', the sum of which is 180°. In the eastern triangle, the three angles are 9°, 90° and 81°, the sum of which is 180°. The distance triangulated to the west is given by tan. 81° 15' X 7.00= 6.49710 X 7.00 = 45.48 chs. The distance triangulated to the east is given by tan. 81° X 7.00 = 6.31375 X 7 = 44.20 chs. The distance between flags is therefore 89.68 chs., and the distance bet. true points for cors. is 79.83. The approximate topography of the mile, from the true point for cor. of

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	secs. 10, 11, 14 and 15 follows:
	West, on a true line, bet. secs. 10 and 15.
	Over rough mountainous land, through heavy undergrowth.
	Desc. 1240 ft., over W. slope.
20.00	Foot of wall, brs. N. and S. Continue descent.
39.91½	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} - \frac{S\ 10}{S\ 15}$$
1921

40.20	Main wash, 70 lks. wide, course N. Asc. 300 ft., over E. slope.
48.00	Spur, slopes N. Desc. 200 ft.
55.00	Wash, 60 lks. wide, course N. 70° E. Asc. 1000 ft., over precipitous walls.
79.83	The true point for cor. of secs. 9, 10, 15 and 16.
	Land, rough mountainous.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, sagebrush, cactus and cat claw.

From the witness cor. to cor. of secs. 9, 10, 15 and 16, 4.55 chs. S. 0° 2' E. of the true point for cor. of secs. 9, 10, 15 and 16, it is impossible to chain; therefore set a flag ahead on line bet. secs. 9 and 10, from which I measure a base S. 89° 58' W., 10.00 chs., from the W. end of which flag at the witness cor. of secs. 9, 10, 15 and 16 brs. S. 18° 39½' E. The three angles of the triangle are therefore 18° 37½', 71° 22½', and 90°, the sum of which is 180°. The distance triangulated is given by tan. 71° 22½' X 10.00 = 2.967 X 10.00 = 29.67 chs., or 25.12 chs. N. 0° 2' W. of the true point for cor. of secs. 9, 10, 15 and 16. The approximate topography follows:
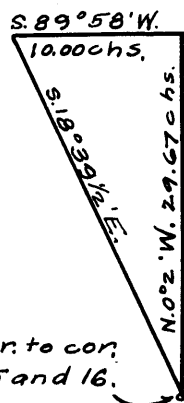
15.00	N. side of canyon wall, brs. E. and W.
20.00	Gulch, course SW. Asc.
25.12	Triangulation point, on spur, slopes SW. Thence over rolling land, dist. by chaining.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$S\ 9 \mid \overset{\frac{1}{4}}{} S\ 10$$
1920

| 50.00	Spur, slopes SE., and spur, slopes SW. Desc. 155 ft.
74.25	Gulch, course SE. Asc. 120 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 20 ins. in ground, with marked (X) stone, for cor. of secs. 3, 4, 9 and 10; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W
$$\frac{S\ 4 \mid S\ 3}{S\ 9 \mid S\ 10}$$
1920

Land, mountainous and rolling.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	Soil, rocky, 4th rate, and gravelly loam, 3rd rate. No timber. Undergrowth, sagebrush and cactus.

The canyon wall at 27.31 chs. going east bet. secs 3 and 10, prevents the establishment of the ¼ sec. cor. of secs. 3 and 10 within 10 chs. of the true point on line, and makes the survey of this mile impossible.

N. 0° 1' W., on a random line, bet. secs. 3 and 4.

40.00	Set temp. ¼ sec. cor.
70.00	At this point, I set temp. witness cor. to cor. of secs. 3, 4, 33 and 34. A flag on the ¼ sec. cor. of secs. 4 and 33, brs. N. 76° 8½' W. Thence I run offset line, East 40.00 chs.,

N. 0° 1' W., 9.90 chs. to a point on the N. bdy. of sec. 3, due E. of the ¼ sec. cor. of secs. 4 and 33. If a line were projected from the 70.00 ch. point on the random line, bet. secs. 3 and 4, to the N. bdy. of Tp., its length would be 9.90 chs., and the three angles of the triangle formed would be 90° 1', 76° 7½', and 13° 51½', the sum of which is 180°. The distance from the ¼ sec. cor. of secs. 4 and 33 along the N. bdy. of Tp. to an intersection with the random line bet. secs. 3 and 4 is found from the sine proportion:
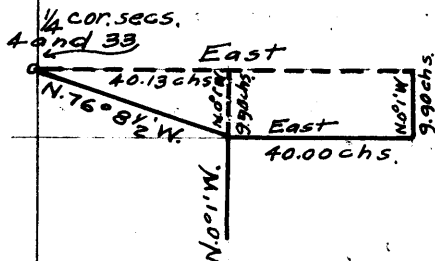
$$\frac{X}{9.90} = \frac{\sin. 76° 7\frac{1}{2}'}{\sin. 13° 51\frac{1}{2}'}$$

$$\log. \quad 9.90 = 0.995635$$
$$\log. \sin. 76° 7\frac{1}{2}' = 9.987140$$
$$\overline{0.982775}$$
$$\log. \sin. 13° 51\frac{1}{2}' = 9.379345$$
$$\log. X = 1.603430$$
$$X = 40.13$$

I move the point on the N. bdy. bet. secs. 3 and 34, 0.13 chs. W.; and establish the ¼ sec. cor. of secs. 3 and 34 as hereinbefore described.

Thence, S. 0° 7' E., on an offset line, through sec. 3. Over mountainous land, through scattering undergrowth.

9.90	Thence West, ascending 45 ft. to
3.07	Spur, slopes N. Desc. 130 ft.
7.00	Gulch, course N. Asc. 140 ft.
10.64	Spur, slopes NE. Desc. 120 ft.
15.19	Draw, course N. Asc. 20 ft.
18.98	Desc. 95 ft.
26.73	Gulch, course N. Asc. 60 ft.
30.13	Desc. 65 ft.
36.17	Gulch, course N. Asc. 75 ft.
40.00	A point on the true line bet. secs. 3 and 4, 9.90 chs. S. 0° 7' E. of the true point for cor. of secs. 3, 4, 33 and 34. Thence N. 0° 7' W., 0.30 chs. to
9.60	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock with marked (X) stone, for witness cor. to cor. of secs. 3, 4, 33 and 34; and raise a mound of stone around post with brass cap marked
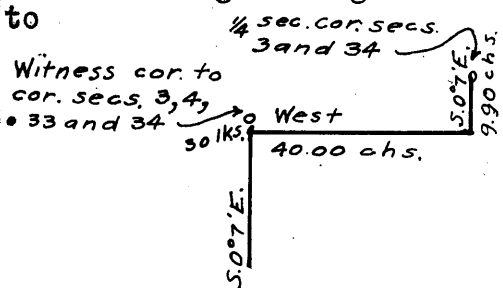
LCCR 3554

Chains	
	W C
	T 28 N R 12 W
	S 33 | S 34
	S 4 | S 3
	T 27 N
	1920
	Cor. falls on rim of deep canyon, brs. NE. and W.
	Thence, S. 0° 7' E., on a true line, bet. secs. 3 and 4.
	Over mountainous land, through scattering undergrowth.
	Asc. 280 ft.
23.20	Thence along W. slope.
30.20	Asc. 45 ft.
32.70	Spur, slopes SW. Desc. 110 ft.
39.90	Set an iron post, 3 ft. long, 1 in. diam., 14 ins. in
	the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.;
	and raise a mound of stone around post, with brass
	cap marked
	$\frac{1}{4}$
	S 4 | S 3
	1920
	Continue descent, 45 ft.
48.30	Head of draw, course E. Asc. 20 ft.
53.50	Spur, course SE. Desc. 100 ft.
59.90	Head of draw, course SE. Asc. 130 ft.
71.55	Spur, slopes E. Desc. 95 ft.
79.90	The cor. of secs. 3, 4, 9 and 10.
	Land, rough mountainous
	Soil, gravelly and rocky, 4th rate.
	No timber.
	Undergrowth, sagebrush.
	From the cor. of secs. 4, 5, 32 and 33, on the S. bdy.
	of Tp., described in Book "E"
	N. 0° 3' W., bet. secs. 32 and 33.
	Over rolling land, through scattering timber and under-
	growth.
25.00	Desc. 70 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the
	ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and
	raise a mound of stone around post, with brass cap
	marked
	$\frac{1}{4}$
	S 32 | S 33
	1920
	From which
	A cedar, 12 ins. diam., brs. N. 72$\frac{3}{4}$° E., 158 lks.
	dist., marked $\frac{1}{4}$ S 33 B T.
	A cedar, 8 ins. diam., brs. N. 59$\frac{3}{4}$° W., 113 lks.
	dist., marked $\frac{1}{4}$ S 32 B T.
	Continue descent, 25 ft.
45.00	Draw, course NW. Asc. 45 ft.
60.00	Spur, slopes NW. Desc.
70.84	Center of canyon, 8 chs. wide, 200 ft. deep. Asc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock,
	with cross (X) at exact cor. point, for cor. of secs.
	28, 29, 32 and 33; and raise a mound of stone around
	post, with brass cap marked
	T 27 N R 12 W
	S 29 | S 28
	S 32 | S 33
	1920
	Land, rolling and mountainous.
	Soil, rocky, 4th rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	N. 89° 57' E., on a random line, bet. secs. 28 and 33.
40.00	Set temp. ¼ sec. cor.
80.00	Intersect N. and S. line, 21 lks. S. of the cor. of secs. 27, 28, 33 and 34.
	Thence, S. 89° 48' W., on a true line, bet. secs. 28 and 33
	Over rolling land, through scattering timber and under-growth. Desc.
2.77	Wash, 10 lks. wide, course NE. Asc. 75 ft.
15.00	Spur, slopes NE. Desc. 30 ft.
40.00	Set an iron post, 3 ft. long, 1 in diam., 24 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4} - \frac{S\ 28}{S\ 33}$$
1920

From which

A cedar, 10 ins. diam., brs. N. 33½° W., 234 lks. dist., marked ¼ S 28 B T.

A cedar, 8 ins. diam., brs. S. 12¼° W., 187 lks. dist., marked ¼ S 33 B T.

	Continue descent, 25 ft.
44.60	Head of draw, course SW. Asc. 25 ft.
50.10	Thence over gently rolling land.
61.37	Desc. 140 ft.
80.00	The cor. of secs. 28, 29, 32 and 33.
	Land, rolling and gently rolling.
	Soil, rocky, 4th rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

	N. 0° 3' W., bet. secs. 28 and 29.
	Over rolling and broken land, through scattering under-growth. Asc. 90 ft.
18.29	Spur, slopes NW. Desc. 100 ft.
27.22	Gulch, 10 lks. wide, course W. Asc. 120 ft.
40.00	Spur, slopes NW. Set an iron post, 3 ft. long, 1 in. diam., 6 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$S\ 29 \overset{\frac{1}{4}}{\mid} S\ 28$$
1920

	Desc. 40 ft.
47.86	Head of draw, course NW. Continue descent, 70 ft.
62.09	Draw, course W. Asc. 55 ft.
68.60	Spur, slopes NW. Desc. 390 ft.
76.13	Cliff, 50 ft. high, brs. E. and W.
79.50	Gulch, 20 lks. wide, course NE. Asc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 6 ins. in the ground, with marked (X) stone, for cor. of secs. 20, 21, 28 and 29; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W
$$\frac{S\ 20 \mid S\ 21}{S\ 29 \mid S\ 28}$$
1920

Land, rolling and mountainous.
Soil, gravelly and rocky, 3rd and 4th rates.
No timber.
Undergrowth, sagebrush and cactus.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	It is impracticable to chain bet. secs. 21 and 28, from the cor. of secs. 20, 21, 28 and 29, I therefore set a flag ahead on line on a bearing N. 89° 48' E., and measure a base from the cor. of secs. 20, 21, 28 and 29, N. 0° 27' W., 20.16 chs., from the N. end of which, flag brs: S. 33° 54' E. The three angles of the triangle are 90° 15', 33° 27', and 56° 18', the sum of which is 180°. The distance triangulated is given from the sine proportion

$$\frac{X}{20.16} = \frac{\sin. 33° 27'}{\sin. 56° 18'}$$

log. 20.16 =	1.304491
log. sin. 33° 27' =	9.741316
	1.045807
log. sin. 56° 18' =	9.920099
log. X =	1.125708
X =	13.36

The Cor. secs. 20, 21, 28 and 29.

13.36	Triangulation point. Impracticable to chain from here. Set a flag ahead on line, from which I measure a base S. 24° 48' W., 10.91 chs., from the S. end of which the flag at the 13.36 ch. point brs. N. 61° 35' W. The three angles of the triangle are 28° 37', 65° and 86° 23', the sum of which is 180°. The distance triangulated is given by the sine proportion:

$$\frac{X}{10.91} = \frac{\sin. 86° 23'}{\sin. 28° 37'}$$

log. 10.91 =	1.037825
log. sin. 86° 23' =	9.999134
	1.036959
log. sin. 28° 37' =	9.680288
log. X =	1.356671
X =	22.73 which, added to 13.36 chs., gives

N.89°48'E. 22.73 chs.
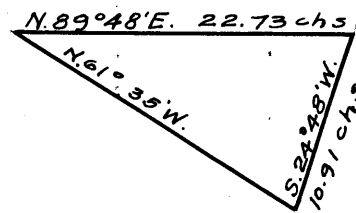
36.09	Triangulation point. Continue N. 89° 48' E., on a random line, bet. secs. 21 and 28.
40.00	Set temp. ¼ sec. cor.
80.30	Intersect N. and S. line, 14 lks. S. of the cor. of secs. 21, 22, 27 and 28.
	Thence, S.89° 42' W.,on a true line, bet. secs. 21 and 28. Over mountainous land, through scattering undergrowth.
2.00	Cliff, brs. N. and S. Continue descent. │ Desc. 185 ft.
8.90	Draw, course NW. Asc. 395 ft.
20.00	Spur, slopes N. Desc.100 ft., over NW. slope.
27.00	Draw, course NE. Asc. 155 ft.
40.15	Spur, slopes NE. Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with cross (X) at exact cor. point, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \quad \frac{S\ 21}{S\ 28}$$

1920

	Desc.
47.00	E. edge of canyon, 20 chs. wide, course N. Thence by triangulation, as hereinbefore described,
67.00	Spur, slopes NE. Thence triangulate across canyon, course NE., as hereinbefore described.
80.30	The cor. of secs. 20, 21, 28 and 29.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	Land, mountainous. Soil, rocky, 4th rate. Timber, none. Undergrowth, sagebrush, cat claw and cactus.

N. 0° 3' W., bet. secs. 20 and 21.
Over mountainous land, through scattering undergrowth.
Asc. 25 ft.

3.67	Spur, slopes E. Desc. 425 ft.
29.00	Draw, course NW. Asc.
31.00	Spur, slopes NW. Desc. 70 ft., over NW. slope.
38.00	Draw, course NW. Asc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 24 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4}$$
S 20 | S 21
1920

From which
    A palo christi, 8 ins. diam., brs. N. 83° E.,
        100 lks. dist., marked ¼ S 21 B T.
    A palo christi, 8 ins. diam., brs. N. 50¼° W.,
        21 lks. dist., marked ¼ S 20 B T.
Continue ascent, 75 ft.

45.00	Spur, slopes W. Desc. 65 ft.
50.00	Draw, course SW. Thence along W. slope.
59.00	South edge of Hindu Canyon, 200 ft. deep, course SW. Small stream of water in canyon.
69.00	North edge of canyon. Asc.
75.00	Spur, slopes SE. Desc.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., on bed rock, with marked (X) stone, for cor. of secs. 16, 17, 20 and 21; and raise a mound of stone around post, with brass cap marked

T 27 N R 12 W
S 17 | S 16
S 20 | S 21
1920

Land, mountainous.
Soil, rocky, 3rd and 4th rates.
No timber.
Undergrowth, ocotillo, palo christi, cat claw, sagebrush
  and cactus.

It is impracticable to chain bet. secs. 16 and 21 from
  the cor. of secs. 16, 17, 20 and 21. I therefore set
  a flag ahead on line on a bearing N. 89° 42' E.; also
  set a flag on line 3.51 chs. S. 89° 42' W. of the cor.
  of secs. 16, 17, 20 and 21, from which I measure a
  base S. 2° 26' E., 7.52 chs., from the S. end of which
        flag brs. N. 75° 26' E. The three
        angles of the triangle are 77° 52',
        87° 52' and 14° 16', the sum of
        which is 180°. The distance tri-
        angulated is given from the sine
        proportion

$$\frac{X}{7.52} = \frac{\sin. 77° 52'}{\sin. 14° 16'}$$
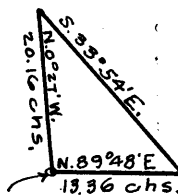
N. 89° 42' E. 29.83 chs.
3.51
7.52 chs. S. 2° 26' E.
26.32 chs.
Cor. secs. 16, 17, 20 and 21.
N. 75° 26' E.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	log. 7.52 = 0.876218
	log. sin. 77° 52' = 9.990188
	0.866406
	log. sin. 14° 16' = 9.391703
	log. X = 1.474703
	X = 29.83 chs., or 26.32
	chs. N. 89° 42' E. of the cor. of secs. 16, 17, 20 and 21.
26.32	Thence N. 89° 42' E. on a random line, bet. secs. 16 and 21.
40.00	Set temp. ¼ sec. cor.
79.92	Intersect N. and S. line, 19 lks. N. of the cor. of secs. 15, 16, 21 and 22.
	Thence, S. 89° 50' W. on a true line, bet. secs. 16 and 21.
	Over mountainous land, through scattering undergrowth.
	Asc. 515 ft.
14.40	Spur, slopes SW. Desc. 115 ft.
19.90	Draw, course S. Asc. 120 ft.
27.90	Spur, slopes SW. Desc. 100 ft.
31.90	Draw, course S. Asc. 75 ft.
38.40	Spur, slopes SE. Desc. 15 ft.
39.96	Set an iron post, 3 ft. long, 1 in. diam., 10 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \quad \frac{\text{S } 16}{\text{S } 21}$$
1920

	Continue descent, 75 ft.
43.90	Draw, course S. Asc. 65 ft.
48.90	Spur, slopes SE. Desc. 100 ft.
53.60	From this point, distance by triangulation as hereinbefore described.
54.60	(Approx.) Top of cliffs, br. NW. and SE.
79.92	The cor. of secs. 16, 17, 20 and 21.
	Land, mountainous.
	Soil, rocky, 4th rate.
	Timber, none.
	Undergrowth, sagebrush, palo christo, mescal, ocotillo and cactus.

	To avoid precipices and cliffs, offset 3.51 chs. West from the cor. of secs. 16, 17, 20 and 21, and run N. 0° 3' W. on offset line, through sec. 17.
	Over mountainous land, through scattering undergrowth. Asc.
7.10	Spur, slopes NE. Desc. 125 ft.
15.00	Center of canyon, 7 chs. wide, course SW. Asc. 135 ft.
22.00	Spur slopes SE. Desc. 55 ft.
32.00	Wash, course SE. Asc. 165 ft.
36.11	Spur, slopes E. Desc. 30 ft.
40.00	Wash, course SE. The true point for ¼ sec. cor. falls in wash, where it cannot be established. At a point 1 ch. W. of true point, and 2.51 chs. E. of offset line
	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for witness cor. to ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4}$$
S 17 | S 16
W C
1920

	From which
	A palo christi, 6 ins. diam., brs. N. 65° E., --- lks. dist., marked W C ¼ S 16 B T.
	A palo christi, 8 ins. diam., brs. S. 68½° W., --- lks. dist., marked W C ¼ S 17 B T.
	Continue N. 0° 3' W. on offset line, 3.51 chs. W. of sec. line. Asc. 115 ft.
43.05	Spur, slopes E. Desc. 40 ft.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
50.00	Draw, course E. Asc. 105 ft.
54.00	Spur, slopes E. Desc. 40 ft.
59.00	Draw, course SE. Asc. 190 ft.
74.00	Spur, slopes SE. Desc. 45 ft.
79.00	Draw, course E. Asc.
80.00	East 3.51 chs., and set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, for cor. of secs. 8, 9, 16 and 17; marked on brass cap.

T 27 N R 12 W
S 8 | S 9.
S 17 | S 16
1920

And raise a mound of stone, 2 ft. base, 1½ ft. high,
W. of cor.
Land, mountainous.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush, and cactus.

N. 89° 50' E., on a random line, bet. secs. 9 and 16.

40.00	Set temp. ¼ sec. cor.
74.21	Fall 12 lks. N. of flag set 5.91 chs. W. of the true point for cor. of secs. 9, 10, 15 and 16, making the total length of mile, 80.12 chs.

From the flag 5.91 chs. W. of the true point for cor. of
secs. 9, 10, 15 and 16.
S. 89° 55' W., on a true line, bet. secs. 9 and 16;
measurement from true point.
Over rolling land, through scattering undergrowth. Asc.

30.10	Spur, slopes N. Desc. 50 ft.
40.06	Set an iron post, 3 ft. long, 1 in. diam., 10 ins. in the ground, on bed rock, with marked (X) stone, for ¼ sec. cor., and raise a mound of stone around post, with brass cap marked

¼   S 9
    S 16
    1920

Continue descent.

51.10	Draw, course NE. Asc. 35 ft.
54.10	Spur, slopes SW. Desc. 30 ft.
66.10	Head of draw, course S. Asc. 30 ft.
80.12	The cor. of secs. 8, 9, 16 and 17.

Land, rolling.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush and cactus.
Fair grass.

N. 0° 3' W., bet. secs. 8 and 9.
Over mountainous land, through scattering undergrowth.
Asc. 135 ft.

12.00	Spur, slopes SE. Desc. 110 ft.
22.00	Draw, course E. Asc. 115 ft.
28.50	Spur, slopes E. Desc. 120 ft.
37.00	Draw, course NE. Asc. 20 ft.
39.00	Spur, slopes E. Desc. 15 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground, for ¼ sec. cor., marked on brass cap

¼
S 8 | S 9
1920

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	And raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Continue descent, 25 ft.
41.00	Draw, course E. Asc. 65 ft.
46.00	Spur, slopes SE. Desc. 20 ft.
51.00	Draw, course SE. Asc. 120 ft.
58.00	Spur, slopes SE. Desc. 35 ft.
65.00	Draw, course SE. Asc. 80 ft.
75.00	Spur, slopes NE. Desc. 10 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 12 ins. in the ground, with marked (X) stone, for cor. of secs. 4, 5, 8 and 9; and raise a mound of stone around post, with brass cap marked

T 27 N   R 12 W
S 5 | S 4
S 8 | S 9
1920

Land, mountainous.
Soil, rocky, 3rd and 4th rates.
Timber, none.
Undergrowth, palo christi, sagebrush and cactus.
Fair grass.

	N. 89° 55' E., on a random line, bet. secs. 4 and 9.
40.00	Set temp. ¼ sec. cor.
80.14	Intersect N. and S. line, 12 lks. N. of the cor. of secs. 3, 4, 9 and 10.
	Thence, West, on a true line, bet. secs. 4 and 9.
	Over heavily rolling land, through scattering undergrowth Desc. 25 ft.
17.15	Small canyon, course SE. Asc. 100 ft.
40.07	Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground, for ¼ sec. cor., marked on brass cap

¼ $\frac{S\ 4}{S\ 9}$
1920

And raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Asc. 25 ft.

41.15	Spur, slopes S. 70° E. Desc. 30 ft.
60.65	Draw, course S. Asc. 55 ft.
80.14	The cor. of secs. 4, 5, 8 and 9.
	Land, heavily rolling.

Soil, sandy and gravelly, 2nd, 3rd and 4th rates.
Timber, none.
Undergrowth, sagebrush and cactus.
Fair grass.

	N. 0° 7' W., on a random line, bet. secs. 4 and 5.
40.00	Set temp. ¼ sec. cor.
80.04	Fall 14 lks. W. of the cor. of secs. 4, 5, 32 and 33, on the N. bdy. of Tp., hereinbefore described.
	Thence, S. 0° 1' E., on a true line, bet. secs. 4 and 5.
	Over rolling and level land, through scattering undergrowth.
2.55	Head of draw, course SE.
37.05	Head of draw, course SW.
40.04	Set an iron post, 3 ft. long, 1 in. diam., 6 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

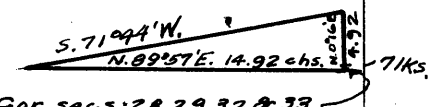| Chains	
	$\frac{1}{4}$ S 5 | S 4 1920
	Asc. 15 ft.
41.95	Spur, slopes SW. Desc. 230 ft.
64.55	Draw, course SE. Asc. 115 ft.
80.04	The cor. of secs. 4, 5, 8 and 9. Land, rolling and level. Soil, sandy and gravelly, 3rd rate. No timber. Undergrowth, sagebrush, yucca and cactus. Fair grass.

	From the cor. of secs. 5, 6, 31 and 32, on the S. bdy. of
	    Tp., described in Book "E".
	N. 0° 3' W., bet. secs. 31 and 32.
	Over rolling land, through scattering timber and under-
	    growth. Desc. 65 ft.

10.28	Wash, 15 lks. wide, course NE. Asc. 55 ft.
20.92	Spur, slopes NE. Desc. 30 ft.
25.90	Draw, course NE. Asc. 25 ft.
34.90	Spur, slopes NE. Desc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., marked on brass cap

	$\frac{1}{4}$
	S 31 | S 32
	1920
	From which
	    A cedar, 8 ins. diam., brs. N. 49$\frac{1}{2}$° E., 53 lks.
	        dist., marked $\frac{1}{4}$ S 32 B T.
	    A cedar, 16 ins. diam., brs. S. 10$\frac{1}{2}$° W., 28 lks.
	        dist., marked $\frac{1}{4}$ S 31 B T.
	Desc. 120 ft.

65.05	Wash, 20 lks. wide, course E. Asc. 70 ft.
76.84	Spur, slopes E. Desc. 30 ft.

80.00	Set an iron post, 3 ft. long, 2 ins. diam., 27 ins. in
	    the ground, for cor. of secs. 29, 30, 31 and 32, mark-
	    ed on brass cap
	               T 27 N R 12 W
	               S 30 | S 29
	               S 31 | S 32
	               1920
	From which
	    A cedar, 10 ins. diam., brs. N. 23° E., 117 lks.
	        dist., marked T 27 N R 12 W S 29 B T.
	    A cedar, 8 ins. diam., brs. S. 55° E., 460 lks.
	        dist., marked T 27 N R 12 W S 32 B T.
	    A cedar, 12 ins. diam., brs. S. 7° W., 238 lks.
	        dist., marked T 27 N R 12 W S 31 B T.
	    A cedar, 9 ins. diam., brs. N. 40$\frac{1}{2}$° W., 255 lks.
	        dist., marked T 27 N R 12 W S 30 B T.
	Land, rolling.
	Soil, gravelly, 3rd and 4th rates.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

	N. 89° 57' E., on a random line, bet. secs. 29 and 32.
40.00	Set temp. $\frac{1}{4}$ sec. cor.

64.88	Impracticable to chain from this point. Set a flag ahead
	    on random line, 7 lks. S. of the cor. of secs. 28, 29, 32 and
	    33, and from the

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	flag measure a base N. 0° 16' E. 4.92 chs., from the N. end of which, flag at the 64.84 ch. point brs. S. 71° 44' W. The three angles of the triangle are therefore 18° 13', 71° 28' and 90° 19', the sum of which is 180°. The distance triangulated is given by the sine proportion

$$\frac{X}{4.92} = \frac{\sin. 71° 28'}{\sin. 18° 13'}$$

$$\begin{aligned}
\log. 4.92 &= 0.691965 \\
\log. \sin. 71° 28' &= 9.976872 \\
&\overline{\quad 0.668837} \\
\log. \sin. 18°13' &= 9.495005 \\
\log. X &= \overline{1.173832} \\
X &= 14.92 \text{ chs., which added to}
\end{aligned}$$

64.88 chs. gives.

Chains	
79.80	Intersect N. and S. line, 7 lks. S. of the cor. of secs. 28, 29 32 and 33.
	Thence, S. 89° 54' W., on a true line, bet. secs. 29 & 32.
	Over mountainous land, through scattering undergrowth
	dist. by triangulation, as hereinbefore described.
	Desc.
5.00	(Approx.) Canyon, course NW. Asc.
14.92	Rocky point, slopes N. Asc.90 ft.,distance by chaining.
25.40	Spur, slopes NW. Desc. 140 ft.
33.65	Gulch, 10 lks. wide, course N. Asc. 170 ft.
39.90	Set an iron post, 3 ft. long, 1 in diam., 22 ins. in the ground, in a mound of stone, for ¼ sec. cor., marked on brass cap

$$\tfrac{1}{4} \, \frac{\text{S } 29}{\text{S } 32}$$

1920

From which
    A cedar, 8 ins. diam., brs. N. 24½° W., 101 lks.
        dist., marked ¼ S 29 B T.
    A cedar, 8 ins. diam., brs. S. 37½° E., 50 lks.
        dist., marked ¼ S 32 B T.

Chains	
	Continue ascent, 40 ft.
42.20	Spur, slopes NE. Thence along N. slope.
63.80	Desc.
64.10	Canyon, 30 lks. wide, course NE. Asc. 65 ft.
74.85	Spur, slopes N. 80° E. Desc. 30 ft.
79.80	The cor. of secs. 29, 30, 31 and 32.
	Land, mountainous.
	Soil, gravelly loam, rocky, 3rd and 4th rates.
	Timber, cedar and pinyon.
	Undergrowth, sagebrush and cactus.

Chains	
	S. 89° 57' W., on a random line, bet. secs. 30 and 31.
40.00	Set temp. ¼ sec. cor.
117.43	Fall 4 lks. N. of the cor. of secs. 30 and 31, on the W. bdy. of Tp., hereinbefore described.
	Thence,N.89° 56' E., on a true line,bet.secs. 30 and 31.
	Over gently rolling land, through scattering timber and undergrowth.
23.80	Wash, 15 lks. wide, course NW. Asc. 55 ft.
29.93	Spur, slopes N. Desc. 30 ft.
36.04	Draw, course NW. Asc. 60 ft.
42.00	Spur, slopes NE. Desc. 155 ft.
57.80	Wash, 30 lks. wide, course NW. Asc. 50 ft.
69.67	Spur, slopes N. Desc.
77.43	Set an iron post, 3 ft. long, 1 in. diam.; 26 ins. in the ground, for ¼ sec. cor., marked on brass cap

94,

BOOK 3554

44

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	$\frac{1}{4}$ S 30 / S 31
	1920
	From which
	A cedar, 20 ins. diam., brs. N. 31½ W., 55 lks. dist., marked ¼ S 30 B T.
	A cedar, 14 ins. diam., brs. S. 57¼° E., 236 lks. dist., marked ¼ S 31 B T.
	Asc. 70 ft.
87.34	Spur, slopes NE. Desc. 30 ft.
92.40	Asc.
102.35	Spur, slopes NE. Desc. 50 ft.
112.30	Head of draw, course NE. Asc.
117.43	The cor. of secs. 29, 30, 31 and 32.
	Land, rolling.
	Soil, gravelly and rocky, 4th rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

	N. 0° 3' W., bet. secs. 29 and 30.
	Over rolling land, through scattering timber and undergrowth. Desc. 25 ft.
5.71	Wash, 10 lks. wide, course NE. Asc. 45 ft.
18.96	Thence over rolling land.
25.00	Asc. 50 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, in a mound of stone, for ¼ sec. cor., marked on brass cap
	S 30 $\frac{1}{4}$ S 29
	1920
	From which
	A cedar, 8 ins. diam., brs. S. 76° E., 55 lks. dist., marked ¼ S 29 B T.
	A cedar, 10 ins. diam., brs. S. 69° W., 263 lks. dist., marked ¼ S 30 B T.
45.00	Spur, slopes NW. Desc. 765 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 26 ins. in the ground, for cor. of secs. 19, 20, 29 and 30, marked on brass cap
	T 27 N R 12 W
	S 19 / S 20
	S 30 / S 29
	1920
	And raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.
	Land, rolling and mountainous.
	Soil, rocky and gravelly, 4th rate.
	Timber, cedar.
	Undergrowth, sagebrush and cactus.

	N. 89° 54' E., on a random line, bet. secs. 20 and 29.
40.00	Set temp. ¼ sec. cor.
41.72	Impracticable to chain from this point. Set a flag ahead on line, on E. rim of canyon, and from 41.72 ch. point, measure a base S. 0° 6' E. 9.38 chs., from the S. end of which, flag brs. N. 68° 10' E. The three angles of the triangle are therefore 68° 16', 90° and 21° 44', the sum of which is 180°.

N.89°54'E. 23.53 chs.
S.0°6'E. 9.38 chs.
N.68°10'E.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	The distance triangulated is given by tan. 68° 16' X 9.36 = 2.50964 X 9.36 = 23.53 chs., which added to 41.73 chs., gives
65.25	Impracticable to chain from this point. Set a flag ahead on random line 2 lks. N. of cor. of secs. 20, 21, 28 & 29, from which I measure a base S. 0° 5' E. 8.65 chs., from the S. end of which, flag at the 65.25 ch. point brs. N. 60° 10' W. The three angles of the triangle are therefore 60° 7', 29° 56' and 89° 57', the sum of which is 180° The distance triangulated is given by the sine proportion:

$$\frac{X}{8.65} = \frac{\sin. 60° 7'}{\sin. 29° 56'}$$

log. 8.65 = 0.937016
log. sin. 60° 7' = 9.938949
                  0.875965
log. sin. 29° 56' = 9.698094
log. X = 1.176901
X = 15.03 chs., which added to 65.25 chs., given

Cor. secs. 20, 21, 28 and 29.
N.89°54'E. 15.03 chs. 2 lks
N.60°10'W.
S.0°5'E.
8.65 chs.

80.28	Intersect N. and S. line, 2 lks. N. of the cor. of secs. 20, 29, 32 and 33. Thence S. 89° 56' W., on a true line, bet. secs. 20 and 29. Over mountainous land, through scattering undergrowth, distance by triangulation, as hereinbefore described.
15.03	Top of cliffs, 1000 ft. high, brs. NE. and SW.
30.25	(Approx.) Wash, in bottom of box canyon, course N. Asc. over nearly vertical wall, 300 ft. high.
38.56	From this point, distance by chaining. Spur, slopes N. Desc. 60 ft.
40.14	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$¼ \quad \frac{S \ 20}{S \ 29}$$
1920

Continue descent, 150 ft.

43.00	Gulch, course NE. Asc. 365 ft.
54.90	Spur, slopes N. Desc. 290 ft.
76.50	Gulch, course N. Asc. 100 ft.
80.28	The cor. of secs. 19, 20, 29 and 30. Land, mountainous. Soil, rocky, 4th rate. No timber. Undergrowth, sagebrush and quinine brush.

| | S. 89° 56' W., on a random line, bet. secs. 19 and 30. |
| 31.20 | Set temp. witness cor. to ¼ sec. cor. Set a flag ahead on line, and from the 31.20 ch. point, measure a base S. 11° 30' W. 15.47 chs., from the S. end of which, flag brs. N. 67° 16' W. The three angles of the triangle are 78° 36', 22° 48' and 78° 36', the sum of which is 180°. The distance triangulated is found by the sine proportion: |

$$\frac{X}{15.47} = \frac{\sin. 78° 36'}{\sin. 22° 48'}$$

S.89°56'W. 39.13 chs.
N.67°16'W.
S.11°30'W.
15.47 chs.

96

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	log. 15.47 = 1.189400
	log. sin. 78° 56' = 9.991546
	1.180946
	log. sin. 82° 48' = 9.896299
	log. X = 1.59547
	X = 39.15 chs., which

added to 31.20 chs., gives

70.35 Continue S. 89° 56' W. on a random line, bet. secs. 19 and 30.

117.40 Fall 4 lks. N. of the cor. of secs. 19 and 30, on the W. bdy. of Tp., hereinbefore described.   Thence N. 89° 56' E., on a true line, bet. secs. 19 and 30. Over mountainous land, through scattering undergrowth. Desc. 15 ft.

4.90 Gulch, course SE. Asc. 25 ft.

17.50 Desc. 120 ft.

23.50 Gulch, course SE. Asc. 100 ft.

28.50 Desc. 250 ft.

47.07 W. edge of box canyon, course NE., with perpendicular walls, 150 ft. high. Distance determined by triangulation, as hereinbefore described.

77.40 The true point for ¼ sec. cor. is inaccessible.

86.20 Thence chain, S. 89° 55' W., 2.20 chs. to

84.00 Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for witness cor. to ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$¼ \frac{S\ 19}{S\ 30}\ W\ C$$
1920

Cor. stands on edge of cliffs, 150 ft. high, bearing NE. and SW. From this cor., distance determined by chaining.

96.30 Gulch, course NW. Asc.

117.40 The cor. of secs. 19, 20, 29 and 30.
Land, mountainous.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush and cactus.

N. 0° 5' W., bet. secs. 19 and 20.
Over mountainous land, through scattering undergrowth.
It is impossible to chain across Hindu Canyon. I measure distance by triangulation, using as a base a line the length of which I determine by triangulation as follows: Set a flag ahead on line, on N. side of canyon. Go to this flag and set a second flag on a bearing N. 89° 57' E. Measure a base from the first flag, N. 0° 5' W., 5.00 chs., along sec. line, from the N. end of which, the second flag brs. S. 67° 51' E.
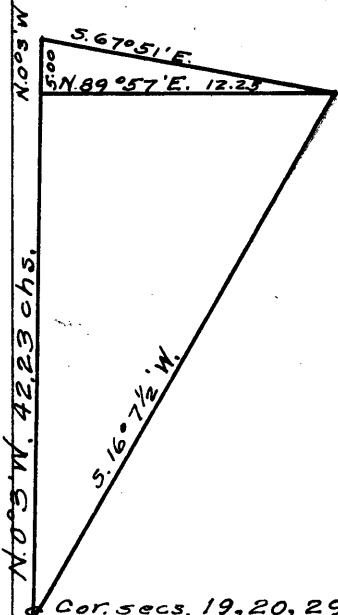
The angles of this triangle are therefore 67° 48', 22° 12' and 90°, the sum of which is 180°. The distance triangulated is given by tan. 67° 48' X 5.00 = 12.25 chs. From the second flag at the end of this base, flag at the cor. of secs. 19, 20, 29 and 30 brs. S. 16° 7½' W. The three angles of this triangle are 16° 10½', 90° and 73° 49½', the sum of which is 180°. The distance triangulated is given by tan. 73° 49½' X 12.25 = 3.44763 X 12.25 = 42.23 chs.

S. 67° 51' E.
S. N. 89° 57' E. 12.25
N. 0° 5' W.
N. 0° 5' W. 42.23 chs.
S. 16° 7½' W.
Cor. secs. 19, 20, 29 and 30.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

3554

Chains	
	The approximate topography from the cor. of secs. 19, 20, 29 and 30 is as follows:
27.00	South, or left rim of Hindu Canyon, 600 ft. deep, brs. E. and W.
40.00	The true point for ¼ sec. cor. falls where it cannot be established
42.23	Thence S. 0° 3' E., 1.00 ch. to
41.23	North or right rim of canyon, brs. E. and W. Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for witness cor. to ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked
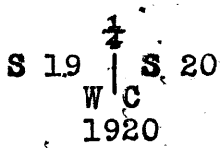
S 19 | ¼ | S 20
W | C
1920

	Thence by chaining, N. 0° 3' W., bet. secs. 19 and 20.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 14 ins. in the ground, with marked (X) stone, for cor. of secs. 17, 18, 19 and 20; and raise a mound of stone around post, with brass cap marked

T 27 N | R 12 W
S 18 | S 17
S 19 | S 20
1920
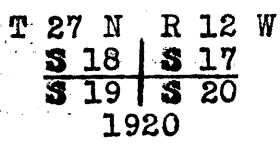
Land, mountainous.
Soil, rocky, 4th rate.
Timber, none.
Undergrowth, sagebrush and cactus.

To survey the line bet. secs. 17 and 20, I begin at the cor. of secs. 16, 17, 20 and 21, and triangulate random line as follows: Set a flag ahead on line, S. 89° 55' W., and from the cor. of secs. 16, 17, 20 and 21, measure a base S. 0° 58' E., 21.58 chs., from the S. end of which, flag brs. N. 55° 22' W. The three angles of the triangle are therefore 34° 43', 90° 53' and 54° 24', the sum of which is 180°. The distance triangulated is found from the sine proportion:
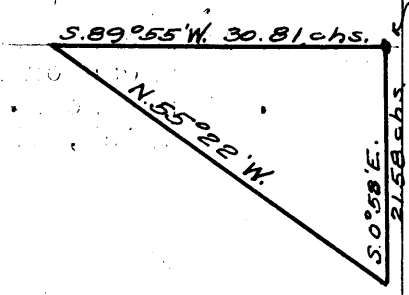
$$\frac{X}{21.58} = \frac{\sin. 54° 24'}{\sin. 34° 43'}$$

$$\log. 21.58 = 1.334051$$
$$\log. \sin. 54° 24' = 9.910144$$
$$1.244195$$
$$\log. \sin. 34° 43' = 9.755508$$
$$\log. X = 1.488687$$
$$X = 30.81$$

30.81	Set temp. witness cor. to ¼ sec. cor.
	Set a flag ahead on line, and from the cor. of secs. 16, 17, 20 and 21, measure a base S. 0° 58' E., 59.84 chs., from the S. end of which, the flag brs. N. 45° 6' W. The three angles of the triangle are 44° 59', 90° 53' and 44° 8', the sum of which is 180°. The distance triangulated is given by the sine proportion as follows:

S.89°55'W. 30.81 chs.
N.55°22'W.
S.0°58'E. 21.58 chs.
cor. secs. 16,17, 20 and 21
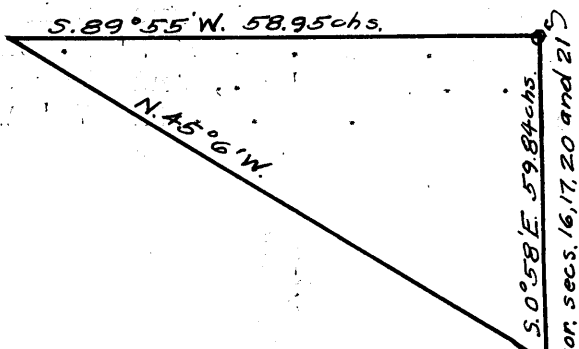
S.89°55'W. 58.95 chs.
N.45°6'W.
S.0°58'E. 59.84 chs.
cor. secs. 16,17, 20 and 21

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

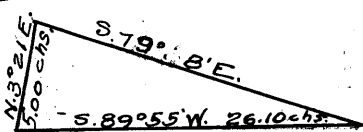| Chains	
	$\dfrac{X}{59.84} = \dfrac{\sin. 44° 8'}{\sin. 44° 59'}$
	log. 59.84 = 1.776992
	log.sin.44° 8' = 9.842815
	1.619807
	log.sin.44°59' = 9.849359
	log. X = 1.770448
	X = 58.95
58.95	Thence S. 89° 55' W. on a random line, bet. secs. 17 and 20.
80.00	Intersect N. and S. line, 12 lks. S. of the cor. of secs. 17, 18, 19 and 20.
	I return to the cor. of secs. 16, 17, 20 and 21, and run West on a true line, bet. secs. 17 and 20.
	Over mountainous land, through scattering undergrowth.
	Distance by triangulation, as hereinbefore described.
3.50	Spur, slopes SE. Desc.
30.81	From this point, distance to witness ¼ sec. cor. by chaining.
31.91	Set an iron post, 3 ft. long, 1 in. diam., on bed rock, with marked (X) stone, for witness cor. to ¼ sec. cor; and raise a mound of stone around post, with brass cap marked
	W C ¼ $\frac{\text{S 17}}{\text{S 20}}$ 1920
40.00	The true point for ¼ sec. cor. falls in gulch, course SE. Thence by triangulation.
58.95	Thence by chaining. Asc. 30 ft.
65.00	Spur, slopes SE. Desc. 195 ft.
72.00	Draw, course SE. Asc. 165 ft.
78.00	Spur, slopes SE. Desc. 25 ft.
80.00	The cor. of secs. 17, 18, 19 and 20.
	Land, mountainous.
	Soil, rocky, 4th rate.
	No timber.
	Undergrowth, sagebrush and cactus.

S. 89° 55' W., on a random line, bet. secs. 18 and 19.

| 20.18 | Impracticable to chain from this point, Set a flag ahead on line, and from the 20.18 ch. point, measure a base N. 3° 21' W., 5.00 chs., from the N. end of which, flag brs. S. 79° 8' E. The three angles of the triangle are therefore 10° 57', 82° 29' and 86° 34', the sum of which is 180°. The distance triangulated is found from the sine proportion: |

$$\frac{X}{5.00} = \frac{\sin. 82° 29'}{\sin. 10° 57'}$$

log. 5.00 = 0.698970
log. sin. 82° 29' = 9.996352
0.695222
log. sin. 10° 57' = 9.278645
log X = 1.416577
X = 26.10

chs., which added to 20.18 chs., gives 46.28 chs.

| 46.28 | Set temp. witness cor. to ¼ sec. cor. |
| 54.26 | Impracticable to chain from this point. From this point flag 11.05 chs. N. 0° 5' E. of cor. of secs. 18 and 19 brs. N. 79° 53' W., and flag 50.51 chs. N. 0° 5' E. of said cor. brs. N. 51° 7½' W. |
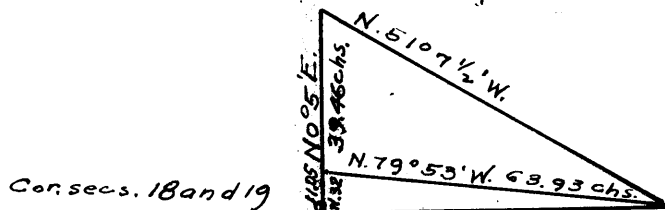
Con. secs. 18 and 19

BOOK 3554

Survey of Part of the Subdivision
of. T. 27. N.,. R. 12. W.

Chains	
.	The distance to the flag 11.05
	chs. N. 0° 5' E. of the cor.
	of secs. 18 and 19 is determin-
	ed from the triangle whose
	three angles are 28° 45½',
	100° 2' and 51° 12½', and side
	39.46 chs., as follows:

$$\frac{X}{39.46} = \frac{\sin. 51°12\frac{1}{2}'}{\sin. 28°45\frac{1}{2}'}$$

$$\text{log. } 39.46 = 1.596157$$
$$\text{log. sin. } 51°12\frac{1}{2}' = 9.891776$$
$$\overline{1.487933}$$
$$\text{log. sin. } 28°45\frac{1}{2}' = 9.682250$$
$$\text{log. } X = \overline{1.805683}$$
$$X = 63.93$$

Using the distance 63.93 chs., the length of the ran-
dom line is computed by the sine proportion from the
triangle whose angles are 10° 12', 89° 50' and 79° 58',
as follows:

$$\frac{X}{63.93} = \frac{\sin. 79° 58'}{\sin. 89° 50'}$$

$$\text{log. } 63.93 = 1.805705$$
$$\text{log. sin. } 79° 58' = 9.993307$$
$$\overline{1.799012}$$
$$\text{log. sin. } 89° 50' = 9.999998$$
$$\text{log. } X = \overline{1.799014}$$
$$X = 62.95$$

From the same triangle, the falling is computed:

$$\frac{X}{63.93} = \frac{\sin. 10° 12'}{\sin. 89° 50'}$$

$$\text{log. } 63.93 = 1.805705$$
$$\text{log. sin. } 10° 12' = 9.248181$$
$$\overline{1.053886}$$
$$\text{log. sin. } 89° 50' = 9.999998$$
$$\text{log. } X = \overline{1.053888}$$
$$X = 11.32$$

62.95 + 54.26 = 117.21 chs.   11.32 - 11.05 = .27 chs.

Chains	
117.21	Fall 27 lks. S. of the cor. of secs. 18 and 19, on the
	W. bdy. of Tp., hereinbefore described.
	Thence, S.89°57'E.,on a true line,bet.secs.18 and 19.
	Over mountainous land, through scattering undergrowth,
	dist. by triangulation,as hereinbefore described..
62.96	Cliff, brs. N. and S.. Thence by chaining, over rolling
	top.
77.21	Set an iron post, 3 ft. long, 1 in. diam., on bed rock,
	with marked (X) stone, for ¼ sec. cor.; and raise a
	mound of stone around post, with brass cap marked,

$$\frac{1}{4} \frac{\text{S } 18}{\text{S } 19}$$
1920

Chains	
	Thence by triangulation.
97.04	Thence by chaining. Asc.
104.70	Spur, slopes SE. Desc. 170 ft.
112.60	Draw, course SE. Asc. 80 ft.
117.21	The cor. of secs. 17, 18, 19 and 20.
	Land, mountainous.
	Soil, rocky, 4th rate.
	Timber, none.
	Undergrowth, sagebrush and cactus..

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	N. 0° 3' W., bet. secs. 17 and 18.
	Over mountainous land, through scattering undergrowth.
	Asc. 65 ft.
5.00	Spur, slopes SE. Desc. 75 ft.
10.00	Head of draw, course SE. Asc. 25 ft.
19.00	Spur, slopes E. Desc. 70 ft., over NW. slope.
26.00	Draw, course NE. Asc.
29.00	Spur, slopes SE. Desc. 10 ft.
33.00	Draw, course SE. Asc. 10 ft.
34.50	Spur, slopes E. Desc. 15 ft.
38.00	Draw, course SE. Asc. 15 ft.
40.00	Set an iron post, 3 ft. long, 1 in diam., on bed rock over cross (X) marked at exact cor. point, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\text{S 18} \mid \text{S 17}$$
$$1920$$

	Desc.
43.00	Draw, course SW. Asc. 200 ft.
44.00	Spur, slopes S.
70.00	Spur, slopes E. Desc. 20 ft.
77.00	Draw, course SE. Asc. 10 ft.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, for cor. of secs. 7, 8, 17 and 18, marked on brass cap

$$\text{T 27 N} \quad \text{R 12 W}$$
$$\text{S 7} \mid \text{S 8}$$
$$\text{S 18} \mid \text{S 17}$$
$$1920$$

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

Land, mountainous.
Soil, gravelly, 2nd and 3rd rates.
No timber.
Undergrowth, sagebrush and cat claw.
Fair grass.

	East, on a random line, bet. secs. 8 and 17.
40.00	Set temp. $\frac{1}{4}$ sec. cor.
80.00	Intersect the cor. of secs. 8, 9, 16 and 17.
	Thence, West on a true line, bet. secs. 8 and 17.
	Over rolling land, through scattering undergrowth. Desc.
3.50	Draw, course SE. Thence along S. slope.
13.50	Draw, course SE. Asc.
19.00	Spur, slopes N. Desc.
22.00	Draw, course N. Asc.
28.10	Divide, brs. N. and S. Desc.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 18 ins. in the ground, with marked (X) stone, for $\frac{1}{4}$ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \frac{\text{S 8}}{\text{S 17}}$$
$$1920.$$

	Continue descent, 115 ft.
59.00	Draw, course SW. Asc. 100 ft.
73.00	Spur, slopes S. Desc. 75 ft.
76.50	Draw, course S. Asc. 45 ft.
80.00	The cor. of secs. 7, 8, 17 and 18.
	Land, rolling.
	Soil, sandy and gravelly, 3rd and 4th rates.
	No timber.
	Undergrowth, sagebrush and cactus.
	Good grass.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

BOOK 3554

Chains	
	N. 89° 57' W., on a random line, bet. secs. 7 and 18.
40.00	Set temp. ¼ sec. cor.
74.90	Impossible to chain from this point. Flag on the cor. of secs. 7 and 18 brs. S. 89° 54' W. Measure a base N. 0° 6' W. 10.00 chs., from the N. end of which, flag at the cor. of secs. 7 and 18 brs. S. 76° 36' W. The three angles of the triangle are therefore 76° 42', 90° and 13° 18', the sum of which is 180°. The distance triangulated is given by tan. 76° 42' X 10.00 = 4.23030 X 10 = 42.30 chs., which added to 74.90 chs., gives 117.20 chs. The random line continued on its proper bearing would have intersected the W. bdy. 11 lks. N. of the cor. of secs. 7 and 18.
117.20	Fall 11 lks. N. of the cor. of secs. 7 and 18, on the W. bdy. of Tp., hereinbefore described.
	Thence, East on a true line, bet. secs. 7 and 18.
	Over mountainous land, through scattering undergrowth.
	Distance by triangulation, as hereinbefore described.
42.30	Perpendicular cliff, 2100 ft. high, brs. N. and SE. Thence over rolling land. Desc. 55 ft.
53.70	Draw, course S. Asc. 70 ft.
67.20	Spur, slopes S. Desc. 40 ft.
71.70	Draw, course SW. Asc. 25 ft.
77.20	Set an iron post, 3 ft. long, 1 in. diam., 12 ins. in the ground, with marked (X) stone for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \quad \frac{S\ 7}{S\ 18}$$
1920

	Asc. 15 ft.
88.70	Desc.
98.20	Head of draw, course SE. Asc. 15 ft.
108.20	Spur, slopes SE. Desc. 85 ft.
113.20	Draw, course SE. Asc. 25 ft.
117.20	The cor. of secs. 7, 8, 17 and 18.
	Land, rolling and mountainous.
	Soil, sandy and rocky, 2nd and 4th rates.
	Timber, none.
	Undergrowth, sagebrush.
	Fair grass.

	N. 0° 3' W., bet. secs. 7 and 8.
	Over rolling land, thru scattering undergrowth.
	Asc. 70 ft.
5.00	Spur, slopes SE. Desc. 50 ft.
10.00	Head of draw, course SE., Asc.
17.00	Thence over level land.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 26 ins. in the ground, for ¼ sec. cor., marked on brass cap

$$\frac{1}{4}$$
S 7 | S 8
1920

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
	Dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist.
47.00	Draw, course SW.
80.00	Set an iron post, 3 ft. long, 2 ins. diam., 26 ins. in the ground, for cor. of secs. 5, 6, 7 and 8; marked on brass cap

<div align="center">

T 27 N   R 12 W

S 6 | **S** 5
— | —
S 7 | **S** 8

1920
</div>

From which

        A cedar, 12 ins. diam., brs. N. 5° W., 433 lks. dist., marked T 27 N R 12 W **S** 6 B T.

        No other trees within limits. Dig pits, 18 x 18 x 12 ins., in each sec., NE., SE., SW. and NW. of post, 3 ft. dist.

Land, rolling and level.
Soil, sandy loam, 2nd and 3rd rates.
Timber, very scattering cedar.
Undergrowth, sagebrush.
Good grass.

	East, on a random line, bet. secs. 5 and 8.
40.00	Set temp. ¼ sec. cor.
79.94	Intersect N. and S. line, 5 lks. N. of the cor. of secs. 4, 5, 8 and 9.
	Thence, N.89° 59'W., on a true line, bet. secs. 5 and 8.
	Over rolling land, through scattering timber and undergrowth. Asc. 45 ft.
14.00	Thence over level land.
39.97	Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground, for ¼ sec. cor., marked on brass cap

<div align="center">

¼   **S** 5
— | —
S 8

1920
</div>

From which

        A cedar, 8 ins. diam., brs. N. 37° W., 280 lks. dist., marked ¼ S 5 B T.

        A cedar, 12 ins. diam., brs. S. 58¾° W., 498 lks. dist., marked ¼ S 8 B T.

79.94	The cor. of secs. 5, 6, 7 and 8.

Land, rolling and level.
Soil, sandy and gravelly, 2nd and 3rd rates.
Timber, scattering cedar.
Undergrowth, sagebrush.
Good grass.

	West, on a random line, bet. secs. 6 and 7.
40.00	Set temp. ¼ sec. cor.
115.00	Fall 13 lks. N. of the witness cor. to cor. of secs. 6 and 7, 2.20 chs. N. 89° 56' E., of the true point for cor. of secs. 6 and 7.
	Thence
	N. 89° 56' E., on a true line, bet. secs. 6 and 7, measurement from true point.
	Over rolling land, through scattering timber and undergrowth.
	Asc. 110 ft.

Survey of Part of the Subdivision
of T. 27 N., R. 12 W.

Chains	
20.20	Ridge, brs. NE. and SW. Desc. 80 ft.
39.60	Draw, course NE. Asc. 50 ft.
51.20	Spur, slopes SW. Desc. 50 ft.
58.70	Draw, course SW. Asc. 35 ft.
67.20	Spur, slopes SW. Desc. 55 ft.
77.20	Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground, with marked (X) stone, for ¼ sec. cor.; and raise a mound of stone around post, with brass cap marked

$$\frac{1}{4} \quad \frac{S\ 6}{S\ 7}$$
1920

From which
A cedar, 12 ins. diam., brs. N. $40\frac{1}{2}°$ W., 230 lks. dist., marked ¼ S 6 B T.
A cedar, 12 ins. diam., brs. S. $22\frac{1}{2}°$ W., 131 lks. dist., marked ¼ S 7 B T.
Desc.

80.40	Draw, course SW. Asc. 65 ft.
93.20	Spur, slopes SW. Desc. 45 ft.
98.20	Draw, course SW. Asc. 45 ft.
117.20	The cor. of secs. 5, 6, 7 and 8.

Land, rolling and gently rolling.
Soil, sandy and gravelly, 3rd and 4th rates.
Timber, scattering cedar.
Undergrowth, sagebrush and cactus.
Fair grass.

N. 0° 1' W., on a random line, bet. secs. 5 and 6.

40.00	Set temp. ¼ sec. cor.
80.00	Fall 4 lks. E. of the cor. of secs. 5, 6, 31 and 32, on the N. bdy. of Tp., hereinbefore described.

Thence, S.0° 3' E., on a true line, bet. secs. 5 and 6.
Over rolling land, through scattering timber and undergrowth. Desc.

5.00	Draw, course SW. Asc.
10.50	Spur, slopes SW. Desc. 30 ft.
26.00	Draw, course W. Asc. 20 ft.
32.00	Spur, slopes W. Desc. 10 ft.
38.50	Draw, course NW. Asc. 30 ft.
40.00	Set an iron post, 3 ft. long, 1 in. diam., 14 ins. in the ground, in a mound of stone, for ¼ sec. cor.; marked on brass cap

$$S\ 6\ \frac{\frac{1}{4}}{}\ S\ 5$$
1920

From which
A cedar, 12 ins. diam., brs. S. $59\frac{1}{2}°$ E., 84 lks. dist., marked ¼ S 5 B T.
A cedar, 10 ins. diam., brs. N. $37\frac{1}{2}°$ W., 89 lks. dist., marked ¼ S 6 B T.
Continue gradual ascent.

50.00	Thence over level land.
80.00	The cor. of secs. 5, 6, 7 and 8.

Land, level and rolling.
Soil, sandy, 2nd rate.
Timber, cedar.
Undergrowth, sagebrush and cactus.
Good grass.

Boundaries of that Portion of T. 27 N., R. 12 W.,
Surveyed under this Group.

Latitudes, departures and closing errors.

Line designated	True bearing	Dist.	Latitudes		Departures.	
			N.	S.	E.	W.
South Boundary	S.89° 57'W.	chs. 517.45	chs.	chs. .43	chs.	chs. 517.45
West Boundary	North	480.00	480.00			
North Boundary	East	356.88			356.88	
Subdivisional Boundary.	South S. 0° 1' E. N.89° 56'E. S.89° 57'E.	80.04 80.00 80.08 80.02	.09	80.04 80.00 .07	.02 80.08 80.02	
East Boundary	South	320.00		320.00		
Convergency					.47	
Totals			480.09	480.11 480.09	517.47 517.45	517.45
Error in latitude				.02		
Error in departure					.02	

The continued satisfactory adjustment of Young and Sons'
light mountain transit No.8389 during the survey in 1920
is indicated from field tests as described in Book "G".

Final Field Test of Instrument No. 9223.

I examine the adjustments of the transit and find them
   satisfactory; then, to test the solar apparatus, by
   comparing its indications, resulting from solar obser-
   vations made during a. m. and p. m. hours, with a mer-
   idian determined by observations on Polaris at elongation,
   I proceed as follows:

Nov. 27, 1920: At our camp at Milkweed Tank, near the
   center of sec. 10, T. 26 N., R. 12 W., G. and S. R. B.
   and M., lat. 35° 39½' N., long. 113° 33' W., using
   the meridian established as described in Book "E", at
   3 hrs. 0 m., p. m., l. m. t., I set off 35° 39½' N.
   on the lat. arc; 21° 10½' S. on the decl. arc; and
   determine a meridian with the solar which agrees with
   the true meridian. I therefore conclude that the tran-
   sit and solar have been in satisfactory adjustment
   during the progress of this survey.

Final Field Test of Instrument No. 8389.

I examine the adjustments of the transit and find them
   satisfactory; then, to test the solar apparatus, by
   comparing its indications, resulting from solar obser-
   vations made during a. m. and p. m. hours, with a
   meridian determined by observations on Polaris at
   elongation, I proceed as follows:

June 20, 1921: at our camp at Milkweed Tank, near the
   center of sec. 10, T. 26 N., R. 12 W., G. and S. R. B.
   and M., lat. 35° 39½' N., long. 113° 33' W., using
   the meridian established as described in Book "E", at
   3 hrs. 0 m., p. m., l. m. t., I set off 35° 39½' N.
   on the lat. arc; 23° 27' N. on the decl. arc; and de-
   termine a meridian with the solar which agrees with
   the true meridian. I therefore conclude that the
   transit and solar have been in satisfactory adjust-
   ment during the progress of this survey.

General Description.

   This township is very mountainous land, unsurveyable
in the northeastern corner, comprising rocky, 4th rate
soil supporting a scanty growth of sagebrush and cactus
undergrowth over the entire township, and a sparse growth
of cedar timber south of Hindu Canyon only. This town-
ship is traversed by deep canyons with perpendicular
walls; the largest, Hindu Canyon, runs in a westerly di-
rection through the center of the township to its con-
fluence with Spencer Canyon on the W. Bdy. of sec. 18.
In this section Spencer Canyon has walls nearly 1500
ft. high, with the bottom of the canyon 2000 to 2300 feet
below the bench. Two other deep canyons are found in
the northeastern corner. Water is found in Hindu Can-
yon in sec. 20. There is also water in sec. 29, which
can be reached from the bottom of Spencer Canyon only.
A trail into Spencer Canyon, crosses the south boundary
of sec. 31 about 20 chs. West of the ¼ sec. cor., passes

6 to 8 chs. E. of the cor. of secs. 30 and 31, and crosses
the W. Bdy. about 20 chs. North of said cor. There are
no settlers in the township, which seems to be suitable
for grazing purposes only, although no cattle are run
north of Hindu Canyon.

4—680

3854

FIELD ASSISTANTS. to

Glenn F Sawyer, U.S.Transitman,

NAMES.	CAPACITY.
T. E. Sheffield,	1st chainman,
Max Dessau,	1st and 2nd chainman,
Charles A.Pritchard,	cornerman,
Geoffrey Brewer,	cornerman,
W L.Price,	cornerman,
F. P.Ames,	axeman,
Doland B.Ames,	axeman,
Hugh Bowers,	axeman,
Leon L.Lamb,	flagman,
Kenneth Dyer,	flagman.
J. S. Dameron,	1st chainman,
Ed. F. Stanley,	flagman

6—2764

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BOOK 3554

CERTIFICATE OF UNITED STATES TRANSITMAN.

I, __Glenn F. Sawyer,_____ U.S. Transitman, hereby certify upon honor that, in pursuance

of special instructions received from the U. S. Surveyor General, for __Group 109, Arizona,_____

bearing date of the __25th_____ day of __February,_____, 1920, I have well, faithfully, and truly

in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instruc-

tions, and the laws of the United States, surveyed all those parts or portions of __the_____

West boundary,

North boundary, and

Subdivision lines of

TOWNSHIP 27 NORTH, RANGE 12 WEST,

_____ of the __Gila and Salt____

River Base & ____ Meridian, in the State of Arizona,_____, which are represented in

and by diagram on page 1 hereof

the foregoing field notes [as having been executed by me, and under my direction; and that all the corners of

said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instruc-

tions, and the special written instructions of the U. S. Surveyor General, for __Group 109, Arizona,__

and in the specific manner described in the field notes, and that the foregoing are the original field notes of

such survey.

Place _Animas New Mexico_ _____ _Glenn F. Sawyer_ _____

U. S. Transitman.

Date: _April 16 1923_ _____

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

_____, 191

The foregoing field notes of the survey of _____

executed by _____

under his special instructions dated _____, 191 , 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.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____

_____, has been correctly copied from the original notes on file in this office.

_____

U. S. Surveyor General

6—2764

4—680

FIELD ASSISTANTS. to

James C. O'Brien, U.S.Surveyor,

NAMES.	CAPACITY.
T.E.Sheffield,	1st chainman,
Max Dessau,	2nd chainman,
Charles A.Pritchard,	cornerman,
Donald B.Ames,	axeman,
Hugh Bowers,	axeman,
Leon L.Lamb,	flagman.
Vick Matthews,	axeman,
C. S. Prosser,	cornerman.

6—2764

BOOK 3554

CERTIFICATE OF UNITED STATES SURVEYOR.

I, __James C. O'Brien,_____, U. S. Surveyor, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for _Group 109, Arizona,_____ bearing date of the ____26th_____ day of _____February,_____, 1920 , I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _the_____

East boundary and

Subdivision lines of

_____ TOWNSHIP 27 NORTH, RANGE 12 WEST,_____

_____, of the Gila and Salt_____

River Base and___ Meridian, in the State of Arizona,_____, which are represented in and by diagram on page 1 hereof the foregoing field notes as having been executed by me, and under my direction; and that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General, for _Group 109, Arizona, and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Place Phoenix Arizona

Date May 14, 1923

_____James C. O'Brien, (deceased)

U. S. Surveyor.

By _____

APPROVAL Asst. Supervisor of Surveys.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

_____, 191

The foregoing field notes of the survey of _____

executed by _____

under his special instructions dated _____, 191 , 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.

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

_____
U. S. Surveyor General.

4—680

FIELD ASSISTANTS. to

Dupree R.Averill,   U. S.Surveyor.

NAMES.	CAPACITY.
Howard Hichman,	1st chainman,
Roy Hume,	2nd chainman,
Geoffrey Brewer,	cornerman,
F.P.Ames,	axman,
J.S.Dameron,	flagman.
Raymond McCreary	1st chainman.

6—2764

CERTIFICATE OF UNITED STATES SURVEYOR.

I, Dupree R. Averill, U. S. Surveyor, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for Group 109, Arizona, bearing date of the 20th day of February, 1920, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the East, West and North boundaries, and Subdivision lines of

TOWNSHIP 27 NORTH, RANGE 12 WEST,

of the Gila and Salt River Base and Meridian, in the State of Arizona, which are represented in **and by diagram on page 1 hereof** the foregoing field notes as having been executed by me, and under my direction; and that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General, for Group 109, Arizona, and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Place _Needles Calif_

Date _April 9 1923_

Dupree R. Averill
U. S. Surveyor.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, **MAY 24 1923** , 1923.

The foregoing field notes of the survey of

Part of East boundary,

West boundary,

Part of North boundary, and part of the

Subdivision lines of

TOWNSHIP 27 NORTH, RANGE 12 WEST,

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

executed by Dupree R. Averill, & James C. O'Brien, U.S. Surveyors, and Glenn F. Sawyer, U.S. Transitman,

under his special instructions dated Feb. 20, 1920, for Group 109, Arizona , having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Frank P. Trott
U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in

has been correctly copied from the original notes on file in this office.

6—2764

U. S. Surveyor General.