

Book "A"

4-679

BOOK 3855

## FIELD NOTES

OF THE RETRACEMENT OF

*Part of the East Boundary of T. 30N., R. 3E.  
and Part of the Subdivision Lines of T. 30N., R. 4E.*

OF THE RESURVEY OF

*Part of the West Boundary*

*and*

*Part of the Subdivision Lines  
of T. 30N., R. 4E.*

AND OF THE SURVEY OF

*Part of the Subdivision Lines  
of*

*Township 30 North, Range 4 East*

*Of the Gila and Salt River Base & Meridian,*

*In the State of ARIZONA*

*Parts of which lines form Part of Grand Canyon National Park Boundary.*

EXECUTED BY

*Benjamin J. Kinsey, U.S. Surveyor*

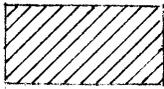
*and*

*Leroy R. Hanson, U.S. Transitman*

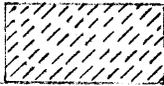
*In the capacity of U. S. Surveyors, under Special Instructions dated May 11, 1927,  
issued by the District Cadastral Engineer to govern surveys included in Group  
No. 145 Arizona, which were approved by the Commissioner of the General Land  
Office, May 20, 1927, and Assignment Instructions dated Oct. 15, 1927.*

*Retracement,  
Resurvey and Survey commenced Oct. 27, 1927*

*Retracement,  
Resurvey and Survey completed Nov. 23, 1927*

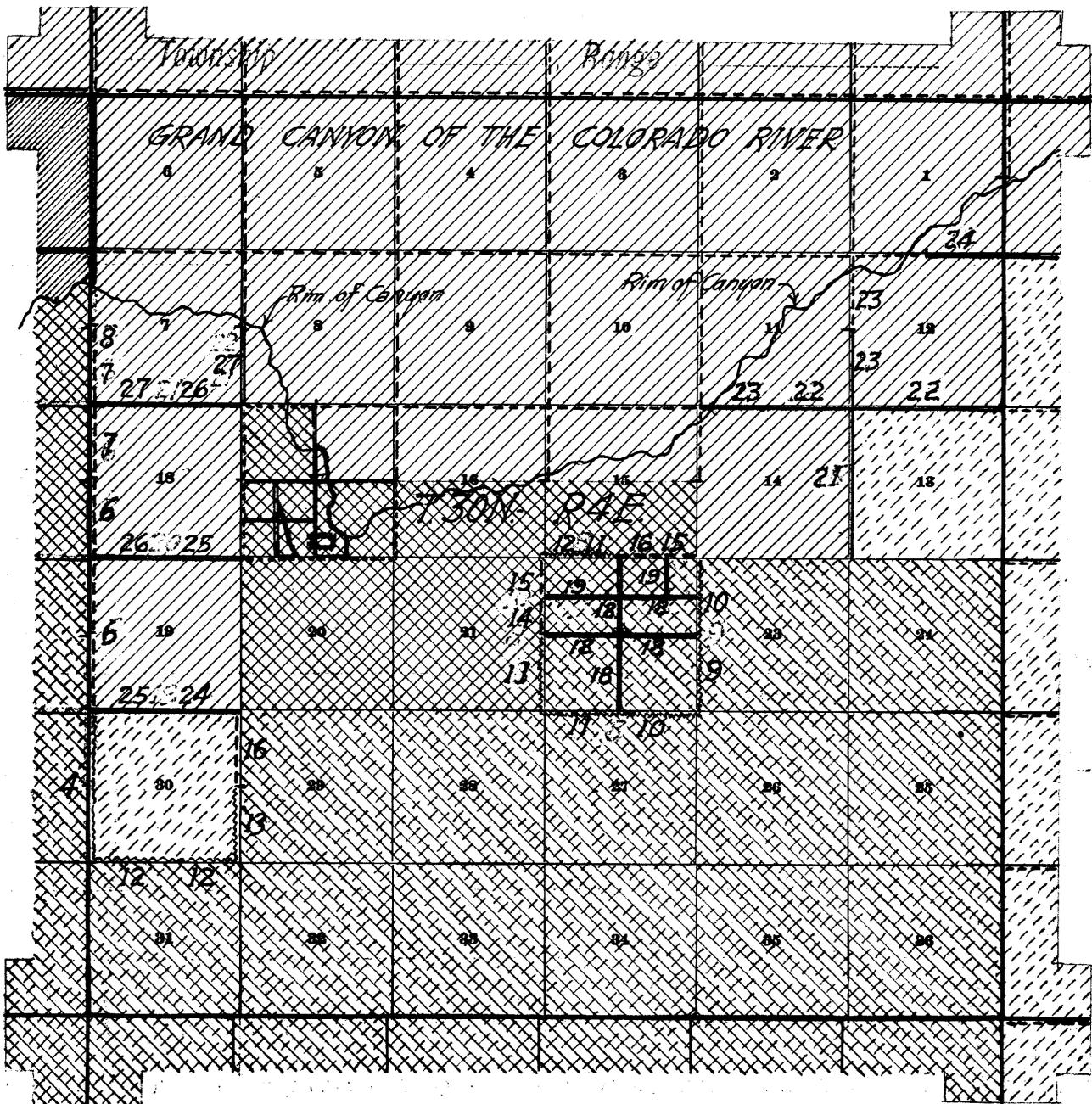


Land within Grand Canyon National Park.



Land within Tusayan National Forest.

### INDEX DIAGRAM.



— Surveyed under this group.

⋯ Retraced under this group.

- - - Resurveyed under this group.

— Line shown protracted on accepted plats. (Not actually surveyed)

Areas shown on accepted plats by protraction.

— Surveyed under current Group No. 144.

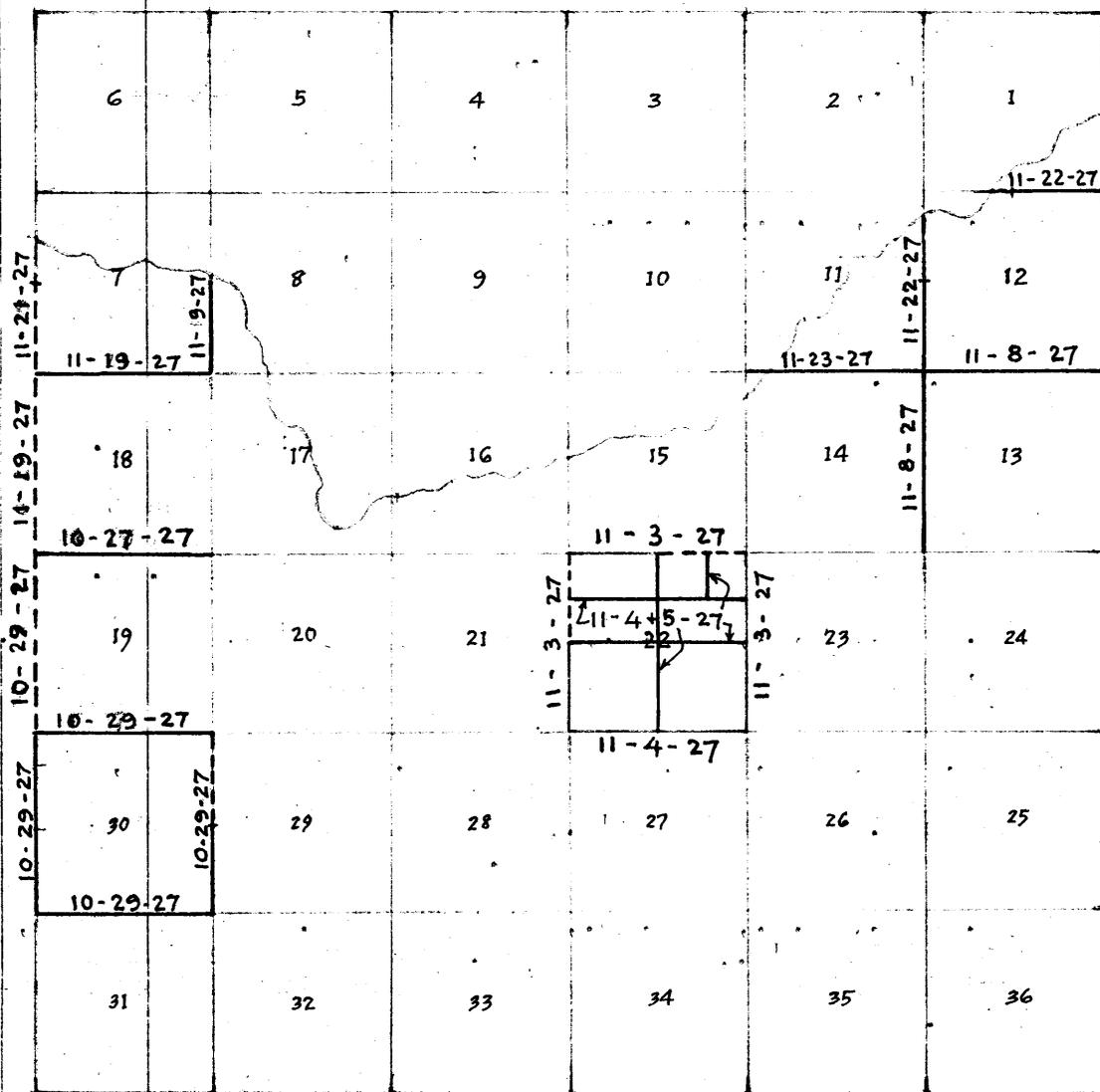
⋯ Retraced under current Group No. 144.

- - - Unsurveyed.

— Accepted surveyed lines.

Areas shown on accepted plats by actual surveys.

Book "A"  
 Group 145 Arizona  
 Township 30 North, Range 4 East  
 DATE DIAGRAM  
 1927



— Surveyed by Benjamin J. Kinsey, U.S. Surveyor, on dates shown thereon.

- - - Resurveyed by Benjamin J. Kinsey, U.S.S. on dates shown thereon.

— Retraced by Benjamin J. Kinsey, U.S.S. on dates shown thereon.

— Surveyed by Leroy R. Hanson, U.S. Transitman, on dates shown thereon.

- - - Resurveyed by Leroy R. Hanson, U.S.T., on dates shown thereon.

The surveys herein described, were executed on dates shown on diagram on page 1 hereof, by Benjamin J. Kinsey, U.S. Surveyor and Leroy R. Hanson, U.S. Transitman, using respectively Buff transit No. 9940 and Young & Son transit No. 8477. The instruments are equipped with full vertical circles, Smith solar attachments and otherwise conform to the standard requirements of the General Land Office. Unless otherwise stated all azimuth determinations are accomplished with the solar attachment.

PRELIMINARY FIELD TEST

of  
Buff Transit No. 9940

by  
Benjamin J. Kinsey, U. S. Surveyor.

October, 25, 1927, at station in camp, in Grand Canyon, Arizona, latitude  $36^{\circ}03\frac{1}{2}'N.$ , and approximate longitude  $112^{\circ}08'W.$ , examine the adjustments of the transit and find no errors; then to test the workings of the solar attachment proceed as follows:

At 5h. 21m., a.m., l.m.t., observe Polaris at western elongation, making four observations, two each with the telescope in direct and reversed positions and marking the mean point in the line thus determined by a tack set in top of stake driven firmly in the ground about 5 chs. N.

Azimuth of Polaris at western elongation :  $1^{\circ}20'25''$ .

Lay off the azimuth of Polaris  $1^{\circ}20\frac{1}{2}'$  to the east and mark the meridian thus determined by a tack set in top of peg driven firmly in the ground about 5 chs. N.

October 26, 1927,

At 9h. 00m., a.m., app.t., set off  $36^{\circ}03\frac{1}{2}'N.$ , on the lat. arc,  $12^{\circ}14'S.$ , on the decl. arc and determine a meridian with the solar which agrees with the true meridian.

At 12h. 00m., app. noon, with the lat. arc unchanged, observe the sun on the meridian; the resultant reading of the decl. arc is  $12^{\circ}17'S.$ , which agrees with the computed declination of the sun.

At 3h. 00m., p.m., app. t., with the lat. arc unchanged, set off  $12^{\circ}19'S.$ , on the decl. arc and determine a meridian with the solar which agrees with the true meridian.

As all of the observations, taken during the usual hours of solar work agree within 1' of the true meridian, conclude that the adjustments of the instrument are satisfactory.

Unless otherwise specified all measurements are made with a Lufkin steel tape 5 chs. in length, compared with a Lufkin Standard and found correct.

All measurements are made on the slope, the vertical angle determined and the slope measurements properly reduced to horizontal values.

PRELIMINARY FIELD TEST  
of  
Young & Son Transit No. 8477,  
by  
Leroy R. Hanson, U. S. Transitman.

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October 26, 1927, at same place and on same meridian, described on page 2 hereof, examine the adjustments of the transit and find no errors; then to test the workings of the solar apparatus proceed as follows:

At 9 h. 00 m., a. m., app. t., set off  $36^{\circ} 03\frac{1}{2}'$  N., on the latitude arc;  $12^{\circ} 14'$  S., on the declination arc and determine a meridian with the solar which agrees with the true meridian

At 12 h. 00 m., app. noon, with the latitude arc unchanged, observe the sun on the meridian; the resultant reading of the declination arc is  $12^{\circ} 17'$  S., which agrees with the calculated declination of the sun.

At 3 h. 00 m., p. m., app. t., with the latitude arc unchanged, set off  $12^{\circ} 19'$  S., on the declination arc and determine a meridian with the solar which agrees with the true meridian.

As all of the observations taken during the usual hours of solar work, agree within 1' of the true meridian, conclude that the instrument is in satisfactory adjustment.

Unless otherwise specified all measurements are made with a Lufkin steel tape 5 chs. in length, compared with a Lufkin Standard and found correct.

The measurements are made on the slope, the vertical angles determined and the slope measurements properly reduced to true horizontal values.

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## Retracement of Part of the East Boundary of T. 30 N., R. 3 E.

Chains The south five miles of the E. bdy. of T. 30 N., R. 4 E., were surveyed in 1900 by J. B. Pope, U. S. D. S., establishing all cor. thereon with a common reference to areas both sides of the line.

No retracement or resurvey of any part of this T. bdy. is of record.

The following notes describe a retracement of the East bdy. of Sec. 25, T. 30 N., R. 3 E.

The original cor. of secs. 25, 30, 31 and 36, is a limestone, 4 x 12, x 10 ins. above ground, firmly set, mkd. with 1 notch on S. edge and 5 notches on N. edge, and witnessed by four properly mkd. pine bearing trees, one each NE., SE., SW. and NW. of cor.

Thence

North, on random line, on E. bdy. of sec. 25 (S.  $\frac{1}{2}$ ). Over gently rolling land, thru scattering timber and undergrowth.

Ascend gradually over SW. slope.

- 8.33 Drain, course SW. Continue gradual ascent over SW. slope
- 25.50 Low spur, slopes W. Descend gradually over N. slope.
- 34.85 Ravine, course NW. Ascend 30 ft. over SW. slope to
- 39.33 Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 25 and 30, which is a sandstone 4 x 10, x 10 ins. above ground, firmly set, mkd.  $\frac{1}{4}$  on W. face, and witnessed by two bearing trees:

A pine 32 ins. diam., N.  $70\frac{1}{2}^{\circ}$  E., 55 lks. dist., mkd.  $\frac{1}{4}$  S 30 B T.

A pine 28 ins. diam., N.  $30\frac{1}{2}^{\circ}$  W., 30 lks. dist., mkd.  $\frac{1}{4}$  S 25 B T.

True course and dist. of the S.  $\frac{1}{2}$  of E. bdy. of sec. 25 are, therefore, North 39.33 chs.

Thence

North, on random line on E. bdy. of sec. 25 (N.  $\frac{1}{2}$ ).

Over rolling land, thru scattering timber and undergrowth.

Ascend 16 ft. over SW. slope.

- 2.73 Spur, slopes W. Desc. 96 ft. over N. slope.
- 7.00 Ravine, course W. Ascend 80 ft. over SW. slope.
- 13.27 Spur, slopes SE. Ascend gradually over E. slope to
- 18.22 Head of drain, course SE. Asc. 60 ft. over SE. slope.
- 28.30 Spur, slopes SW. Desc. 56 ft. over NW. slope.
- 38.42 Ravine, course SW. Ascend 26 ft. over S. slope to
- 39.82 Fall 6 lks. E. of the original cor. of secs. 19, 24, 25 and 30, which is a limestone 10 x 4, x 8 ins. above ground, firmly set, mkd. with 2 notches on S. edge and 4 notches on N. edge, and witnessed by four bearing trees:

A yellow pine, 28 ins. diam., N.  $59^{\circ}$  E., 99 lks. dist., mkd. T 30 N R 4 E S 19 B T.

A yellow pine, 26 ins. diam., S.  $72^{\circ}$  E., 160 lks. dist., mkd. T 30 N R 4 E S 30 B T.

A yellow pine, 28 ins. diam., S.  $29^{\circ}$  W., 67 lks. dist., mkd. T 30 N R 3 E S 25 B T.

A yellow pine, 28 ins. diam., N.  $69\frac{1}{2}^{\circ}$  W., 29 lks. dist., mkd. T 30 N R 3 E S 24 B T.

This cor. monument later altered to refer to secs. 24 and 25, only, as hereinafter described in notes of survey of subdivision line bet. Secs. 19 and 30, T. 30 N., R. 4 E.

True course and dist. of N.  $\frac{1}{2}$  of E. bdy. of sec. 25 are, therefore, N.  $0^{\circ} 5'$  W., 39.82 chs.

Land, rolling.

Soil, rocky, 4th rate.

Timber, pine and cedar.

Undergrowth, scrub oak.

## Resurvey of Part of the West Bdy. of T. 30 N., R. 4 E.

Chains The south five miles of the west boundary of T. 30 N., R. 4 E., were surveyed in 1900, by J. B. Pope, U. S. D. S., who established all corners thereon with a common reference to areas on both sides of the line, and terminated the line at a witness corner to the cor. of secs. 1, 6, 7 and 12, 60.30 chs. North of the cor. of secs. 7, 12, 13 and 18.

No retracement or resurvey of any part of this line is of record.

The portion of the line bet. secs. 19 and 24, forms part of the bdy. of the Grand Canyon National Park.

The following notes describe a resurvey of the west bdrs. of secs. 18 and 19, and S.  $\frac{1}{2}$  of the W. bdy. of sec. 7, T. 30 N., R. 4 E., reestablishing the  $\frac{1}{4}$  sec. cors. referring to secs. 18 and 19 at midpoints of W. bdrs. of said secs. and  $\frac{1}{4}$  sec. cor. of sec. 7 at 40.00 chs. in northing from the closing cor. of secs. 7 and 18, and altering all the original sec. and  $\frac{1}{4}$  sec. cors. on such portion of the line to refer to areas west of the line only.

## Retracement for Resurvey.

- From the original witness cor. to cor. of secs. 1, 6, 7 and 12, T. 30 N., Rs. 3 and 4 E., (19.70 chs. S. from cor. point).
- 20.30 South, on random line, on E. Bdy. sec. 12 (part of N.  $\frac{1}{2}$ ). (Record dist.) Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 7 and 12.  
True course and dist. of the N.  $\frac{1}{2}$  of E. bdy. of sec. 12 are, therefore, North 40.00 chs.  
Thence,
- 40.12 South, on random line, on E. bdy. of sec. 12 (S.  $\frac{1}{2}$ ). Intersect the original cor. of secs. 7, 12, 13 and 18.  
True course and dist. of the S.  $\frac{1}{2}$  of E. bdy. of sec. 12, are, therefore, North 40.12 chs.
- 40.00 South, on random line, on the East Bdy. of sec. 13 (N.  $\frac{1}{2}$ ). Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 13 and 18.  
True course and dist. of the N.  $\frac{1}{2}$  of E. bdy. of sec. 13 are, therefore, North 40.00 chs.  
Thence
- 40.08 South, on random line, on E. bdy. of sec. 13 (S.  $\frac{1}{2}$ ). Intersect the original cor. of secs. 13, 18, 19 and 24.  
True course and dist. of the S.  $\frac{1}{2}$  of E. Bdy. sec. 13 are, therefore, North 40.08 chs.
- 39.80 South, on random line, on E. Bdy. of sec. 24 (N.  $\frac{1}{2}$ ). Fall 9 lks. E. of the original  $\frac{1}{4}$  sec. cor. of secs. 19 and 24.  
True course and dist. of the N.  $\frac{1}{2}$  of the E. Bdy. of sec. 24 are, therefore, N. 0° 8' E., 39.80 chs.  
Thence,
- 39.62 South, on random line, on E. bdy. of sec. 24 (S.  $\frac{1}{2}$ ). Fall 11 lks. E. of the original cor. of secs. 19, 24, 25 and 30.  
True course and dist. of the S.  $\frac{1}{2}$  of the E. Bdy. of sec. 24 are, therefore, N. 0° 10' E., 39.62 chs.

## Resurvey of part of the West Bdy. of T. 30 N., R. 4 E.

Chains

RESURVEY.

- From the closing corner of secs. 19 and 30, hereinafter described.
- N.  $0^{\circ} 10'$  E., on true line, on W. Bdy. sec. 19.  
Over rolling land, thru dense timber and undergrowth.  
Asc. 80 ft. over broken S. slope.
- 3.00 Asc. 30 ft. over gradual S. slope.
- 25.00 Ridge, brs. E. and W. Desc. 58 ft. over N. slope.
- 33.00 Wash, 30 lks. wide, course NW. Asc. 34 ft. over SE. slope.
- 37.00 Over level ridge top, brs. E. and W.
- 38.87 (39.62 chs. N.  $0^{\circ} 10'$  E., from cor. of secs. 24 and 25).  
Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 19 and 24, which is a limestone 8 x 12 x 4 ins. above ground, firmly set, mkd.  $\frac{1}{4}$  on W. face, witnessed by two properly mkd. bearing trees, one each SE. and SW. of cor. Alter this cor. monument to refer to the quarters of sec. 24 only as follows:  
Destroy the markings on the SE. bearing tree and raise a mound of stone 3 ft. base,  $1\frac{1}{2}$  ft. high W. of cor. Thence N.  $0^{\circ} 8'$  E., on true line, continuing measurement of W. bdy. of sec. 19.
- 40.00 (Midpoint of W. Bdy. of sec. 19).  
Set an iron post 3 ft. long, 1 in. in diam., 18 ins. in the ground to bedrock, supported by a md. of stone, for reestablished  $\frac{1}{4}$  sec. cor. of sec. 19 only, with brass cap mkd.,
- $\frac{1}{4}$  S 19  
1927
- from which
- A yellow pine, 30 ins. in diam., brs. N.  $58^{\circ}$  E., 140 lks. dist., mkd.  $\frac{1}{4}$  S 19 B T.
- A yellow pine, 18 ins. diam., brs. S.  $54^{\circ}$  E., 165 lks. dist., mkd.  $\frac{1}{4}$  S 19 B T.
- Continue over level top of ridge.
- 53.00 Leave level and enter rolling land, desc. gradual N. slope.
- 56.40 Wash, 20 lks. wide, course W. Asc. gradual S. slope to
- 78.67 (39.80 chs. N.  $0^{\circ} 8'$  E. from  $\frac{1}{4}$  sec. cor. of sec. 24)  
Intersect the original cor. of secs. 13, 18, 19 and 24, which is a limestone 6 x 10 x 6 ins. above ground, firmly set, mkd. with three grooves on each of N. and S. edges, and witnessed by four properly mkd. bearing trees, one each NE., SE., SW. and NW. of cor. Alter this cor. monument to refer to secs. 13 and 24 only by destroying the markings on the NE. and SE. bearing trees.  
Thence  
North, on true line, continuing measurement of W. bdy. of sec. 19.
- 79.99 Intersect the closing cor. of secs. 18 and 19, hereinafter described.  
Land, rolling and level.  
Soil, rocky, 4th rate.  
Timber, yellow pine, oak and pinon.  
Undergrowth, scrub oak and catclaw.
- 
- From closing cor. of secs. 18 and 19,  
North, on true line, on W. bdy. of sec. 18.  
Over rolling land, thru dense timber and undergrowth.
- 0.90 Road, bears E. and W. slope.
- 30.00 Desc. 160 ft. over N. slope.
- 33.00 Wash, 20 lks. wide, course SW. Asc. 160 ft. over SE. slope

Resurvey of Part of the W. Bdy. of T. 30 N., R. 4 E.

- Chains
- 37.00 Over level land, to .
- 38.76 (40.08 chs. N. from cor. of secs. 13 and 24).  
Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 13 and 18, which is a limestone 6 x 10 x 6 ins. above ground, firmly set, mkd.  $\frac{1}{4}$  on W. face, and witnessed by one properly mkd. bearing tree, NE. of cor. The original SW. bearing tree is gone.  
Alter this cor. monument to refer to the quarters of sec. 13 only, by destroying the markings on the old bearing tree and establishing two new bearing trees:  
A yellow pine, 15 ins. in diam., S.  $74\frac{1}{2}^{\circ}$  W., 69 lks. dist., mkd.  $\frac{1}{4}$  S 13 B T, and  
An oak, 4 ins. in diam., N.  $61\frac{1}{2}^{\circ}$  W., 50 lks. dist., mkd. B T.  
Continue line and measurement.
- 40.18 (Midpoint of W. bdy. of sec. 18)  
Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished  $\frac{1}{4}$  sec. cor. of sec. 18 only, with brass cap mkd.,  
|  $\frac{1}{4}$  S 18  
1927  
from which  
A yellow pine, 10 ins. in diam., brs. N.  $79^{\circ}$  E., 61 lks. dist., mkd.  $\frac{1}{4}$  S 18 B T.  
An oak, 4 ins. in diam., brs. S.  $31\frac{1}{2}^{\circ}$  E., 54 lks. dist., mkd.  $\frac{1}{4}$  S 18 B T.
- 46.50 Wash, 40 lks. wide, course W.
- 58.00 Desc. 100 ft. over N. slope.
- 66.00 Wash, 30 lks. wide, course W. Asc. 100 ft. over S. slope.
- 71.50 Over level top to
- 78.76 (40.00 chs. N. from  $\frac{1}{4}$  sec. cor. of sec. 13).  
Intersect the original cor. of secs. 7, 12, 13 and 18, which is a limestone 3 x 8 x 12 ins. above ground, firmly set, mkd. with four grooves on S. edge and two grooves on N. edge, and witnessed by four properly mkd. bearing trees, one each NE., SE., SW. and NW. of cor.  
Alter this cor. monument to refer to secs. 12 and 13 only by destroying the markings on the NE. and SE. bearing trees.  
Continue line and measurement.
- 80.36 Intersect the closing cor. of secs. 7 and 18, hereinafter described.  
Land, rolling and level.  
Soil, rocky, 4th rate.  
Timber, yellow pine, oak and pinon.  
Undergrowth, scrub oak and catclaw.
- 
- From closing cor. of secs. 7 and 18.  
North, on true line, on W. bdy. of sec. 7 (S.  $\frac{1}{2}$ ).  
Over rolling land, thru dense timber and undergrowth.  
Asc. gradual S. slope.
- 5.00 Ridge, brs. E. and W. Desc. gradual NE. slope.
- 23.00 Wash, 10 lks. wide, course NW. Over nearly level land.
- 27.60 Telephone line, from Grand Canyon, Ariz., to Desert View, brs. NW. and SE.
- 28.10 New highway from Grand Canyon to Desert View, brs. NW. and SE.
- 38.52 (40.12 chs. N. from cor. of secs. 12 and 13).  
Intersect the original  $\frac{1}{4}$  sec. cor. of secs. 7 and 12,

## Resurvey of Part of the W. Bdy. of T. 30 N., R. 4 E.

Chains which is a limestone 6 x 8 x 8 ins., above ground, firmly set, marked  $\frac{1}{4}$  on W. face, and witnessed by two properly mkd. bearing trees, one each NE. and SW. of cor.

Alter this cor. monument to refer to the quarters of sec. 12, only, by destroying the markings on the NE. bearing tree, and establishing one new bearing tree, as follows:

A yellow pine, 20 ins. in diam., N.  $84^{\circ}$  W., 98 lks. dist., mkd.  $\frac{1}{4}$  S 12 B T.

Continue line and measurement.

40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for reestablished  $\frac{1}{4}$  sec. cor. of sec. 7, only, with brass cap marked

$\frac{1}{4}$  S 7  
1927

from which

A yellow pine, 40 ins. in diam., brs. N.  $41\frac{1}{2}^{\circ}$  E., 82 lks. dist., mkd.  $\frac{1}{4}$  S 7 B T.

A yellow pine, 26 ins. in diam., brs. S.  $75^{\circ}$  E., 17 lks. dist., mkd.  $\frac{1}{4}$  S 7 B T.

Land, rolling.

Soil, rocky, 4th rate.

Timber, yellow pine, oak and pinon.

Undergrowth, scrub oak and catclaw.

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Retracement of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains Part of the subdivision lines of T. 30 N., R. 4 E., were surveyed in 1904 by J. F. Hesse, U. S. D. S.

No retracement or resurvey of any part of said lines is of record, and no other survey of subdivision lines of this township is of record.

In November, 1926, under instructions for current Group No. 144, S. E. Blout, U. S. C. E., retraced the line bet. secs. 17 and 20, line bet. secs. 17 and 18, S. 1/2 of line bet. secs. 16 and 17, and W. 1/2 of line bet. secs. 8 and 17, and surveyed two tracts within sec. 17.

The following notes describe a retracement of: line bet. 22 and 23, line bet. secs. 22 and 27, S. 1/2 of line bet. secs. 21 and 22, W. 1/2 of line bet. secs. 15 and 22, the line bet. secs. 30 and 31, and S. 1/2 of line bet. secs. 29 and 30.

The original cor. of secs. 22, 23, 26 and 27, is a sandstone 4 x 12, x 6 ins. above ground, firmly set, marked with 2 notches on S. face and 2 notches on E. face, and witnessed by four bearing trees:

- A yellow pine, 30 ins. diam., N. 38° W., 79 lks. dist., mkd. T 30 N R 4 E S 22 B T.
- A yellow pine, 20 ins. diam., S. 51° E., 132 lks. dist., mkd. T 30 N R 4 E S 26 B T.
- A yellow pine, 36 ins. diam., S. 10° W., 44 lks. dist., mkd. T 30 N R 4 E S 27 B T.
- A yellow pine, 26 ins. diam., N. 77 1/2° E., 125 lks. dist., mkd. T 30 N R 4 E S 23 B T.

Thence N. 0° 1' W., on random line, bet. secs. 22 and 23 (S. 1/2). Over rolling land, thru dense timber and undergrowth. Descend 10 ft. over NE. slope.

- 1.00 Draw, course SE. Near head. Ascend 60 ft. over SE. slope.
- 7.50 Ridge, brs. NE. and SW. Descend 137 ft. over NW. slope.
- 8.64 Fence, brs. SW. and N. 1° E.
- 22.88 Highway, brs. NE. and SW.
- 24.27 Road, brs. E. and W.
- 24.67 Wash, 10 lks. wide, course NE. Ascend 51 ft. over SE. slope.
- 24.70 Old log fence, brs. E. and W.
- 28.50 Fence, brs. N. 5° E., and S. 5° W.
- 32.00 Top of ascent, brs. NE. and SW.
- Thence over nearly level land.
- 34.70 Same fence as at 28.50 ch. station, brs. N. 20 W., and S. 20° E.
- 35.30 Old log fence, brs. E. and W.
- 39.95 Intersect orig. 1/4 sec. cor. of secs. 22 and 23, which is a sandstone, 6 x 12, x 10 ins. above ground, firmly set in ground and surrounded by a mound of stone, mkd. 1/4 on W. face, and witnessed by two bearing trees:
  - A yellow pine, 28 ins. diam., S. 76° E., 6 lks. dist., mkd. 1/4 S 23 B T.
  - An oak, 8 ins. diam., N. 68° W., 35 lks. dist., mkd. 1/4 S 22 B T.

True course and dist. of S. 1/2 of line bet. secs. 22 and 23, are, therefore, N. 0° 1' W., 39.95 chs.

Thence N. 0° 1' W., on random line, bet. secs. 22 and 23 (N. 1/2). Over nearly level land, thru dense timber and undergrowth.

## Retracement of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

## Chains

- 5.00 Head of wash, course N. 10° E. Enter rolling land.  
Descend 35 ft. over NE. slope.
- 10.00 Descend 45 ft. over NW. slope.
- 14.70 Wash, 10 lks. wide, course NE.  
Ascend 25 ft. over SW. slope.
- 20.00 Spur, slopes SE. Set temp. 1-16 sec. cor.  
Descend 25 ft. over NE. slope.
- 35.00 Ascend 15 ft. over SE. slope to.
- 39.94 Fall 1 lk. E. of original cor. of secs. 14, 15, 22 and 23,  
which is a limestone 4 x 12, x 10 ins. above ground,  
firmly set, mkd. with 3 notches on S. face and 2  
notches on E. face, and witnessed by four bearing  
trees:
- A yellow pine, 20 ins. diam., N. 10½° W., 18 lks.  
dist., mkd. T 30 N R 4 E S 15 B T.
  - A yellow pine, 16 ins. diam., S. 46° E., 72 lks.  
dist., mkd. T 30 N R 4 E S 23 B T.
  - A yellow pine, 30 ins. diam., S. 16° W., 88 lks.  
dist., mkd. T 30 N R 4 E S 22 B T.
  - A yellow pine, 26 ins. diam., N. 46° E., 128 lks.  
dist., mkd. T 30 N R 4 E S 14 B T.
- True course and dist. of N. ½ of line bet. secs. 22 and  
23 are, therefore, N. 0° 2' W., 39.94 chs.
- Move the temp. 1-16 sec. cor. ½ lk. E., and 3 lks. S.,  
thus placing it at the midpoint of N. ½ of line bet.  
secs. 22 and 23.
- Land, rolling and nearly level.  
Soil, rocky, 3rd and 4th rate.  
Timber, pine.  
Undergrowth, scrub oak.

From orig. cor. of secs. 22, 23, 26 and 27, hereinbefore  
described,

S. 89° 59' W., on random line, bet. secs. 22 and 27 (E. ½)  
Over rolling land, thru dense timber and undergrowth.  
Ascend 40 ft. over E. slope.

- 5.00 Ridge, brs. NE. and SW. Descend 50 ft. over NW. slope.
- 6.50 Old road, brs. NE. and SW.
- 9.85 Telephone line, brs. NE. and SW.
- 11.80 Wash, 10 lks. wide, course NE. Enter mountainous land.  
Ascend 120 ft. over SE. slope.
- 14.50 Highway, brs. NE. and SW.
- 15.00 Fence, brs. NE. and SW.
- 20.00 Spur, slopes NE. Desc. 101 ft. over NW. slope.
- 28.20 Wash, 20 lks. wide, course NE. Asc. 165 ft. over SE.  
slope, to
- 40.20 Fall 1 lk. N. of the orig. ¼ sec. cor. of secs. 22 and  
27, which is a sandstone, 6 x 10, x 8 ins. above  
ground, firmly set, mkd. ¼ on N. face and witnessed  
by two bearing trees:
- A yellow pine, 36 ins. diam., N. 11° E., 11 lks.  
dist., mkd. ¼ S 22 B T.
  - An oak, 8 ins. diam., S. 45° E., 88 lks. dist.,  
mkd. ¼ S 27 B T.
- True course and dist. of E. ½ of line bet. secs. 22 and  
27 are, therefore, S. 89° 58' W., 40.20 chs.
- Thence
- S. 89° 59' W., on random line, bet. secs. 22 and 27 (W. ½)  
Over mountainous land, thru dense timber and undergrowth.  
Asc. 28 ft. over SE. slope.
- 1.00 Fence, brs. NW. and SE.
- 1.90 Ridge, brs. N. 10° E., and S. 5° E.  
Desc. 180 ft. over NW. slope.
- 7.66 Wash, 30 lks. wide, course N. Ascend 229 ft. over SE.  
slope.

## Retracement of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains  
 17.50 Ridge, brs. NE. and SW. Enter rolling land.  
 Descend 32 ft. over NW. slope.  
 29.70 Wash, 10 lks. wide, course N. Ascend 18 ft. over E. slope  
 33.00 Spur, slopes NE. Descend 20 ft. over NW. slope.  
 36.70 Wash, 10 lks. wide, course NE. Enter nearly level land.  
 Ascend slightly over SE. slope to  
 40.00 Intersect the orig. cor. of secs. 21, 22, 27 and 28,  
 which is a sandstone, 6 x 12, x 8 ins. above ground,  
 firmly set, mkd. with 2 notches on S. face and 3  
 notches on E. face and witnessed by four bearing trees:  
 A yellow pine, 26 ins. dia., N. 32° E., 63 lks.  
 dist., mkd. T 30 N R 4 E S 22 B T.  
 A yellow pine, 30 ins. dia., S. 31° E., 103 lks.  
 dist., mkd. T 30 N R 4 E S 27 B T.  
 An oak, 10 ins. dia., S. 9½° W., 48 lks. dist.,  
 mkd. T 30 N R 4 E S 28 B T.  
 An oak, 10 ins. dia., N. 66½° W., 52 lks. dist.,  
 mkd. T 30 N R 4 E S 21 B T.  
 True course and dist. of W. ½ of line bet. secs. 22 and  
 27 are, therefore, S. 89° 59' W., 40.00 chs.  
 Land, rolling, mountainous, and nearly level.  
 Soil, rocky, 3rd rate.  
 Timber, pine and oak.  
 Undergrowth, scrub oak.

From original cor. of secs. 21, 22, 27 and 28, herein-  
 after described.

N. 0° 2' W., on random line, bet. secs. 21 and 22 (S. ½),  
 on Park Boundary.

Over nearly level land, thru dense timber and under-  
 growth.

Ascend slightly over SE. slope to  
 40.02 Intersect the original ¼ sec. cor. of secs. 21 and 22,  
 which is a sandstone, 6 x 10, x 6 ins. above ground,  
 firmly set in ground, surrounded by a mound of stone,  
 and witnessed by two bearing trees:  
 A cedar, 14 ins. diam., N. 34° E., 9 lks. dist.,  
 mkd. ¼ S 22 B T.  
 A yellow pine, 18 ins. diam., S. 53° W., 52 lks.  
 dist., mkd. ¼ S 21 B T.  
 True course and dist. of S. ½ of line bet. secs. 21 and  
 22 are, therefore, N. 0° 2' W., 40.02 chs.  
 Land, nearly level.  
 Soil, rocky, 4th rate.  
 Timber, yellow pine, oak and pinon.  
 Undergrowth, scrub oak.

The original ¼ sec. cor. of secs. 15 and 22, is a sand-  
 stone 6 x 10, x 8 ins. above ground, firmly set, mkd.  
 ¼ on N. face, surrounded by a md. of stone and wit-  
 nessed by two bearing trees:

A yellow pine, 36 ins. diam., N. 66½° E., 92 lks.  
 dist., mkd. ¼ S 15 B T.

A yellow pine, 18 ins. diam., S. 6¼° E., 126 lks.  
 dist., mkd. ¼ S 22 B T.

Thence,  
 N. 89° 55' W., on random line, bet. secs. 15 and 22 (W. ½)  
 Over rolling land, thru dense timber and undergrowth.  
 Ascend 17 ft. over NE. slope to

3.00 Low ridge, brs. NW. and SE. Ascend 38 ft. to

## Retracement of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

## Chains

- 10.50 Same ridge, brs. NE. and SW. Descend 44 ft. over NW. slope.  
 10.60 A point from which a barn brs. N.  $57^{\circ}$  E., about 8 chs. dist.  
 13.60 Telephone line, brs. N. and S.  
 13.70 Road, brs. N. and SW.  
 17.20 Fence, brs. N. and S.  
 17.50 Wash, 20 lks. wide, course NE. Asc. 155 ft. over SE. slope.  
 20.50 Road, brs. SE. and SW.  
 36.00 Spur, slopes NE. Desc. 27 ft. over NW. slope to sec. cor.  
 36.50 Road, brs. N. and SW.  
 40.10 Intersect the original cor. of secs. 15, 16, 21 and 22, which is a sandstone, 6 x 14 x 8 ins., above ground, firmly set, mkd. with 3 notches on each of E. and S. faces, and witnessed by four bearing trees:  
 A yellow pine, 24 ins. diam., N.  $39^{\circ}$  E., 111 lks. dist., mkd. T 30 N R 4 E S 15 B T.  
 An oak, 10 ins. diam., S.  $40^{\circ}$  E., 100 lks. dist., mkd. T 30 N R 4 E S 22 B T.  
 A yellow pine, 18 ins. diam., S.  $69^{\circ}$  W., 98 lks. dist., mkd. T 30 N R 4 E S 21 B T.  
 A yellow pine, 20 ins. diam., N.  $16^{\circ}$  W., 93 lks. dist., mkd. T 30 N R 4 E S 16 B T.  
 True course and dist. of  $\frac{1}{4}$  of line bet. secs. 15 and 22 are, therefore, N.  $89^{\circ} 55'$  W., 40.10 chs.  
 Land, rolling.  
 Soil, rocky, 4th rate.  
 Timber, yellow pine, oak, juniper and pinon.  
 Undergrowth, scrub oak.

- Chains The original cor. of secs. 29, 30, 31 and 32 is a limestone 5 x 8, x 8 ins. above ground, firmly set, mkd. with 1 notch on S. face, and 5 notches on E. face, and witnessed by four bearing trees:  
 A yellow pine, 16 ins. diam., N.  $9^{\circ}$  E., 8 lks. dist., mkd. T 30 N R 4 E S 29 B T.  
 A yellow pine, 16 ins. diam., S.  $64\frac{1}{2}^{\circ}$  E., 32 lks. dist., mkd. T 30 N R 4 E S 32 B T.  
 A yellow pine, 26 ins. diam., S.  $36\frac{1}{2}^{\circ}$  W., 7 lks. dist., mkd. T 30 N R 4 E S 31 B T.  
 A yellow pine, 18 ins. diam., N.  $21\frac{1}{2}^{\circ}$  W., 172 lks. dist., mkd. T 30 N R 4 E S 30 B T.  
 Thence N.  $89^{\circ} 58'$  W., on random line, bet. secs. 30 & 31 ( $E.\frac{1}{2}$ )  
 Over nearly level land, thru dense timber and undergrowth.  
 11.70 Wash, 10 lks. wide, course S.  
 40.19 Fall 1 lk. N. of the orig.  $\frac{1}{4}$  sec. cor. of secs. 30 and 31, which is a limestone, 12 x 18, x 12 ins. above ground, firmly set, mkd.  $\frac{1}{4}$  on N. face, and witnessed by two bearing trees:  
 A yellow pine, 16 ins. diam., N.  $67\frac{1}{2}^{\circ}$  W., 33 lks. dist., mkd.  $\frac{1}{4}$  S 30 B T.  
 A yellow pine, 32 ins. diam., S.  $24\frac{3}{4}^{\circ}$  W., 12 lks. dist., mkd.  $\frac{1}{4}$  S 31 B T.  
 True course and dist. of  $E.\frac{1}{8}$  of line bet. secs. 30 and 31 are, therefore, N.  $89^{\circ} 59'$  W., 40.19 chs.  
 Thence N.  $89^{\circ} 58'$  W., on random line, bet. secs. 30 and 31 ( $W.\frac{1}{2}$ ).  
 Over nearly level land, thru dense timber and undergrowth.  
 10.66 Wash, 5 lks. wide, course SW.  
 27.60 Wash, 10 lks. wide, course SW. Enter gently rolling land, scattering timber and undergrowth.  
 Descend gradually over SW. slope to

## Retracement of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

## Chains

42.66 Fall 10 lks. S. of the orig. cor. of secs. 25, 30, 31 and 36, on W. bdy. of T., hereinbefore described.  
 True course and dist. of  $W. \frac{1}{2}$  of line bet. secs. 30 and 31 are, therefore, N.  $89^{\circ} 49'$  W., 42.66 chs.  
 Land, nearly level and gently rolling.  
 Soil, rocky, 3rd rate.  
 Timber, pine.  
 Undergrowth, scrub oak.

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 From orig. cor. of secs. 29, 30, 31 and 32.  
 N.  $0^{\circ} 3'$  W., on random line, bet. secs. 29 and 30 ( $S. \frac{1}{2}$ ).  
 Over nearly level land, thru dense timber and undergrowth.

40.19 Fall 2 lks. E. of the orig.  $\frac{1}{4}$  sec. cor. of secs. 29 and 30, which is a limestone, 8 x 10, x 6 ins. above ground, marked  $\frac{1}{4}$  on W. face, firmly set, surrounded by a md. of stone, and witnessed by two bearing trees:  
 A yellow pine, 32 ins. diam., N.  $86^{\circ}$  W., 19 lks. dist., mkd.  $\frac{1}{4}$  S 30 B T.  
 A yellow pine, 22 ins. diam., S.  $88\frac{1}{2}^{\circ}$  E., 81 lks. dist., mkd.  $\frac{1}{4}$  S 29 B T.  
 True course and dist. of  $S. \frac{1}{2}$  of line bet. secs. 29 and 30 are, therefore, N.  $0^{\circ} 5'$  W., 40.19 chs.  
 Land, nearly level.  
 Soil, rocky, 3rd rate.  
 Timber, pine.  
 Undergrowth, scrub oak.

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Resurvey of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains Part of the subdivision lines of T. 30 N., R. 4 E., were surveyed by J. F. Hesse, U. S. D. S., in 1904.

No retracement or resurvey of any part of said lines is of record, and no other survey of subdivision lines of this T. is of record.

In Nov. 1926, under instructions for current Group No. 144, S. E. Blout, U. S. C. E., retraced; line bet. secs. 17 and 20, line bet. secs. 17 and 18, S. 1/2 of line bet. secs. 16 and 17, and W. 1/2 of line bet. secs. 8 and 17, and surveyed two tracts within sec. 17.

The following notes describe a resurvey of; N. 1/2 of line bet. secs. 21 and 22, E. 1/2 of line bet. secs. 15 and 22, and the N. 1/2 of line bet. secs. 29 and 30.

Retracement for Resurvey.

From orig. 1/4 sec. cor. of secs. 21 and 22. N. 0° 2' W., on random line, bet. secs. 21 and 22 (N. 1/2) 20.00 Set temp. 1-16 sec. cor. 39.94 Intersect the orig. cor. of secs. 15, 16, 21 and 22. True course and dist. of N. 1/2 of line bet. secs. 21 and 22 are, therefore, N. 0° 2' W., 39.94 chs. Move the temp. 1-16 sec. cor. S. 0° 2' E., 3 lks., thus placing it at the mid point of N. 1/2 of line bet. secs. 21 and 22.

From orig. cor. of secs. 14, 15, 22 and 23. N. 89° 55' W., on random line, bet. secs. 15 and 22 (E. 1/2) 14.39 (950 ft.). Set temp. cor. of Grand Canyon National Park bdy. 40.02 Intersect the orig. 1/4 sec. cor. of secs. 15 and 22. True course and dist. of E. 1/2 of line bet. secs. 15 and 22 are, therefore, N. 89° 55' W., 40.02 chs.

From orig. 1/4 sec. cor. of secs. 29 and 30. N. 0° 3' W., on random line, bet. secs. 29 and 30 (N. 1/2) 39.95 Fall 7 lks. W. of the orig. cor. of secs. 19, 20, 29 and 30. True course and dist. of N. 1/2 of line bet. secs. 29 and 30 are, therefore, N. 0° 3' E., 39.95 chs.

RESURVEY.

From orig. 1/4 sec. cor. of secs. 21 and 22, hereinbefore described, N. 0° 2' W., on true line, bet. secs. 21 and 22 (N. 1/2), on Park Boundary. Over nearly level land, thru dense timber and scattering undergrowth. 2.85 Old road, brs. E. & W. 9.95 Leave nearly level and enter mountainous land, brs. NE. and SW. Desc. 153 ft. over NW. slope to 19.97 (Midpoint) Set an iron post, 3 ft. long, 2 ins. in diam., 18 ins. in the ground to bedrock, and raise a md. of stone around post, for a cor. of the Grand Canyon National Park Bdy., at the point for 1-16 sec. cor. of secs. 21 and 22, with brass cap marked

Resurvey of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains

G C N P

S 22

1927

from which

- A yellow pine, 24 ins. diam., brs. N. 20° E., 26 lks. dist., mkd. G C N P S 22 B T.
- A yellow pine, 20 ins. diam., brs. S. 30° E., 55 lks. dist., mkd. T 30 N R 4 E S 22 B T.
- A yellow pine, 18 ins. diam., brs. S. 88½° W., 25 lks. dist., mkd. G C N P S 21 B T.
- A yellow pine, 18 ins. diam., brs. S. 45° E., 83 lks. dist., mkd. T 30 N R 4 E S 22 B T.

The Grand Canyon National Park Bdy., extends southerly from this cor. along the sec. line, and easterly along the latitudinal 1-16 sec. line of N. ½ of sec. 22.

Leave Park Bdy. Descend 20 ft. over NW. slope.

21.00 Wash, 30 lks. wide, course NE. in bottom of ravine. Ascend 107 ft. over SE. slope.

25.00 New highway, Grand Canyon, Ariz., to Desert View, brs. NE. and SW.

31.50 Telephone line brs. NE. and SW.; on top of spur sloping NE. Enter rolling land. Desc. 62 ft. over NW. slope to sec. cor.

34.30 Road, brs. NE. and SW.

39.94 Intersect the original cor. of secs. 15, 16, 21 and 22, hereinbefore described.

Land, nearly level, mountainous and rolling.

Soil, rocky, 4th rate.

Timber, yellow pine, oak and pinon.

Undergrowth, scrub oak.

From orig. cor. of secs. 14, 15, 22 and 23, hereinbefore described.

N. 89° 55' W., on true line, bet. secs. 15 and 22 (E. ½) on Park Bdy.

Over rolling land, thru dense timber and undergrowth. Ascend slightly over SE. slope.

1.50 Ridge, brs. N. 60° E., and S. 60° W. Descend 15 ft. over NW. slope.

2.00 Wire fence, brs. N. 15° E., and S. 15° W.

5.10 Wash, 20 lks. wide, course NE. Ascend 16 ft. over SE. slope.

8.00 Point of low spur, slopes S. Desc. 10 ft. over SW. slope.

9.00 Wash, 10 lks. wide, course SE. Enter mountainous land. Asc. 33 ft. over NE. slope to

14.39 (950 ft.) Set an iron post, 3 ft. long, 2 ins. in diam. 18 ins. in the ground to bed rock, and raise a md. of stone around post, for a cor. of the Grand Canyon National Park Bdy., with brass cap marked

G C N P

S 22

1927

from which

- An oak, 5 ins. diam., brs. N. 21½° E., 19 lks. dist., mkd. G C N P S 15 B T.
- A yellow pine, 30 ins. diam., brs. S. 69° E., 84 lks. dist., mkd. T 30 N R 4 E S 22 B T.
- A yellow pine, 18 ins. diam., brs. S. 11° E., 61 lks. dist., mkd. T 30 N R 4 E S 22 B T.

## Resurvey of Part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains An oak, 5 ins. diam., brs. S. 56 W., 21 lks. dist.  
mkd. G C N P S 22 B T.  
The Grand Canyon National Park Bdy. extends easterly  
from this cor. along the sec. line, and due South in  
Sec. 22 to intersection with the latitudinal 1-16  
sec. line of the N.  $\frac{1}{2}$  of sec. 22. Leave Park Bdy.  
Ascend 100 ft. over NE. slope.

23.00 Spur, slopes SE. Enter rolling land. Ascend gradually  
over S. slope.

27.30 Ridge, brs. NE. and SW. Descend 70 ft. over NW. slope.

35.50 Wash 20 lks. wide, course NE. Asc. 46 ft. over NE. slope  
to

40.02 Intersect the orig.  $\frac{1}{4}$  sec. cor. of secs. 15 and 22, here-  
inbefore described.  
Land, rolling and mountainous.  
Soil, rocky, 4th rate.  
Timber, yellow pine, oak, juniper and pinon.  
Undergrowth, scrub oak.

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From orig.  $\frac{1}{4}$  sec. cor. of secs. 29 and 30, hereinbefore  
described.

N.  $0^{\circ} 3' E.$ , on true line, bet. secs. 29 and 30 (N.  $\frac{1}{2}$ ).  
Over nearly level land, thru dense timber and scatter-  
ing undergrowth.

11.00 Leave nearly level, and enter mountainous land, dense  
timber and undergrowth. Descend 70 ft. over N. slope  
to

14.65 Wash, 10 lks. wide, course NW.  
Descend 25 ft. over NW. slope to

17.00 Wash, 10 lks. wide, course W.  
Ascend 89 ft. over S. slope.

21.00 Spur, slopes W. Descend 60 ft. over N. slope.

27.20 Wash, 10 lks. wide, course W.  
Ascend 75 ft. over SW. slope to

33.80 Wash, 10 lks. wide, course SW. Enter rolling land.  
Ascend 20 ft. over SW. slope to

39.95 Intersect the original cor. of secs. 19, 20, 29 and 30,  
which is a limestone 8 x 10, x 14 ins. above ground,  
mkd. with 2 notches on S. face and 5 notches on E.  
face, firmly set, surrounded by a md. of stone, and  
witnessed by three bearing trees:  
A yellow pine, 14 ins. diam., N.  $82\frac{1}{2}^{\circ} E.$ , 49  
lks. dist., mkd. T 30 N R 4 E S 20 B T.  
A yellow pine (dead) 14 ins. diam., S.  $4^{\circ} E.$ , 106  
lks. dist., mkd. T 30 N R 4 E S 29 B T.  
A yellow pine, 10 ins. diam., N.  $84\frac{1}{2}^{\circ} W.$ , 47  
lks. dist., mkd. T 30 N R 4 E S 19 B T.  
There is no trace of the orig. SW. bearing tree.  
Reconstruct this cor. monument as follows:  
Remove the mound of stone from around old stone, and  
alongside same set an iron post 3 ft. long, 2 ins. in  
diam., 8 ins. in the ground to bed rock, and rebuild  
the md. of stone around the old corner stone and the  
iron post, for cor. of secs. 19, 20, 29 and 30, with  
brass cap marked

T 30 N	R 4 E
S 19	S 20
S 30	S 29
1920	

and establish two new bearing trees as follows:

An oak, 10 ins. diam., brs. S.  $79^{\circ} E.$ , 78 lks.

dist., mkd. T 30 N R 4 E S 29 B T.

A yellow pine, 6 ins. diam., brs. S.  $36\frac{1}{2}^{\circ} W.$ , 108  
lks. dist., mkd. T 30 N R 4 E S 30 B T.



## Survey of Subdivision of Part of Sec. 22, T. 30 N., R. 4 E.

Chains The following notes describe a subdivision of part of sec. 22, T. 30 N., R. 4 E., for the purpose of defining a part of the Bdy. of the Grand Canyon National Park therein. The Park Bdy. extends from the sixteenth section cor. on W. Bdy. of said sec. easterly on the latitudinal 1-16 section line in the N.  $\frac{1}{2}$  of the section to a point due South of a point on N. Bdy. of the section, 950 ft. N.  $89^{\circ} 55' W.$ , from the cor. of secs. 14, 15, 22 and 23.

- - - - -

From the  $\frac{1}{4}$  sec. cor. of secs. 22 and 27, on S. bdy. of sec. 22, N.  $0^{\circ} 8' E.$ , on random meridional  $\frac{1}{4}$  sec. line of sec. 22, for distance only, the flag on objective  $\frac{1}{4}$  sec. cor. being visible.

40.00 Set temp. center cor. Continue line and measurement.  
80.04 Intersect the  $\frac{1}{4}$  sec. cor. of secs. 15 and 22, hereinbefore described.

True course and dist. of the meridional  $\frac{1}{4}$  sec. line of sec. 22 are, therefore, N.  $0^{\circ} 8' E.$ , 80.04 chs.

- - - - -

From the  $\frac{1}{4}$  sec. cor. of secs. 22 and 23.

West, on random latitudinal  $\frac{1}{4}$  sec. line of Sec. 22.

40.12 Intersect the meridional  $\frac{1}{4}$  sec. line at 18 lks. S.  $0^{\circ} 8' W.$  of the temp. center cor. set thereon, hereinbefore described.

Continue line and measurement.

80.25 Fall 24 lks. S. of the  $\frac{1}{4}$  sec. cor. of secs. 21 and 22, hereinbefore described.

True course and dist. of the latitudinal  $\frac{1}{4}$  sec. line of sec. 22 are, therefore, S.  $89^{\circ} 50' E.$ , 80.25 chs.

Thence

S.  $89^{\circ} 50' E.$ , on true latitudinal  $\frac{1}{4}$  sec. line of sec. 22, (W.  $\frac{1}{2}$ )

40.13 Intersect the meridional  $\frac{1}{4}$  sec. line at 6 lks. S.  $0^{\circ} 8' W.$ , from temp. center cor., thereon hereinbefore described.

Move this temp. center cor. to this point of intersection, which determines the N.  $\frac{1}{2}$  of the meridional  $\frac{1}{4}$  sec. line of sec. 22 to be 40.10 chs. in length.

Thence

N.  $0^{\circ} 8' E.$ , on true meridional  $\frac{1}{4}$  sec. line of sec. 22 (N.  $\frac{1}{2}$ )

20.05 Set temp. 1-16 sec. cor.

40.10 Intersect the  $\frac{1}{4}$  sec. cor. of secs. 15 and 22.

- - - - -

From the Park Bdy. cor. on the E.  $\frac{1}{2}$  of line bet. secs. 15 and 22, hereinbefore described.

South on random Park Bdy. in sec. 22.

20.00 Set temp. Park Bdy. Cor.

- - - - -

From temp. 1-16 sec. cor. on N.  $\frac{1}{2}$  of line bet. secs. 22 and 23.

West, on random latitudinal 1-16 sec. line, thru NE.  $\frac{1}{4}$  of sec. 22.

14.41 Fall 1 lk. N. of the temp. Park Bdy. cor.

Continue line and measurement.

39.98 Fall 4 lks. S. of temp sixteenth sec. cor. on meridional  $\frac{1}{4}$  sec. line of sec. 22.

Thence,

West, on random latitudinal 1-16 sec. line thru NW.  $\frac{1}{4}$  of sec. 22.

## Survey of Subdivision of Part of Sec. 22, T. 30 N., R. 4 E.

Chains  
 40.13 Fall 4 lks. S. of cor. of Grand Canyon National Park Bdy, hereinbefore described, at point for 1-16 sec. cor. of secs. 21 and 22.  
 Thence  
 S. 89° 57' E., on true line, on Grand Canyon National Park Bdy., which is identical with latitudinal 1-16 sec. line in N.  $\frac{1}{2}$  of Sec. 22.  
 Over rolling land, thru dense timber and undergrowth.  
 Desc. gradual NE. slope.  
 2.45 Wash, 10 lks. wide, course N. Asc. 95 ft. over NW. slope.  
 15.90 Ridge, brs. NE-SW. Desc. 159 ft. over SE. slope.  
 27.90 Wash, 10 lks. wide, course NE. Asc. 12 ft. over NW. slope.  
 30.95 Wire fence, brs. NW-SE.  
 31.30 Log fence, brs. N-S. Asc. gradual NW. slope.  
 35.60 Spur, slopes S. Desc. along S. slope, 68 ft.  
 48.00 Wash, 20 lks. wide, course NE. Asc. 124 ft. over SW. slope.  
 Telephone line, brs. NE-SW.  
 49.00 Road, brs. NE-SW.  
 61.15 Old Indian house ruins, on line.  
 61.60 Ridge, brs. NE-SW. Desc. along gradual East slope.  
 65.70 Intersect random Park Bdy. at 2 lks. N. of the temp. cor. set at 20.00 chs. due south from a Park Bdy. Cor. on the line bet. secs. 15 and 22.  
 At intersection set an iron post, 3 ft. long, 2 ins. in diam., 18 ins. in the ground, to bedrock, deposit a stone mkd. with a cross (X) at base of post, supported by a md. of stone, for cor. of Grand Canyon National Park Bdy., with brass cap marked

G C N P  
 S 2 2  
 1927

from which

- A yellow pine, 30 ins. in diam., brs. N. 45° W., 15 lks. dist., mkd. G C N P S 22 B T.
- A yellow pine, 20 ins. in diam., brs. S. 69 $\frac{1}{2}$ ° E., 22 lks. dist., mkd. T 30 N R 4 E S 22 B T.
- A yellow pine, 18 ins. in diam., brs. S. 13° W., 48 lks. dist., mkd. T 30 N R 4 E S 22 B T.

Thence,  
 North, on true line, on Park Bdy., in sec. 22  
 Over level ridge top, brs. NE-SW.  
 5.00 Desc. 123 ft. over NW. slope.  
 10.10 Old log fence, brs. NW-SE.  
 14.00 Wash, 20 lks. wide, course NE. Asc. gradual SE. slope.  
 14.10 New highway, brs. E.-W.  
 17.40 Spur, slopes E. Desc. gradual NE. slope to  
 19.98 The cor. of Grand Canyon National Park Bdy., on sec. line bet. secs. 15 and 22, hereinbefore described.  
 Land, rolling.  
 Soil, rocky, 4th rate.  
 Timber, oak, yellow pine, juniper and pinon.  
 Undergrowth, scrub oak.

Boundaries of Section 22, T. 30 N., R. 4 E. Latitudes, Departures and Closing Errors.						
Line designated	True course	Dist- ance.	Latitudes		Departures	
			N.	S.	E.	W.
South Boundary	S. 89° 58' W.	40.20		.02		40.20
	S. 89° 59' W.	40.00		.01		40.00
West Boundary	N. 0° 2' W.	40.02	40.02			.02
	N. 0° 2' W.	39.94	39.94			.02
North Boundary	S. 89° 55' E.	40.10		.06	40.10	
	S. 89° 55' E.	40.02		.06	40.02	
East Boundary	S. 0° 2' E.	39.94		39.94	.02	
	S. 0° 1' E.	39.95		39.95	.01	
Convergency					.01	
<b>Totals</b>			<b>79.96</b>	<b>80.04</b>	<b>80.16</b>	<b>80.24</b>
				79.96		80.16
<u>Error in latitude</u>				0.08		
<u>Error in departure</u>					0.08	

Boundaries of that portion of Grand Canyon National Park situated within Sec. 22, T. 30 N., R. 4 E. Latitudes, Departures and Closing Errors.						
Line designated.	True course	Dist- ance	Latitudes		Departures	
			N.	S.	E.	W.
G. C. N. Park Boundary.	N. 89° 57' W.	65.70	.06			65.70
W. Bdy. of Sec. 22	N. 0° 2' W.	19.97	19.97			.01
N. bdy. of Sec. 22	S. 89° 55' E.	65.73		.09	65.73	
G.C.N.Park Bdy.	South	19.98		19.98		
<b>Totals</b>			<b>20.03</b>	<b>20.07</b>	<b>65.73</b>	<b>65.71</b>
				20.03	65.71	
<u>Error in latitude</u>				0.04		
<u>Error in departure</u>					0.02	

## Survey of part of the Subdivisional lines of T. 30 N., R. 4 E.

- Chains The original cor. of secs. 13, 14, 23 and 24 is a limestone 4 x 12 x 6 ins. above ground, firmly set, mkd. with three grooves on south and 1 groove on east faces, witnessed by four properly marked bearing trees, one each NE., SE., SW. and NW. of cor.
- A road, bearing NW-SE. brs. S. 10 lks. dist. N. 0° 1' W., on true line, bet. secs. 13 and 14, on part of the Bdy. of the Grand Canyon National Park.
- Over rolling land, thru heavy timber and scattering undergrowth.
- Over level bottom of draw.
- 1.45 Wash, 10 lks. wide, course SE.  
Asc. 46 ft. over SW. slope.
- 5.00 Over nearly level bench, brs. NW-SE.
- 35.00 Leave top, brs. NE-SW., desc. 28 ft. over NW. slope.
- 38.80 Wash, 50 lks. wide, course SW. Over level draw bottom to
- 40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in the ground for the  $\frac{1}{4}$  sec. cor. of secs. 13 and 14, with brass cap marked

$\frac{1}{4}$   
 S 14 | S 13  
 1927

from which

- A yellow pine, 36 ins. in diam., brs. S. 9° E., 84 lks. dist., mkd.  $\frac{1}{4}$  S 13 B T.
- A yellow pine, 20 ins. in diam., brs. N. 84° W., 45 lks. dist., mkd.  $\frac{1}{4}$  S 14 B T.
- Asc. gradual SE. slope.
- 41.30 Indian trail, brs. NE-SW.
- 55.00 Over nearly level top of broad bench, brs. NE-SW.
- 65.45 Telephone line, brs. NE-SW.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 20 ins. in the ground to bed rock, supported by a md. of stone, for the cor. of secs. 11, 12, 13 and 14, with brass cap marked

T 30 N | R 4 E  
 S 11 | S 12  
 S 14 | S 13  
 1927

from which

- A cedar, 12 ins. in diam., brs. N. 13° E., 39 lks. dist., mkd. T 30 N R 4 E S 12 B T.
- A pinon, 10 ins. in diam., brs. S. 64° E., 24 lks. dist., mkd. T 30 N R 4 E S 13 B T.
- A pinon, 8 ins. in diam., brs. S. 12 $\frac{1}{2}$ ° W., 56 lks. dist., mkd. T 30 N R 4 E S 14 B T.
- A pinon, 9 ins. in diam., brs. N. 25° W., 40 lks. dist., mkd. T 30 N R 4 E S 11 B T.
- Land, rolling and nearly level.  
Soil, rocky, 4th rate.  
Timber, oak, cedar and pinon and yellow pine.  
Undergrowth, oak brush.

- N. 89° 59' E., on random line, bet. secs. 12 and 13.
- 40.00 Set temp.  $\frac{1}{4}$  sec. cor.
- 80.08 Fall 12 lks. S. of the original cor. of secs. 7, 12, 13 and 18 on the E. bdy., of Tp., established by J. F. Hesse, U. S. D. S., 1904, which is a limestone 6 x 10 x 5 ins., above ground, firmly set, mkd. with four grooves on S. and two grooves on the N. faces, wit-

## Survey of part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains      nessed by four properly mkd. bearing trees, one each  
 NE., SE., SW. and NW. of cor.  
 Thence,  
 S. 89° 54' W., on true line, bet. secs. 12 and 13, on  
 part of the Bdy. of the Grand Canyon Natl. Park  
 Over rolling land, thru heavy timber and scattering under-  
 growth. Asc. 23 ft. over gradual NE. slope.  
 13.50 Over level land, brs. NW-SE.  
 18.00 Desc. gradual W. slope.  
 32.00 Wash, 20 lks. wide, course S.  
 Asc. gradual E. slope..  
 33.60 Spur, slopes S.  
 39.10 Wash, 5 lks. wide, course S.. Asc. gradual SE. slope.  
 40.04 Set an iron post 3 ft. long, 1 in. in diam., 12 ins. in  
 the ground to bedrock, supported by a md. of stone,  
 for the  $\frac{1}{4}$  sec. cor. of secs. 12 and 13, with brass  
 cap marked

$\frac{1}{4}$   $\frac{S 12}{S 13}$   
 1927

from which

A pinon, 12 ins. in diam., brs. N. 11° E., 48 lks.  
 dist., mkd.  $\frac{1}{4}$  S 12 B T.

A pinon, 10 ins. in diam., brs. S. 35 $\frac{1}{2}$ ° E., 20  
 lks. dist., mkd.  $\frac{1}{4}$  S 13 B T.

Asc. gradual SE. slope.

48.00 Level spur, top, 3 cha. wide, slopes S.  
 Desc. gradual W. slope.

52.85 Wash, 20 lks. wide, course S. Descend along S. slope

53.60 Telephone line, brs. NE-SW.

53.80 Wash, (E. edge) course S. Across bottom.

55.10 W. edge. Asc. 40 ft. over E. slope.

60.00 Over level top.

78.00 Desc. 34 ft. over W. slope to

80.08 Intersect the cor. of secs. 11, 12, 13 and 14, herein-  
 before described.

Land, rolling and level.

Soil, rocky, 4th rate.

Timber, oak, pinon, juniper and yellow pine.

Undergrowth, oak brush.

-----  
 West, on true line, bet. secs. 11 and 14.

Over rolling land, thru heavy timber and thick under-  
 growth. Asc. gradual SE. slope.

4.50 Over nearly level ridge top, brs. N-S.

14.10 Desc. 20 ft. over gradual W. slope.

18.10 Wash, 30 lks. wide, course S. Asc. gradual E. slope.

22.00 Spur, slopes S. Desc. gradual W. slope.

37.00 Desc. 20 ft. over W. slope to

40.00 Set an iron post 3 ft. long, 1 in. in diam., 12 ins. in  
 the ground to bedrock, supported by a md. of stone  
 for the  $\frac{1}{4}$  sec. cor. of secs. 11 and 14, with brass  
 cap mkd.

$\frac{1}{4}$   $\frac{S 11}{S 14}$   
 1927

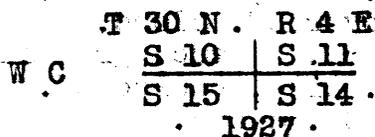
from which

A cedar, 4 ins. diam. brs. N. 57° W., 44 lks.  
 dist., mkd.  $\frac{1}{4}$  S 11 B T.

A pinon, 6 ins. diam. brs. S. 30 $\frac{1}{2}$ ° W., 22 lks.  
 dist., mkd. B. T.

Survey of part of the Subdivisional Lines of T. 30 N., R. 4 E.

- Chains Desc. gradual W. slope.
- 41.80 Wash, 10 lks. wide, course SW. Old road, brs. NE-SW.  
Asc. gradual SE. slope.
- 44.50 Level top of broad ridge, brs. NE-SW.
- 53.50 New Highway (Grand Canyon to Desert View), brs. NE-SW.
- 55.00 Desc. gradual W. slope.
- 67.30 Shallow wash, 10 lks. wide, course NE. Asc. gradual E. slope to
- 72.76 Set an iron post, 3 ft. long, 1 in. in diam., (no 2 in. post available) 4 ins. in the ground to bed rock, deposit a stone mkd. with a cross (X) at base of post, supported by a md. of stone, for the witness cor. to cor. of secs 10, 11, 14 and 15 with brass cap mkd.



from which,  
A pinon, 5 ins. in diam., brs. S. 81° E., 25 lks. dist., mkd. T 30 N R 4 E S 14 W C B T.

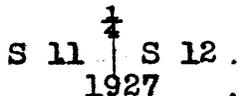
No other trees available.

- 72.90 Rim of the Grand Canyon of the Colorado River, brs. NE-SW.
  - 80.00 True point for cor. of secs. 10, 11, 14 & 15, falls in the canyon where it is inaccessible. Witness cor. established at 7.24 chs. E. as described above.
- Land, rolling and level.  
Soil, rocky, 4th rate.  
Timber, oak, cedar, pinon and yellow pine.  
Undergrowth, scrub oak.

-----  
From cor. to secs. 11, 12, 13 and 14, N. 0° 1' W., on true line, bet. secs. 11 and 12.

Over rolling land, thru dense timber and undergrowth.  
Asc. gradual S. slope.

- 30.00 Ridge, brs. NE-SW. Over level top.
- 40.00 Set an iron post 3 ft. long, 1 in. in diam., 14 ins. in the ground, to bedrock, supported by a md. of stone, for the 1/4 sec. cor. of secs. 11 and 12, with brass cap mkd



from which

A cedar, 6 ins. in diam., brs. N. 3 1/2° E., 66 lks. dist., mkd. 1/4 S 12 B T.

A cedar, 4 ins. in diam., brs. S. 27° W., 34 lks. dist., mkd. B T.

- 49.00 Shallow wash, course SE.
  - 58.55 New highway, from Grand Canyon to Desert View, brs. E. and W.
  - 62.80 Old road, brs. E.-W.
  - 67.60 Rim of the Grand Canyon, brs. NE-SW. The remainder of the sec. line falls in the Canyon, therefore, the N. 1/2 of the line bet. secs. 11 and 12, is unsurveyable.
- Land, rolling and level.  
Soil, rocky, 4th rate.  
Timber, cedar, pinon and yellow pine.  
Undergrowth, scrub oak.
-

## . Survey of part of the Subdivisional lines of T. 30 N., R. 4 E.

Chains The corner of secs. 1, 6, 7 and 12, on the E. Bdy. of Tp., established by J. F. Hesse, U. S. D. S., 1904, is a limestone 10 x 18 x 6 ins. above ground, firmly set, and marked with five grooves on S. face and one groove on N. face, witnessed by four properly mkd. bearing trees, one each NE., SE., SW. and NW. of cor.

Thence  
West, on true line, bet. secs. 1 and 12.  
Over rolling land, thru dense timber and undergrowth.  
Desc. gradual W. slope.

5.50 Wash, 10 lks. wide, course SW.  
Asc. 37 ft. over SE. slope.

16.00 Ridge, brs. N-S. Desc. gradual W. slope.

19.40 Wash, 10 lks. wide, course SW.  
Asc. 19 ft. over SE. slope.

24.50 Ridge, brs. N-S. Desc. gradual W. slope.

36.70 Wash, 10 lks. wide, course SE.  
Asc. gradual SE. slope.

37.35 Ridge, brs. N-S. Over level top.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for the  $\frac{1}{4}$  sec. cor. of secs. 1 and 12, with brass cap marked.

$\frac{1}{4}$   $\frac{S 1}{S 12}$   
1927

from which,

A pinon, 10 ins. in diam., brs. N.  $36\frac{1}{2}^{\circ}$  E., 58 lks. dist., mkd.  $\frac{1}{4}$  S 1 B T.

A pinon, 8 ins. in diam., brs. S.  $36^{\circ}$  E., 29 lks. dist., mkd.  $\frac{1}{4}$  S 12 B T.

Asc. gradual SE. slope.

41.20 New highway, Grand Canyon to Desert View, brs. NE-SW.  
Over level stony ground.

49.94 Rim of the Grand Canyon, brs. NE-SW.

The remainder of the sec. line falls in the Canyon, therefore the west half of the line between secs. 1 and 12 is unsurveyable.

Land, rolling and level.

Soil, rocky, 4th rate.

Timber, cedar, pinon and yellow pine.

Undergrowth, oak brush.

From the cor. of secs. 19, 20, 29 and 30, hereinbefore described.

West, on true line, bet. secs. 19 and 30, on part of the Grand Canyon National Park Bdy.

Over rolling land, thru scattering timber and undergrowth.  
Desc. gradual W. slope.

2.00 Wash, 10 lks. wide, course SW. Asc. gradual E. slope.

6.20 Spur, slopes S. Desc. gradual W. slope.

12.10 Wash, near head, course S. Asc. gradual SE. slope.

23.00 Ridge, brs. NE-SW. Over level top.

27.00 Desc. gradual NW. slope.

27.70 Wash, near head, course NW. Asc. gradual NE. slope.

29.00 Over level top of same ridge, brs. SE. and SW.

40.00 Set an iron post 3 ft. long, 1 in. in diam., 12 ins. in ground to bed rock and raise a md. of stone around post, for  $\frac{1}{4}$  sec. cor. of secs. 19 & 30, with brass cap marked

$\frac{1}{4}$   $\frac{S 19}{S 30}$   
1927

Survey of part of the Subdivisional lines of T. 30 N., R. 4 E.

Chains from which

A pine, 12 ins. diam., brs. N. 12 ins. diam., brs. N. 15 1/4° E., 25 lks. dist., mkd. 1/4 S 19 BT.

A pine, 10 ins. diam., brs. S. 37 1/2° W., 22 lks. dist., mkd. 1/4 S 30 B T.

Desc. gradual W. slope.

48.50 Wash, 10 lks. wide, course NW. Asc. gradual NE. slope.

54.00 Spur, slopes N. Desc. gradual NW. slope.

56.00 Wash, near head, course NW. Asc. gradual NE. slope.

60.00 Spur, slopes N. Enter dense undergrowth.

Desc. 115 ft. over NW. slope.

70.00 Enter wash, 20 lks. wide, course W., from NE. Leave dense and enter scattering undergrowth.

Desc. gradually down wash.

74.00 Leave wash, course SW. Asc. gradual SE. slope to

82.70 Intersect the W. Bdy. of Tp. at 75 lks. N. 0° 10' E., from the original cor. of secs. 19, 24, 25 and 30, which is a limestone 10 x 4, x 8 ins. above ground, firmly set, mkd. with four notches on S. edge and two notches on N. edge and witnessed by four bearing trees:

A yellow pine, 28 ins. diam. N. 59° E., 99 lks. dist., mkd. T. 30 N R 4 E S 19 B T.

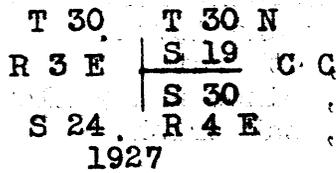
A yellow pine, 36 ins. diam. S. 72° E., 160 lks. dist., mkd. T. 30 N R 4 E S 30 B T.

A yellow pine 28 ins. diam. S 29° W., 67 lks. dist., mkd. T 30 N R 3 E S 25 B T.

A yellow pine 28 ins. diam. N. 69 1/2° W., 29 lks. dist., mkd. T 30 N R 3 E S 24 B T.

Alter this cor. monument to refer to secs. 24 and 25 only by destroying the marks on the NE. and SE. bearing trees.

At intersection, set an iron post, 3 ft. long, 2 ins. in diam., 20 ins. in the ground to bedrock, supported by a md. of stone, for the closing cor. of secs. 19 and 30, with brass cap marked



from which

A yellow pine, 8 ins. in diam., brs. N. 73 1/2° E., 59 lks. dist., mkd. T 30 N R 4 E S 19 CCBT.

A yellow pine, 10 ins. diam., brs. S. 37° E., 95 lks. dist., mkd. T 30 N R 4 E S 30 C C B T.

Land, rolling and level,

Soil, rocky, 4th rate.

Timber, cedar, pinon and yellow pine.

Undergrowth, oak brush,

The original cor. of secs. 17, 18, 19 and 20, is a limestone 10 x 10 x 8 ins. above ground, firmly set, marked with three grooves on S. face, and five grooves on E. face, and witnessed by four properly mkd. bearing trees, one each, NE., SE., SW. and NW. of cor.

Thence

West, on true line, bet. secs. 18 and 19.

Over rolling land, thru heavy timber and undergrowth.

Desc. 20 ft. over SW. slope.

5.20 Wash, 10 lks. wide, course S. Asc. 14 ft. over E. slope.

6.50 Spur, slopes S. Over nearly level land.

## Survey of part of the Subdivisional Lines of T. 30 N., R. 4 E.

## Chains

- 11.00 Wash, 10 lks. wide, course SE.  
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins.  
 in the ground for the  $\frac{1}{4}$  sec. cor. of secs. 18 and 19,  
 with brass cap mkd.

$$\frac{1}{4} \begin{array}{l} \text{S 18} \\ \text{S 19} \end{array}$$

1927

from which

- A pinon, 13 ins. in diam., brs. N.  $63^\circ$  E., 75 lks.  
 dist., mkd.  $\frac{1}{4}$  S 18 B T.  
 An oak, 8 ins. in diam., brs. S.  $62\frac{1}{2}^\circ$  E., 38 lks.  
 dist., mkd.  $\frac{1}{4}$  S 19 B T.  
 50.75 Wash, 20 lks. wide, course SE.  
 Old road in same brs. NW-SE.  
 82.46 Intersect the W. Bdy. of Tp., at 1.32 chs. N. of the  
 original cor. of secs. 13, 18, 19 and 24, hereinbefore  
 described.  
 At intersection, set an iron post 3 ft. long, 2 ins. in  
 diam., 24 ins. in the ground for the closing cor. of  
 secs. 18 and 19, with brass cap marked

$$\begin{array}{ccc} \text{T 30 N} & \text{T 30 N} & \\ \text{R 3 E} & \begin{array}{l} \text{S 18} \\ \text{S 19} \end{array} & \text{CC} \\ \text{S 13} & \text{R 4 E} & \\ & 1927 & \end{array}$$

from which

- A yellow pine, 10 ins. in diam., brs. N.  $64^\circ$  E.,  
 48 lks. dist., mkd. T 30 N R 4 E S 18 CCBT.  
 A yellow pine, 14 ins. in diam., brs. S.  $46\frac{3}{4}^\circ$  E.,  
 60 lks. dist., mkd. T 30 N R 4 E S 19 CCBT.  
 Alter the original sec. cor. to refer to secs. 13 and 24,  
 only, as hereinbefore described.  
 Land, rolling and level.  
 Soil, rocky, 4th rate.  
 Timber, oak, pinon and yellow pine.  
 Undergrowth, oak brush.

The original cor. of secs. 7, 8, 17 and 18 is a sand-  
 stone 4 x 14 x 6 ins. above ground, firmly set, mkd.  
 four grooves on S. face and five grooves on E. face  
 and witnessed by four properly mkd. bearing trees,  
 one each NE., SE., SW. and NW. of cor.

Thence

West, on true line, bet. secs. 7 and 18.  
 Over rolling land, thru heavy timber and dense under-  
 growth.

- 10.25 Telephone line, brs. NW-SE.  
 10.85 New highway, brs. NW-SE.  
 28.00 Shallow draw, course NW.  
 32.47 From which, U.S.G.S.B.M. No. 7475 brs. N. 9.48 chs. dist.  
 40.00 Set an iron post 3 ft. long, 1 in. in diam., 26 ins. in  
 the ground, for the  $\frac{1}{4}$  sec. cor. of secs. 7 and 18,  
 with brass cap marked

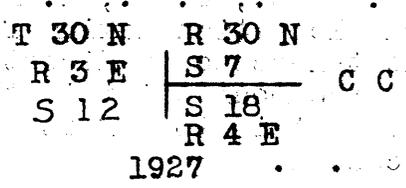
$$\frac{1}{4} \begin{array}{l} \text{S 7} \\ \text{S 18} \end{array}$$

1927

Survey of part of the Subdivisional Lines of T. 30 N., R. 4 E.

Chains from which  
 A yellow pine, 6 ins. in diam., brs. N. 16° E.,  
 23 lks. dist., mkd.  $\frac{1}{4}$  S 7 B T.  
 A yellow pine, 5 ins. in diam., brs. S. 3 $\frac{1}{2}$ ° W.,  
 26 lks. dist., mkd.  $\frac{1}{4}$  S 18 B T.

57.80 Shallow draw, course SW.  
 61.70 Spur slopes SW.  
 65.50 Draw, course SW.  
 82.41 Intersect the W. Bdy. of Tp. at 1.60 chs. N. from the  
 cor. of secs. 12 and 13, hereinbefore described.  
 At intersection set an iron post 3 ft. long, 2 ins. in  
 diam., 24 ins. in the ground for the closing cor. of  
 secs. 7 and 18, with brass cap mkd.



from which  
 An oak, 8 ins. in diam., brs. N. 24 $\frac{1}{2}$ ° E., 88 lks.  
 dist., mkd. T 30 N R 4 E S 7 C C B T.  
 A yellow pine, 18 ins. in diam., brs. S. 38° E.,  
 38 lks. dist., mkd. T 30 N R 4 E S 18 CCBT.

Land, rolling.  
 Soil, rocky, 4th rate.  
 Timber, oak, pinon and yellow pine.  
 Undergrowth, oak brush.

From cor. of secs. 7, 8, 17 and 18.  
 S. 0° 3' W.; on true line, bet. secs. 7 and 8 (S.  $\frac{1}{2}$ ).  
 Over rolling land, thru heavy timber and dense under-  
 growth. Over level plateau.

15.00 Leave level land, desc: 94 ft. over NW. slope.  
 21.60 Wash, 10 lks. wide, course NE. Asc. 37 ft. over SE.  
 slope.  
 30.00 Spur, slopes NE. Desc. 77 ft. over SW. slope.  
 35.70 Wash, 20 lks. wide, course NE. Asc. 62 ft. over SE.  
 slope  
 40.00 Set an iron post 3 ft. long, 1 in. in diam., 10 ins. in  
 the ground to bedrock, supported by a md. of stone,  
 for the  $\frac{1}{4}$  sec. cor. of secs. 7 and 8, with brass cap  
 marked



from which,  
 A pinon, 14 ins. in diam., brs. S. 57° E., 25 lks.  
 dist., mkd.  $\frac{1}{4}$  S 8 B T.  
 A pinon, 10 ins. in diam., brs. N. 66° W., 13  
 lks. dist., mkd.  $\frac{1}{4}$  S 7 B T.  
 House on Grand View Point near Head of Grand  
 View Trail, brs. S. 75° E., about 30 chs.  
 dist.  
 U. S. G. S. BM. 7406, brs. S. 81° 4' E., 27.11  
 chs. dist:  
 As the rim of the Grand Canyon of the Colorado  
 River is about 1.00 ch. N. bearing E.-W.;  
 discontinue line.

Land, rolling and level.  
 Soil, rocky, 4th rate.  
 Timber, oak, pinon and yellow pine.  
 Undergrowth, oak brush.

## FINAL FIELD TEST

of  
Buff Transit No. 9940  
by

Benjamin J. Kinsey, U. S. Surveyor.

November 4, 1927, at station near center of sec. 22, T. 30 N., R. 4 E., G. & S. R. B. & M., latitude  $35^{\circ} 58\frac{1}{2}'$  N., and approximate longitude  $111^{\circ} 57'$  W., examine the adjustments of the transit and find no errors; then, to test the workings of the solar apparatus, proceed as follows:

At 4 h. 42 m., a. m., l. m. t., observe Polaris at Western Elongation making four observations two each with the telescope in direct and reversed positions, marking the mean point in the line thus determined by a tack set in top of stake driven in the ground about 5 chs. N.

Azimuth of Polaris:  $1^{\circ} 20' 15''$ .

Lay off the azimuth of Polaris  $1^{\circ} 20\frac{1}{2}'$  to the east and mark the meridian thus determined by a tack driven in top of a peg driven in the ground about 5 chs. N.

November 9, at same station, at 9 h. 00 m., a. m., app. t., set off  $35^{\circ} 58\frac{1}{2}'$  N., on the lat. arc.,  $16^{\circ} 41'$  S., on the decl. arc and determine a meridian with the solar which is found to agree with the true meridian.

At 12 h. 00 m., app. noon, with the lat. arc unchanged, observe the sun on the meridian, the resultant reading of the decl. arc is  $16^{\circ} 43\frac{1}{2}'$  S., which agrees with the computed decl. of the sun.

At 3 h. 00 m., p. m., app. t., with lat. arc unchanged set off  $16^{\circ} 45'$  S., on the decl. arc and determine a meridian with the solar which is found to agree with the true meridian.

As all of the observations taken during the usual hours of solar work agree within 1' of the true meridian, conclude that the instrument is in satisfactory condition, and has been during the surveys described in the foregoing notes.

## FINAL FIELD TEST

OF

Young &amp; Sons Transit No. 8477

by

Leroy R. Hanson, U. S. Transitman.

November 25, 1927, on the meridian determined as described above, examine the adjustment of transit 8477 and find no errors; then, to test the workings of the solar apparatus, proceed as follows:

At 9 h. 00 m., a. m., app. t., set off  $35^{\circ} 58\frac{1}{2}'$  N., on the lat. arc,  $20^{\circ} 37'$  S., on the decl. arc, and determine a meridian with the solar which is found to agree with the true meridian.

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At 12 h. 00 m., app. noon, with the lat. arc unchanged, observe the sun on the meridian; the resultant reading of the decl. arc is 20° 39' S., which agrees with the computed declination of the sun.

At 3 h. 00 m., p. m., app. t., with the lat. arc unchanged, set off 20° 40' S., on the decl. arc and determine a meridian with the solar which is found to agree with the true meridian.

As all of the observations taken during the usual hours of solar work agree within 1' of the true meridian conclude that the adjustments of the instrument have been maintained during the surveys described in the foregoing notes,

GENERAL DESCRIPTION.

The lands surveyed in T. 30 N., R. 4 E., are rolling in character, with a mean elevation above sea level of about 7,500 ft.

The soil is chiefly rocky clay, 4th rate.

The chief timber is cedar, oak, juniper and yellow pine.

The undergrowth consists mostly of oak brush and young timber.

No living water was located near the lines surveyed except in section 22, in which is located the Hull Tanks Ranger Station, which has an excellent cistern and water tanks.

No evidence of mineral found.

A few old roads cross various of the surveyed lines.

A new highway from Grand Canyon, Arizona, to Cameron, Arizona, via Desert View, is in construction at this time.

All of the lands surveyed lie within either the Grand Canyon National Park or the Tusayan National Forest.



BOOK 3855

CERTIFICATE OF UNITED STATES SURVEYOR.

I, Leroy R. Hanson, U.S. Transitman, hereby certify upon honor that, in pursuance of special instructions received from the District Cadastral Engineer, for Group 145, Arizona, bearing date of the 11th day of May, 1927, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, resurveyed all those parts or portions of

the West Boundary of Township 30 North, Range 4 East

and surveyed all those parts or portions of

the Subdivision Lines of

Township 30 North, Range 4 East

of the Gila & Salt River

Base & Meridian, in the State of Arizona

which are represented in

the foregoing field notes and by diagram on page 1 hereof as having been executed by me, and under my direction; and that all the corners of said resurvey

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

tions, and the special written instructions of the District Cadastral Engineer, for Group 145, Arizona,

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

Place: Phoenix, Arizona.

Leroy R. Hanson, U.S. Transitman

Date: May 1, 1928.

APPROVAL.

Office of the U.S. Supervisor of Surveys

Denver, Colorado

The foregoing field notes of the survey of

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

executed by Leroy R. Hanson, U.S. Transitman

under his special instructions dated May 11, 1927, for Group 145, Arizona, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

U.S. Supervisor of Surveys

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.



BOOK 3855

CERTIFICATE OF UNITED STATES SURVEYOR.

I, Benjamin J. Kinsey, U. S. Surveyor, hereby certify upon honor that, in pursuance of special instructions received from the District Cadastral Engineer, for Group 145, Arizona bearing date of the 11th day of May, 1927, 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, ~~retraced~~ all those parts or portions of the East boundary of Township 30 North, Range 3 East, and the Subdivision lines of Township 30 North, Range 4 East resurveyed all those parts or portions of the Subdivision lines of Township 30 North, Range 4 East and surveyed all those parts or portions of the Subdivision lines of Township 30 North, Range 4 East of the Gila and Salt River Base and Meridian, in the State of Arizona, which are represented in and by diagram on page 1 hereof the foregoing field notes ~~as having been executed by me, and under my direction; and that all the corners of said retracement, resurvey and survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the District Cadastral Engineer, for Group 145, Arizona, and in the specific manner described in the field notes, and that the foregoing are the original field notes of such retracement, resurvey and survey.~~

Place: Phoenix, Arizona

Date: April 18, 1928.

*Benjamin J. Kinsey*  
 U. S. Surveyor.

APPROVAL.

OFFICE OF THE U.S. SUPERVISOR OF SURVEYS,

Denver, Colo., April 20, 1929

The foregoing field notes of the ~~retracement of~~ Part of the East boundary of Township 30 North, Range 3 East and Part of the Subdivision lines of Township 30 North, Range 4 East of the ~~resurvey of~~ Part of the West Boundary and Part of the Subdivision lines of Township 30 North, Range 4 East and of the ~~survey of~~ Part of the Subdivision lines of Township 30 North, Range 4 East of the Gila and Salt River Base and Meridian, in the State of Arizona executed by Benjamin J. Kinsey, U.S. Surveyor and Leroy R. Hanson, U.S. Transitman under his special instructions dated May 11, 1927 for Group 145, Arizona, 1927, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the ~~retracement, resurveys and surveys~~ they describe, are hereby approved.

*Samuel H. Kinison*  
 U.S. Supervisor of Surveys.

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.