

3594

Book "A"

4-679

BOOK 3594

107
O. DRIS
1

PETRIFIED FOREST NATIONAL MONUMENT.

FIELD NOTES

RE-
OF THE SURVEY OF THE

Fourth Standard Parallel North, thru. part of Range 23 East, and of
Part of Subdivision Lines of Township 16 North, Range 23 East,

RECONSTRUCTION OF

Corner of Townships 14 and 15 North, Ranges 23 and 24 East,

Corner of Township 15 and 16 North, Ranges 23 and 24 East,

RECONSTRUCTION & REESTABLISHMENT OF

Certain sec. cors. on the S. and E. bdrs. of T. 16 N., R. 23 E.,

and SURVEY of

Part of the Subdivision lines of

TOWNSHIP 16 NORTH, RANGE 23 EAST,

Of the Gila and Salt River Base and Meridian,

In the State of Arizona.

EXECUTED BY

Sidney E. Blout,

U.S. Cadastral Engineer,

In the capacity of U. S. Surveyor, under Special Instructions dated June 14, 1921,
issued by the United States Surveyor General to govern surveys included in Group
No. 118, Arizona, which were approved by the Commissioner of the General Land
Office, June 24, 1921, and Assignment Instructions dated July 2, 1921.

Resurvey & Survey commenced July 11, 1921.

Resurvey & Survey completed August 22, 1921.

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17

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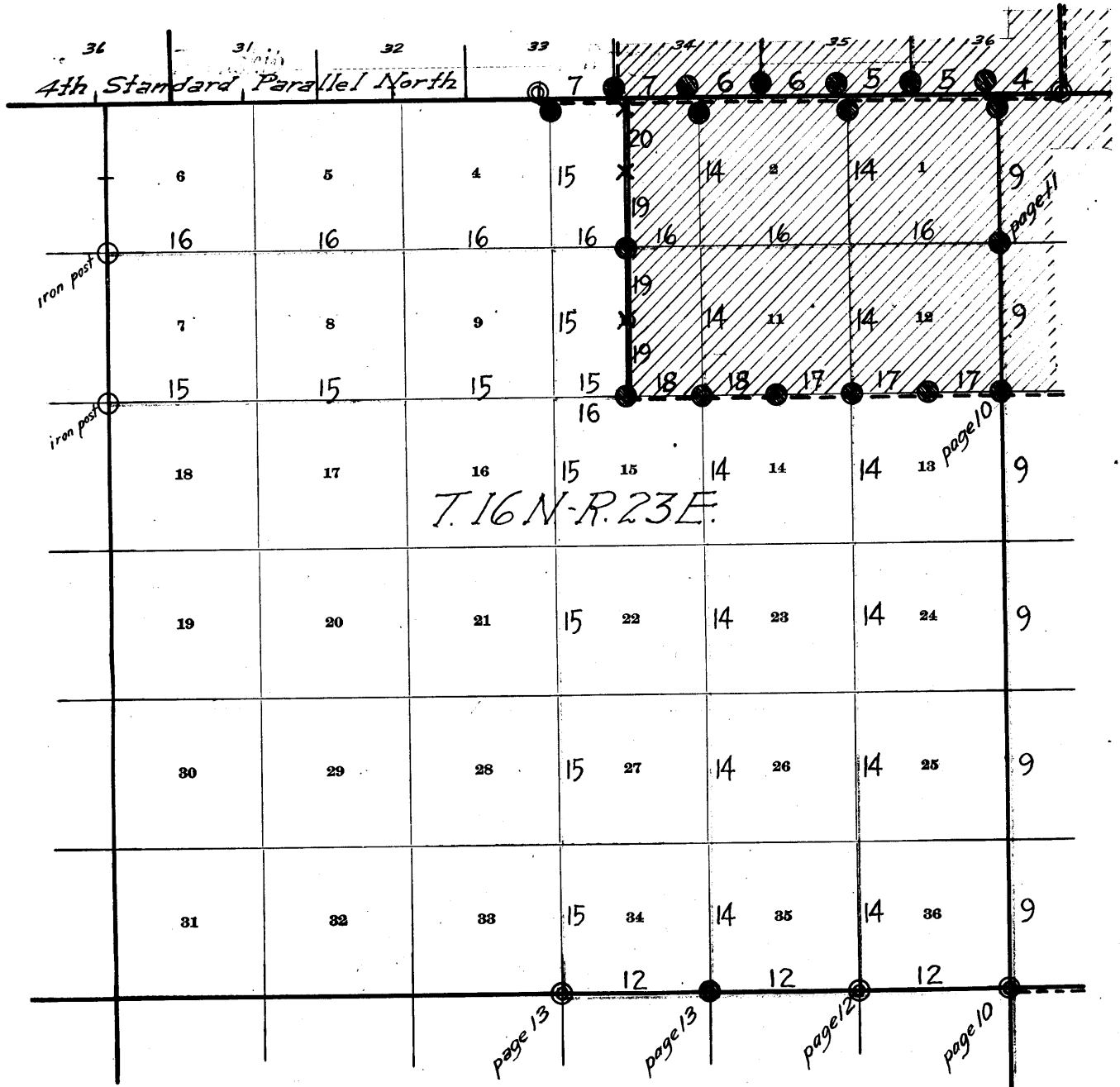
Book "A"

GROUP 118 - ARIZONA

BOOK 3594

- { CORS. FOUND
NO CHANGE MADE.
- ⊙ { CORS. FOUND
RECONSTRUCTED.
- { CORS. MISSING.
REESTABLISHED BY PROPORTION.
- X NEW CORS. ESTABLISHED.

INDEX DIAGRAM.



———— Lines surveyed under this group.

- - - - - Lines resurveyed under this group.

——— Lines retraced in search of old corners.

———— Accepted surveys.

////// Area embraced within the Petrified Forest National Monument

T. 15 N
T. 14 N
R. 23 E.
R. 24 E.

118

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

T.16N.-R.23E.

REESTABLISHED
7-21-21

8-15-21

8-15-21

8-13-21

8-13-21

8-13-21

RECONSTRUCTED
8-22-21
4

REESTABLISHED
8-22-21
3

RECONSTRUCTED
8-22-21
2

RECONSTRUCTED
8-22-21

Book "A"

GROUP 118 - ARIZONA

DATE DIAGRAM

Showing dates of execution of surveys, resurveys, retracements in search of cors., reconstruction, reestablishment and establishment of cors., all by Sidney E. Blout, U.S. Cadastral Engineer.

Surveyed on dates shown thereon

Resurveyed on dates shown thereon

Retracement in search of cors. on dates shown thereon

Accepted surveys.

36
RECONSTRUCTED
8-22-21

31

6

2

Resurveys and surveys, hereinafter described, executed on dates shown on diagram on page 1 hereof, by Sidney E. Blout, U.S. Cadastral Engineer, using a Buff Rocky Mountain Favorite solar transit No. 9984, with U-shaped standards, $4\frac{1}{2}$ -inch horizontal circle, 4-inch vertical circle, and improved Smith solar attachment; unless otherwise specified, all azimuth determinations are accomplished with the solar attachment, except the special observations on Polaris for meridian upon which to test the solar apparatus, as stated in the field notes.

All measurements are made with a Lufkin 5-chain steel tape, compared with a Chesterman standard steel tape and found correct. The measurements are made on the slope, the vertical angles determined with clinometer, and the slope measurements properly reduced to true horizontal distances.

TEST OF BUFF SOLAR TRANSIT No. 9984.

July 9, 1921: At camp near the cor. of secs. 1, 2, 11 and 12, T. 16 N., R. 23 E., Gila and Salt River Base and Meridian, Arizona, in approximate latitude $34^{\circ}47'30''$ N., and longitude $109^{\circ}52'19''$ W. at 6h. 50m. p.m. by my watch, which is 05m. fast of local mean time, I make an altitude observation of Polaris near lower culmination, making four observations, two each, with the telescope in direct and reversed positions.

Watch fast of local mean time-----	05m.
Local mean time of observation-----	6h. 45m.
Mean observed vertical angle -----	$33^{\circ}42'$
Time elapsed since lower culmination	22m.
Reduced latitude -----	$34^{\circ}47'25.8''$

At the same station at 10h. 25m. p.m. by my watch, I make an hour angle observation upon Polaris east of the meridian, making four observations, two each with the telescope in direct and reversed positions, and mark the mean point in the line thus determined, on a peg driven firmly in the ground 5-chains N.

Watch time of observation, mean of four readings ----- 10h. 25.2m.

July 10, 1921: I lay off the azimuth of Polaris $1^{\circ}09.8'$ to the west, and mark the meridian thus determined by a nail driven in a stake set firmly in the ground 5 chains N.

July 10, 1921: At the same station, I examine the adjustment of the transit and correct the level and collimation errors; then to test the solar apparatus by comparing its indications, resulting from solar observations, made during a.m. and p.m. hours with the true meridian established by Polaris observations, proceed as follows:

At 7h. 00m. a.m. apparent time, July 10, set off $34^{\circ}47\frac{1}{2}'$ N. on the lat. arc; $22^{\circ}17'$ N. on the decl. arc, and determine a meridian with the solar, and mark a point thereon by a tack driven in the stake already set 5 chains N.; this point falls 0.5 chains S. of the meridian established by the Polaris observation.

July 10: at the same station, I make a meridian observation of the sun for time and latitude, observing simultaneously the altitude of the sun's lower limb and transit of the sun's west limb, reversing the telescope and observing simultaneously, the altitude of the sun's upper limb and transit of the sun's east limb.

Mean observed altitude - - - - - 77°27'13"
 Reduced latitude - - - - - 34°47'31"
 Mean watch time of observation - - 12h.10m.20s.
 Watch fast of local mean time - - 00h.05m.15s.

At 2h.00m.p.m., with the lat.arc unchanged, set off 22° 14' N. on the decl.arc. and determine a meridian with the solar, and mark the meridian thus determined on the stake already set 5 chains N. of station; this mark falls 00.5' W. of the meridian established by the Polaris observation. I continue taking solar observations hourly during the remainder of this day, and from a comparison of the results, find that all of the observations agree within 01' of the meridian established by the Polaris observation; therefore conclude that the adjustment of the instrument is satisfactory.

4 Resurvey of Fourth Std. Parallel North, thru part of Range 23 East.

Chains.

The 4th. Standard Parallel North, thru Range 23 E., was surveyed in 1882, by Henry A. Coe, U.S.D.S. The west $2\frac{1}{2}$ miles of this part of the Parallel were retraced in 1920 by Sidney E. Blout, U.S. Cadastral Engineer, and no trace of any corners except the standard $\frac{1}{4}$ sec. cor. of sec. 33 was found. The following notes describe a resurvey of the East $3\frac{1}{2}$ miles of the Parallel in R. 23 E., of which portion no retracement or resurvey is of record. The closing corners of the Subdivision lines of T. 16 N., R. 23 E., and the closing cor. of Ts. 16 N., Rs. 23 and 24 E. were established on the Parallel in 1882 by a Henry A. Coe, U.S.D.S., and no reestablishment of any of said closing corners is of record.

Retracement for Resurvey.

From the original standard $\frac{1}{4}$ sec. cor. of sec. 33, T. 17 N., R. 23 E., hereinafter described, East, on random line, searching diligently at record intervals, for the original standard cors. and closing cors., and setting temp. standard cors. at intervals of 40.00 chs. No trace of any corner can be found; until at

281.96 Fall 12 lks. S. of the original standard cor. of Ts. 17 N., Rs. 23 and 24 E., hereinafter described.

The true course and length of the Parallel from this Tp. cor. back to the standard $\frac{1}{4}$ sec. cor. of sec. 33, T. 17 N., R. 23 E., are therefore S. $89^{\circ}59'$ W., 281.96 chs., which develops a proportional interval of 40.28 chs. for the reestablishment of the missing standard cors.

RESURVEY.

The original standard cor. of Ts. 17 N., Rs. 23 and 24 E., is a sandstone, greatly disintegrated, 12x5x12 ins. above ground, firmly set and dimly marked SC on N. face, with 6 grooves on each of N., E. and W. faces, and witnessed by a mound of stone 1 ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

No bearing trees.

Reconstruct this cor. as follows:

Alongside of the old stone, Set an iron post, 3 ft. long, 3 ins. in diam., 26 ins. in the ground, for standard cor. of Ts. 17 N., Rs. 23 and 24 E., marked on brass cap,

S C
 T 17N
 R23E R24E
 S36 | S31

1921

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

S. $89^{\circ}59'$ W., on a true line, on S. bdy. of sec. 36, within the Petrified Forest National Monument, over hilly land, thru scattering undergrowth.

29.95 Descend 82 ft., over NW. slope, to Leave hilly land, bearing N. and S., and enter gently rolling bottom land.

33.13 Descend slightly over W. slope, to (Proportional dist.) Set an iron post, 3 ft. long, 3 ins. in diam., 20 ins. in the ground to bed rock, deposit a stone marked with a cross (x) at base of post, and raise a mound of stone around post, for reestablished closing cor. of Ts. 16 N., Rs. 23 and 24 E., marked on brass cap,

Resurvey of Fourth Standard Parallel North, thru. part of Range 23 E.

Chains.

T17N R23E

S36

S1 | S6
R23E | R24E

C C

T16N

1921

Continue line and measurement.

Descend 15 ft., over W. slope to $\frac{1}{4}$ sec. cor.

37.80 Dim road from Adamana, Arizona, to Rainbow Forest, bears N. and S.

40.28 (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for reestablished std. $\frac{1}{4}$ sec. cor. of sec. 36, marked on brass cap,

S C

S 36

1921

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

Continue over gently rolling bottom land.

60.95 Descend 50 ft., over W. slope, to Cottonwood Wash, 80 lks. wide, banks 4 ft. high, course S. 30° W.64.95 Ascend 10 ft., over SE. slope, to Leave gently rolling bottom land, brs. N. 30° E. and S. 30° W. and enter broken hilly land.

80.56 Ascend 85 ft., over SE. slope, to (Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished std. cor. of secs. 35 and 36, marked on brass cap,

S C

T17N | R23E
S35 | S36

1921

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

Land, gently rolling, broken and hilly.

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

Timber, none.

Undergrowth, scattering sage brush.

Fair grass.

16.30 S. $89^{\circ}59'$ W., on a true line, on S. bdy. of sec. 35, within the Petrified Forest National Monument.

Over broken hilly land devoid of timber and undergrowth.

Ascend 52 ft. over SE. slope.

Sharp clay spur, slopes S.

20.50 Descend 60 ft., over SW. slope, to

Foot of descent, brs. N. 40° W. and S. 30° E.

Leave broken, hilly land, and enter nearly level sandy land, covered with a good growth of grass.

32.92 Descend 25 ft., over SW. slope, to

(Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished closing cor. of secs. 1 and 2, T. 16 N., R. 23 E., marked on brass cap,

T17N R23E

S35

S 2 | S 1
T16N | R23E

C C

1921

6 Resurvey of Fourth Std. Par. North, thru. part of Range 23 East.

Chains.

40.28 Raise a mound of stone 2 ft. base, 1½ ft. high, S. of cor. Descend 16 ft., over SW. slope, to (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished std. ¼ sec. cor. of sec. 35, marked on brass cap,

S C
 ¼ S 35

1921

Raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. From this cor., a cross (X) on face of a sand stone boulder 7x10x7 ft. above ground, brs. N. 44° E., 72 lks. dist.; underneath cross (X) chisel the letters BR. A cross (X) on sandstone boulder 8x9x10 ft. above ground brs. N. 18½° W., 49 lks. dist. Underneath the cross (X) chisel the letters BR.

65.60 Descend 45 ft., over SW. slope. Wash, 30 lks. wide, course S. At 3 chs. N. of this point, foot of bluffs bears NE. and W.

80.56 Ascend 20 ft., over S. slope, to (Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished std. cor. of secs. 34 and 35, marked on brass cap,

S C
 T17N R23E
 S34 S35

1921

Raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Land, E. 20½ chs., broken and hilly; remainder, nearly level.

Soil, adobe clay, 3rd rate, in E. 20½ chs.; sandy loam, 2nd rate in the remainder.

Timber, none.

Undergrowth, none.

Good growth of bunch grass in W. 60 chs.

S. 89° 59' W.; on a true line, on S. bdy. of sec. 34, within the Petrified Forest National Monument.

Over nearly level land, devoid of timber and undergrowth. Ascend slightly over S. slope, 3 chs. S. of foot of bluffs, bearing E. and W.

3.82 National Old Trails road, brs. N. 80° W. and S. 80° E.

8.82 Wash, 20 lks. wide, course S. 20° E.

Ascend slightly over S. slope.

19.00 Leave nearly level, and enter broken and hilly land.

Ascend 46 ft., over SE. slope, to

32.38 (Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished closing cor. of secs. 2 and 3, T. 16 N., R. 23 E., marked on brass cap,

T17N R23E
 S34
 S 3 S 2
 T16N R23E
 C C

1921

Raise a mound of stone, 2 ft. base, 1½ ft. high, S. of cor. Ascend 37 ft., over SE. slope, to

40.28 (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished standard ¼ sec. cor. of sec. 34, marked on brass cap,

S C
 ¼ S 34

1921

Resurvey of Fourth Std. Parallel North, thru. part of Range 23 East, 7 Chains.

51.15 Raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor. Ascend 50 ft., over SE. slope, to Rim of mesa, brs. NE. and SW. Old road from St. Johns to Holbrook, Arizona, brs. N. 70° E. and S. 70° W. Leave broken and hilly land, and enter nearly level land on mesa. Ascend very gradually over SE. slope.

61.20 Descend very gradually over SW. slope. Continue over nearly level surface of mesa.

72.90 (Mid-point of North bdy. of sec. 3, T. 16 N., R. 23 E.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for ¼ sec. cor. of sec. 3, and mon. on the boundary of the Petrified Forest National Monument, marked on brass cap,

PFNM

S	3
1921	

Dig pits, 18x18x12 ins., one each E. and W. of post, 3 ft. dist. From this cor., the boundary of the Petrified Forest National Monument extends S. 0° 34' E. and S. 89° 59' W.

Continue line and measurement of the 4th Standard Parallel North, identical with Bdy. of the Petrified Forest National Monument.

Over nearly level land on mesa.

80.56 Descend slightly over SW. slope, to (Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished standard cor. of secs. 33 and 34, and mon. on the boundary of the Petrified Forest National Monument, marked on brass cap,

S	C
T17N	R23E
	PFNM
S33	S34
1921.	

Dig pits, 18x18x12 ins., one each E., W. and N. of post, 3 ft. dist. From this cor., the boundary of the Petrified Forest National Monument extends N. 1° 19' E. and N. 89° 59' E.

Land, E. 19 chs. and W. 29½ chs. nearly level; remainder, broken and hilly.

Soil, sandy and rocky, 2nd and 3rd rate.

Timber, none.

Undergrowth, none.

Good growth of crowfoot gramma grass.

S. 89° 59' W., on true line, on S. bdy. of sec. 33.

Over nearly level land on mesa, devoid of timber and undergrowth.

4.28 Descend very gradually over SW. slope. Old road from St. Johns to Holbrook, Arizona, brs. N. 80° W. and S. 80° E.

24.13 Dim road brs. N. and S.

32.87 (Proportional dist.) Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished closing cor. of secs. 3 and 4, T. 16 N., R. 23 E., marked on brass cap,

8 Resurvey of Fourth Std. Parallel North, thru. part of Range 23 East.

Chains.

T17N R23E

S33

S 4	S 3
T16N	R23E

C C

1921

Dig pits 18x18x12 ins., one each E., W. and S. of post 3 ft. dist.

40.28

Intersect the original standard $\frac{1}{4}$ sec. cor. of sec. 33, which is a sandstone, 16x12x5 ins. above ground, firmly set, marked SC $\frac{1}{4}$ on N. face, from which the stump of a tree, 12 ins. in diam., burned to the surface of the ground, brs. N. 82 $\frac{1}{2}$ ° W., 39 lks. dist. This is evidently the remains of the original bearing tree as the bearing and distance agrees with the record.

Alongside the old stone, set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for standard $\frac{1}{4}$ sec. cor. of sec. 33, marked on brass cap,

S C

 $\frac{1}{4}$ S 33

1921

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

Land, nearly level.

Soil, sandy, 2nd rate.

Timber, none.

Undergrowth, none.

Good growth of crowfoot gramma grass.

Reconstruction and reestablishment of certain cors. on the Range line, between Ranges 23 and 24 E., Ts. 15 and 16 N.

9

Chains The East boundary of T. 16 N., R. 23 E., was surveyed in 1882, by Henry A. Coe, U.S.D.S., and no retracement or resurvey of said line is of record. The East Boundary of T. 15 N., R. 23 E., was surveyed in 1875 by C. Burton Foster, U.S.D.S., and retraced in 1882 by A. P. Johnson, U.S.D.S. No other retracement or resurvey of said line is of record.

RETRACEMENT.

From the reestablished closing cor. of Ts. 16 N., Rs. 23 and 24 E., on the 4th Std. Par. N., hereinbefore described,

South on random line, searching diligently at record intervals for the original cors., and setting temp. cors. at such intervals E. of secs. 1 and 12. No trace of any old cor. can be found, until at

483.02 Fall 5.34 chs. W. of a soft sandstone, 16 x 8 x 8 ins. above ground, firmly set. Diligent search in this vicinity fails to reveal any trace of a wood post, witnessed by pits and one bearing tree, recorded in the notes of the original survey as marking the cor. of Ts. 15 and 16 N., Rs. 23 and 24 E. This stone is marked on four faces, but the marks are so dim that identification of this stone as marking the original Tp. cor. point is very uncertain; therefore, retrace the range line bet. Rs. 23 and 24 E., thru T. 15 N., before accepting this stone as the original cor. of Ts. 15 and 16 N., Rs. 23 and 24 E.

From the above described stone,

S. 0° 6' W. (course as per record of retracement of E. Bdy. of T. 15 N., R. 23 E. by A. P. Johnson, U.S.D.S. in 1882) on random line, thru T. 15 N., bet. Rs. 23 and 24 E., searching diligently at record intervals for the old cors. Fail to find trace of any old cor., until at

483.67 Fall 2.68 chs. W. of a cedar post, 4 ins. square, projecting 3 ft. above ground, badly decayed, marked XXXVI on NW. face, from which, a cedar limb, 8 ins. in diam., brs. N. 18° E., 55 lks. dist., marked T XVN RXXIVE XXXXI BT.

The record of the establishment of the cor. of Ts. 14 and 15 N., Rs. 23 and 24 E. described the same as a wood

post, 4 ft. long, 4 ins. square, set 1 ft. in the ground, properly marked and notched, with mound of earth raised around post, and witnessed by four pits, one each N. S. E. and W., and two properly marked bearing trees, a cedar 20 ins. in diam., S. 12° E., 50 lks. dist., and a cedar, 10 ins. in diam., N. 78° W., 89 lks. dist.

There is no trace of the above described accessories to the township corner, but I conclude that the post found is the original corner monument and is in its original position. No evidence of its having been moved was found.

Reconstruction of cor. of Ts. 14 & 15 N., Rs. 23 & 24 E.

Alongside this old wood post, set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground for cor. of Ts. 14 and 15 N., Rs. 23 and 24 E., marked on brass cap

T 15 N	
R 23 E	R 24 E
S 36	S 31
S 1	S 6
T 14 N	
1921	

In addition to the existing bearing tree hereinbefore described, establish bearing trees as follows:

- A cedar, 10 ins. in diam., brs. S. 30° E., 272 lks. dist., marked T. 14 N R 24 E S 6 B T.
- A cedar, 18 ins. in diam., brs. S. 60° W., 190 lks. dist., marked T 14 N R 23 E S 1 B T.
- A cedar, 10 ins. in diam., brs. N. 35½° W., 380 lks. dist., marked T 15 N R 23 E S 36 B T.

Reconstruction and Reestablishment of certain cors. on the
Range line, bet. Ranges 23 and 24 East, Ts. 15 and 16 N.

Chains True course and dist. of the range line thru T. 15 N., from the above described cor. to the illegibly marked sandstone believed to be the original cor. of Ts. 15 and 16 N., Rs. 23 and 24 E. are therefore N. 0° 13' W., 483.67 chs., and the true course and dist. of the range line thru T. 16 N., from said sandstone to the reestablished closing cor. of Ts. 16 N., Rs. 23 and 24 E. on the 4th Std. Par. N., are therefore N. 0° 38' W., 483.05 chs.

The proportion between the lengths of the range line in T. 14 N. and T. 15 N. as determined by the above described retracement agrees substantially with the original proportion; therefore, I conclude that this illegibly marked sandstone found at 483.05 chs. S. 0° 38' E. of the closing corner of T. 16 N., Rs. 23 and 24 E., is the original corner of Ts. 15 and 16 N., Rs. 23 and 24 E., described in the notes of the retracement of the east boundary of T. 15 N., Rs. 23 E., by A. P. Johnson, U. S. D. S., in 1882.

Reconstruction of cor. of Ts. 15 & 16 N., Rs. 23 & 24 E.

Alongside the old stone, set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of Ts. 15 and 16 N., Rs. 23 and 24 E., marked on brass cap,

T 16 N	
R 23 E	R 24 E
S 36	S 31
S 1	S 6
T 15 N	
1921	

Raise a mound of stone, 3 ft. base, 2 ft. high, S. of cor. This cor. is reconstructed to insure its permanency, and as a basis for the reestablishment of the cor. of secs. 7, 12, 13 and 18, T. 16 N., Rs. 23 and 24 E., which is a line monument on the bdy. of the Petrified Forest National Monument.

Reestablishment of cor. of secs. 7, 12, 13 & 18, T. 16 N.,
Ranges 23 and 24 East.

At a point 322.00 chs. N. 0° 38' W., from the reconstructed cor. of Ts. 15 and 16 N., Rs. 23 and 24 E., hereinbefore described, which is proportional to the original distance, reestablish the cor. of secs. 7, 12, 13 and 18, as follows:

Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished cor. of secs. 7, 12, 13 and 18, and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P F N M	
T 16 N	
R 23 E	R 24 E
S 12	S 7
S 13	S 18
1921	

Raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. From this cor. the Bdy. of the Petrified Forest National Monument extends S. 89° 44' W. and N. 88° 42' E.

Reconstruction and Reestablishment of certain cors. on the Range line between Ranges 23 and 24 East, T^s. 15 and 16 N. 13 Chains.

At a point 80.50 chs. N. 0°38' W., from the reestablished cor. of secs. 7, 12, 13 and 18, which is proportional to the original distance, reestablish the cor. of secs. 1, 6, 7 and 12, as follows:

Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished cor. of secs. 1, 6, 7 and 12, marked on brass cap,

T16N	
R23E	R24E
S 1	S 6
S 12	S 7

1921

Raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. From this cor., the reestablished closing cor. of T^s. 16 N., R^s. 23 and 24 E., on the 4th Std. Par. N., bears N. 0°38' W., 80.55 chs.

This cor. of secs. 1, 6, 7 and 12, is reestablished as a basis for the reestablishment of the ¼ sec. cor. of secs. 3 and 10, T. 16 N., R. 23 E., which is a line monument in the Bdy. of the Petrified Forest National Monument.

No other corners on this Range line are required to be reestablished in connection with the survey of the Bdy. of the Petrified Forest National Monument.

Reconstruction and Reestablishment of certain
corners on the South bdy. of Township 16 North, Range 23 East.

12.

The South Bdy. of T. 16 N., R. 23 E. was surveyed in 1875 by C. Burton Foster, U.S.D.S., and resurveyed in 1882 by Henry A. Coe, U.S.D.S., who reestablished all corners on the line. No other resurvey or retracement of the line is of record.

Retracement.

- From the reconstructed cor. of Ts. 15 and 16 N., Rs. 23 and 24 E., hereinbefore described,
S. 89° 47' W. (as per record of resurvey in 1882 by H. A. Coe, U.S.D.S.) on random line, bet. Ts. 15 and 16 N., R. 23 E.
- 40.00 Diligent search in this vicinity fails to reveal any trace of the previously reestablished $\frac{1}{4}$ sec. cor. of secs. 1 and 36.
- 80.45 Fall 89 lks. N. of the remains of the previously reestablished cor. of secs. 1, 2, 35 and 36, which consists of a disintegrated sandstone 12x5x4 ins. lying on a mound of stones. The stone is faintly marked, 5 notches being visible on one edge of same. No bearing trees. These remains do not agree with the record of the previous reestablishment of said cor., but diligent search in this vicinity fails to reveal any other corner monument or accessories; therefore, accept the mound of stones, as marking the true point for sec. cor. The true course and distance of the Tp. line, bet. secs. 1 and 36, are therefore S. 89° 9' W., 80.46 chs.
- Thence;
S. 89° 47' W., on random line, bet. Ts. 15 and 16 N., R. 23 E., searching diligently at record intervals for the previously reestablished cors. on the Tp. line. Find no trace of any old cor., until at
- 160.34 Fall 75 lks. S. of the previously reestablished cor. of secs. 3, 4, 33 and 34, which is a sandstone, 16x3x14 ins. above ground, firmly set in a mound of stone, marked with 3 notches on each of E. and W. edges. No bearing trees. This monument does not agree with the record of the previous reestablishment of said cor., but diligent search in this vicinity fails to reveal any other corner monument or accessories; therefore, accept the above described stone and mound of stones as marking the true point for the sec. cor. The true course and distance of the Tp. line from the old cor. of secs. 1, 2, 35 and 36 to this cor. are therefore N. 89° 57' W., 160.34 chs., which gives a proportional length of 80.17 chs. for line bet. secs. 2 and 35, and for line bet. secs. 3 and 34.

Reconstruction of cor. of secs. 1, 2, 35 and 36, Ts. 15 and 16 N., R. 23 E.

Reconstruct the old cor. of secs. 1, 2, 35 and 36 hereinbefore described as follows:

Destroy the old mound of stones, and in center of its position, reset the old stone monument 8 ins. in the ground with the notches to the W., and alongside same, set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 1, 2, 35 and 36, marked on brass cap,

T16N | R23E.
S35 | S36
S 2 | S 1
T15N
1921

3594

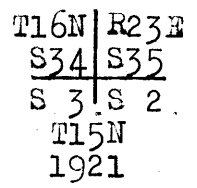
Reconstruction and Reestablishment of certain corners
Reconstruct the South Bdy. of Township, 16 North, Range 23 East. 13

Chains.

Raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor. This cor. is reconstructed to insure its permanency, and as a basis for the reestablishment of the cor. of secs. 11, 12, 13 and 14, T. 16 N., R. 23 E., which is a line monument in the Bdy. of the Petrified Forest National Monument.

Reestablishment of cor. of secs. 2, 3, 34 and 35, Ts. 15 and 16 N., R. 23 E.

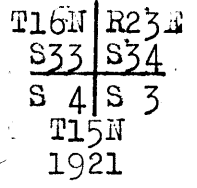
At a point 80.17 chs. N. 89° 57' W. from the reconstructed cor. of secs. 1, 2, 35 and 36, hereinbefore described, which is proportional to the original distance, reestablish the cor. of secs. 2, 3, 34 and 35, as follows:
Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished cor. of secs. 2, 3, 34 and 35, Ts. 15 and 16 N., R. 23 E., marked on brass cap,



raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor. This cor. is reestablished as a basis for the reestablishment of the cor. of secs. 10, 11, 14 and 15, and the 1/4 sec. cor. of secs. 3 and 10, T. 16 N., R. 23 E., which are line monuments in the Bdy. of the Petrified Forest National Monument.

Reconstruction of cor. of secs. 3, 4, 33 and 34, Ts. 15 and 16 N., R. 23 E.

Reconstruct the old cor. of secs. 3, 4, 33 and 34, hereinbefore described, as follows:
Destroy the old mound of stones, reset the old stone monument 9 ins. in the ground in same position, and alongside same, set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 3, 4, 33 and 34, Ts. 15 and 16 N., R. 23 E., marked on brass cap,



Raise a mound of stone 2 ft. base, 1 1/2 ft. high, W. of cor. This cor. is reestablished as a basis for the reestablishment of the 1/4 sec. cor. of secs. 10 and 15, and 1/4 sec. cor. of secs. 3 and 10, T. 16 N., R. 23 E. in the bdy. of the Petrified Forest National Monument.

No other corners on this Tp. Bdy. are required to be reconstructed or reestablished in connection with the survey of the Boundary of the Petrified Forest National Monument.

14. Resurvey of part of Subdivision lines in T.16 N., R.23 E.

Chains.

The subdivision lines of T.16 N., R.23 E. were surveyed in 1882 by Henry A. Coe, U.S.D.S., and no retracement or resurvey of any part of same is of record.

The following notes describe the resurvey of the line between secs. 12 and 13, the line bet. secs. 11 and 14, and the E. $\frac{1}{2}$ of line bet. secs. 10 and 15, all of which form part of the S. bdy. of the Petrified Forest National Monument.

Retracement for Resurvey.

First Meridional Sec. Line.

From the reestablished closing cor. of secs. 1 and 2, on the 4th Std. Parallel North, hereinbefore described, South, on random line, on First Meridional sec. line searching diligently at record intervals for the original cors. Find no trace of any of the Subdivisional cors., and at

484.33 Fall 529 lks. W. of the reconstructed cor. of secs. 1, 2, 35 and 36 on the S. bdy. of the Tp., hereinbefore described. True course and distance of line back to the closing cor. of secs. 1 and 2 are therefore N. $0^{\circ}37\frac{1}{2}'$ W., 484.36 chs., which gives a proportional distance of 322.68 chs. to the point for reestablishment of cor. of secs. 11, 12, 13 and 14.

322.68 From the cor. of secs. 1, 2, 35 and 36 on S. bdy. of Tp., N. $0^{\circ}37\frac{1}{2}'$ W., on trial line, on First Meridional sec. line. (Proportional dist.) Set temp. cor. of secs. 11, 12, 13 and 14.

Second Meridional Sec. Line.

From the reestablished closing cor. of secs. 2 and 3, on the 4th. Std. Parallel North, hereinbefore described, South, on random line, on Second Meridional sec. line, searching diligently at record intervals for the original cors. Find no trace of any of the Subdivisional cors., and at

483.96 Fall 558 lks. W. of the reestablished cor. of secs. 2, 3, 34 and 35, on the S. bdy. of the Tp., hereinbefore described. True course and dist. back to the closing cor. of secs. 2 and 3 are therefore N. $0^{\circ}39\frac{1}{2}'$ W., 483.99 chs., which gives a proportional distance of 322.53 chs. to the point for reestablishment of cor. of secs. 10, 11, 14 and 15.

322.53 From the reestablished cor. of secs. 2, 3, 34 and 35, on S. bdy. of Tp., N. $0^{\circ}39\frac{1}{2}'$ W., on trial line, on Second Meridional sec. line. (Proportional dist.) Set temp. cor. of secs. 10, 11, 14 and 15.

- 80.63 Thence, N. $0^{\circ}39\frac{1}{2}'$ W., on trial line, on Second Meridional sec. line, bet. secs. 10 and 11. (Proportional dist.) Set temp. cor. of secs. 2, 3, 10 and 11.

Third Meridional Sec. Line.

From the reestablished closing cor. of secs. 3 and 4, on the 4th Standard Parallel North, hereinbefore described, South, on random line, on Third Meridional Sec. line, searching diligently at record intervals for the original cors. Find no trace of any of the subdivisional

Resurvey of part of Subdivision lines in T.16 N. R.23 E. 15

Chains.

Retracement for Resurvey(continued) Third Mer. Sec. line.

484.05 cors., and at
Fall 639 lks.W.of the reconstructed cor.of , secs.3,4,33
and 34 on the S. bdy.of the Tp.,hereinbefore described.
True course and distance of line back to the closing cor.
of secs.3. and 4 are therefore, $N, 0^{\circ}45\frac{1}{2}'W.$, 484.09 chs.,
which gives a proportional distance of 322.48 chs. to
the point for reestablishment of the cor.of secs.9,10,
15 and 16.

322.48 From the reconstructed cor. of secs.3,4,33 and 34 on S.
bdy.of Tp.,
 $N.0^{\circ}45\frac{1}{2}'W.$, on trial line, on Third Meridional sec.line.
(Proportional dist.) Set temp, cor.of secs. 9,10,15 and
16.

80.62 Thence,
 $N.0^{\circ}45\frac{1}{2}'W.$ on trial line, on Third Meridional sec.line,
bet. secs.9 and 10.
(Proportional dist.) Set temp.cor.of secs.3,4, 9 and 10.

Fourth Latitudinal Sec. Line.

The cor.of secs.7. and 18 on the West bdy.of the Tp.,re-
established by me in 1920, under Group No.92, is a 2-
inch iron post, projecting 12 ins. above ground, firmly
set, properly marked on brass cap, and witnessed by
pits,one each NE. and SE. of cor.. No bearing trees.

495.12 Thence,
Easterly(various courses as per record) on random line,
on Fourth Latitudinal Sec.line, searching diligently
at the record intervals on the various courses, for
the original cors. No trace of any of the subdivis-
ional cors. can be found, and at
Fall 156 lks.S. of the reestablished cor.of secs.7,12,13
and 18 on the E. bdy.of the Tp., hereinbefore described.
This falling corresponds to a falling of 175 lks.S.of
same cor. for a random line run due East.thru.the Tp.
The true course and distance of a line back to the re-
established cor. of secs. 7 and 18, on the W. bdy.of
the Tp. are therefore $S.89^{\circ}48'W.$, 495.12 chs.

40.29 From the reestablished cor.of secs.7,12,13, and 18, on E.
bdy.of Tp.,
 $S.89^{\circ}48'W.$, on trial line, on Fourth Latitudinal Sec.line,
bet. secs.12 and 13.
(Proportional dist.) Set temp. $\frac{1}{4}$ sec.cor.of secs.12 and
13.

80.38 A point 9 lks.N.of.the temp.cor.of secs.11,12,13 and 14,
set on trial meridional sec.line.
80.58 (Proportional dist.) Set temp.cor.of secs.11,12,13 and
14.

40.37 Thence,
 $S.89^{\circ}48'W.$, on trial line, on Fourth Latitudinal sec.
line, bet. secs.11 and 14.
(Proportional dist.) Set temp. $\frac{1}{4}$ sec.cor.of secs.11 and
14.

79.87 A point 12 lks.S.of the temp.cor.of secs.10,11,14 and 15
set on trial meridional sec.line.
80.74 (Proportional dist.) Set temp. cor.of secs.10,11,14 and
15.

40.39 Thence,
 $S.89^{\circ}48'W.$, on trial line, on Fourth, Latitudinal sec.line,
bet. secs. 10 and 15.
(Proportional dist.) Set temp. $\frac{1}{4}$ sec.cor. of secs.10 and
15.

79.89 A point 26 lks.S. of the temp.cor. of secs.9,10,15 and 16
set on trial meridional sec.line.

16 Resurvey of part of Subdivision lines of T.16 N. R.23 E.

Chains.	Retracement for resurvey (continued)
80.78	(Proportional dist.) Set temp.cor.of secs.9,10,15 and 16. From the true point for reestablishment of cor.of secs.9, 10, 15 and 16, which is 26 lks.N. of this temp.sec.cor. and 89 lks.W.of the temp.cor. of same secs.on trial Third Meridional sec.line, N.89° 54'E., on true line, bet. secs.10 and 15.
40.39	The true point for reestablishment of the $\frac{1}{4}$ sec.cor. of secs.10 and 15, and SW.cor.of the Bdy. of the Petrified Forest National Monument. Move the previously set temp. $\frac{1}{4}$ sec.cor. to this point. This point is monumented, as hereinafter described.
----- <u>Fifth Latitudinal Sec.Line.</u> -----	
	The cor.of secs.1,6,7 and 12, on the West bdy.of the Tp., reestablished by me in May of this year, under Group No.92, is a 2 in.iron post, projecting 12 ins.above ground, firmly set, properly marked on brass cap, and witnessed by pits, one each NE., SE., SW. and NW.of cor. No bearing trees. Thence, Easterly (various courses, as per record) on random line, on the Fifth Latitudinal Sec.Line, searching diligently at the record intervals on the various courses for the original cors. No trace of any of the Subdivisional cors. can be found, and at
494.34	Fall 108 lks.S. of the reestablished cor. of secs.1,6,7 and 12, on the E. bdy.of the Tp., hereinbefore described. This falling corresponds to a falling of 117 lks.S.of same cor. for a random line run due East thru. the Tp. The true course and dist. of a line back to the reestablished cor. of secs.1,6,7 and 12, on the W. bdy, of the Tp. are therefore, S. 89°52'W., 494.34 chs.
160.41	From the reestablished cor.of secs.1,6,7 and 12, on the E.bdy.of the Tp., S.89°52'W., on trial line.on Fifth Latitudinal Sec.line, A point 7 lks.S.of temp.cor.of secs.2,3,10 and 11, set on trial meridional sec.line.
160.67	(Proportional dist.) Set temp.cor.of secs.2,3,10 and 11. Thence, S.89°52'W., on trial line.on Fifth Latitudinal Sec.Line, bet. secs.3 and 10.
40.45	(Proportional dist.) Set temp. $\frac{1}{4}$ sec.cor.of secs.3 and 10.
80.50	A point 14 lks.S.of the temp. cor.of secs.3,4,9 and 10, set on trial meridional sec.line.
80.91	(Proportional dist.) Set temp.cor.of secs.3,4,9 and 10. From the true point for reestablishment of cor.of secs. 3,4,9 and 10, which is 14 lks.N.of this temp.sec.cor. and 41 lks.W.of the temp.cor.of same secs. set on trial Third Meridional sec.line, N.89°49'E., on true line, bet. secs.3 and 10.
40.455	The true point for reestablishment of the $\frac{1}{4}$ sec.cor.of secs.3 and 10 and line monument of Bdy.of the Petrified Forest National Monument. Move the previously set temp. $\frac{1}{4}$ sec.cor. to this point. This point is monumented as hereinafter described.
80.91	The true point for reestablishment of the cor.of secs.2, 3,10 and 11, which is 7 lks.N.of the temp.cor.of same secs. set on trial 2nd Meridional sec.line, and 26 lks.W. of the temp.cor.of same secs. set on trial 5th Latitudinal sec.line.

Resurvey of part of Subdivision lines of T.16 N., R. 2 E. 17

Chains.

RESURVEY.

From the reestablished cor. of secs. 7, 12, 13 and 18, on the E. bdy. of the Tp., hereinbefore described, S. 89° 44' W., on true line, on Bdy. of the Petrified Forest National Monument, and sec. line, bet. secs. 12 and 13. Over gently rolling land, thru. scattering undergrowth. Descend gradually over NW. slope.

12.50
30.50
40.29

Change to W. slope, continuing gradual descent.
Change to SW. slope, descending very gradually to
Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground for reestablished $\frac{1}{4}$ sec. cor. of secs. 12 and 13, and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P F N M
1/4 S 12
S 13
1921

Dig pits 18x18x12 ins., one each E. and W. of post, 3 ft. dist.

Descend very gradually over SW. slope.

53.18
80.58

Old road, brs. NW. and SE.
A point 9 lks. S. of the temp. sec. cor. set on trial 4th Latitudinal sec. line, and 20 lks. W. of the temp. cor. of same secs. set on trial 1st Meridional Sec. line. Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished cor. of secs. 11, 12, 13 and 14, and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P F N M
T16N | R23E
S11 | S12
S14 | S13
1921

Dig pits 18x18x12 ins., one each NE., SE., SW. and NW. of post, 3 ft. dist.

Land, gently rolling.

Soil, sandy, 3rd rate.

Timber, none.

Undergrowth, scattering sagebrush.

Good grass.

S. 89° 57' W., on true line, on Bdy. of the Petrified Forest National Monument and sec. line bet. secs. 11 and 14.

Over gently rolling land, thru. scattering undergrowth.

Descend very gradually over SW. slope.

31.10

South Fork of Cottonwood wash, 100 lks. wide, 2 1/2 ft. deep, course SW.

Thence over S. slope, with slight change in elevation.

40.37

Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished $\frac{1}{4}$ sec. cor. of secs. 11 and 14 and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P F N M
1/4 S11
S14
1921

18 Resurvey of part of Subdivision lines of T.16 N. R.23 E.

Chains.

Resurvey (continued)

Dig pits 18x18x12 ins.; one each E. and W. of post, 3 ft. dist.

53.00 Cottonwood Wash, 150 lks. wide, 3 ft. deep, course S. Thence over nearly level land.

80.74 A point 12 lks. N. of the temp. sec. cor. set on trial 4th Latitudinal line, and 87 lks. W. of the temp. cor. of same secs. set on trial 2nd Meridional sec. line. Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for reestablished cor. of secs. 10, 11, 14 and 15, and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P	F	N	M
T16N		R23E	
S10		S11	
S15		S14	
1921			

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

Land, E. 53 chs., gently rolling; remainder, nearly level.

Soil, sandy, 2nd and 3rd rate.

Timber, none.

Undergrowth, scattering sage brush.

Good grass.

S. 89°54' W., on a true line, on Bdy. of Petrified Forest National Monument, and sec. line bet. secs. 10 and 15 (E. ½).

40.39 Over nearly level land, thru. scattering undergrowth. Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished ¼ sec. cor. of secs. 10 and 15, and SW. cor. of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P	F	N	M
¼		S10	
		S15	
1921			

Dig pits, 18x18x12 ins., one each E. and W. of post, 3 ft. dist.

Land, nearly level.

Soil, sandy and adobe, 2nd and 3rd rate.

Timber, none.

Undergrowth, scattering sage brush.

Good grass.

0

Chains.

Meridional 1/4 sec. line of Sec. 10.

From the reestablished point for 1/4 sec. cor. of secs. 3 and 10,
 South, on random line, on Meridional 1/4 sec. line of sec. 10.
 80.62 Fall 26 lks. W. of the reestablished 1/4 sec. cor. of secs. 10 and 15, and SW. cor. of the Bdy. of the Petrified Forest National Monument, hereinbefore described.
 Thence,
 N. 0° 11' W., on true line, on Meridional 1/4 sec. line of sec. 10, and Bdy. of the Petrified Forest National Monument.
 30.60 Over nearly level land, thru. scattering undergrowth.
 40.31 Road, brs. E. and W. Extends Westerly to Woodruff.
 (Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for C 1/4 sec. cor. of sec. 10 and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P
 F
 C 1/4 S 10 N
 M

1921

Raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor.
 Continue over nearly level land, sloping slightly to the S., thru. scattering undergrowth.
 80.62 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for reestablished 1/4 sec. cor. of secs. 3 & 10 and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P
 F
 1/4 S 3 N
 S 10 N
 1921 M

Dig pits, 18x18x12 ins., one each E. and W. of post, 3 ft. dist.
 Land, nearly level.
 Soil, sandy and rocky, 2nd and 3rd rate.
 Timber, none.
 Undergrowth, scattering sage brush.
 Good grass.

Meridional 1/4 sec. line of Section 3.

From the 1/4 sec. cor. on N. bdy. of sec. 3 (4th. Std. Parallel N.) hereinbefore described,
 South, on random line on Meridional 1/4 sec. line of sec. 3.
 80.90 Fall 80 lks. W. of the reestablished 1/4 sec. cor. of secs. 3 and 10, hereinbefore described.
 Thence;
 N. 0° 34' W., on true line, on Meridional 1/4 sec. line of sec. 3, and Bdy. of Petrified Forest National Monument.
 Over nearly level land, thru. scattering undergrowth.
 39.40 Old road, brs. E. and W.
 40.31 (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for C 1/4 sec. cor. of sec. 3, and line monument of the Bdy. of the Petrified Forest National Monument, marked on brass cap,

P
 C 1/4 S 3 F
 N
 M
 1921

Dig pits, 18x18x12 ins., one each N. and S. of post, 3 ft. dist.

20 Part of Subdivision lines of T.16 N., R. 23 E.

Chains.

49.90 Continue over nearly level land.
Ascend slightly over S. slope.
65.00 Old abandoned road, brs. NW. and SE.
Leave nearly level, and enter rolling land.
Ascend 50 ft., over S. slope, to
73.00 Rim of mesa, brs. E. and W. Leave rolling, and enter nearly level land on mesa.
80.90 Intersect the N. $\frac{1}{4}$ sec. cor. of sec. 3 on the 4th. Std. Par. N., hereinbefore described.
Land, S. 65 chs. and N. 8 chs. nearly level; remainder, rolling,
Soil, sandy and rocky, 2nd and 3rd rate.
Timber, none.
Undergrowth, scattering sage brush.
Good grass.

The continued satisfactory adjustment of the solar apparatus during the execution of the resurvey and survey hereinbefore described is indicated from field tests as described in Book "D."

Boundaries of that portion of T. 16 N., R. 23 E. situated within the Petrified Forest National Monument.

Latitudes, departures, and closing errors.

Lines designated.	True bearing.	Dist.	Latitudes.		Departures.	
			N.	S.	E.	W.
Boundary of P.F.N. M.	S. 89° 44' W.	80.58		.37		80.58
	S. 89° 57' W.	80.74		.07		80.74
	S. 89° 54' W.	40.39		.07		40.39
	N. 0° 11' W.	80.62	80.62			.26
	N. 0° 34' W.	80.90	80.90			.79
North boundary (4th. Std. Par. N.)	N. 89° 59' E.	200.89	.06		200.89	
East boundary,	S. 0° 38' E.,	161.05		161.05	1.78	
Convergency,					.07	
<u>Totals,</u>			161.58	161.56	202.74	202.76
			161.56	161.56		202.74
<u>Error in latitude,</u>			0.02	0.00		
<u>Error in departure,</u>						0.02

GENERAL DESCRIPTION.

The Petrified Forest National Monument embraces all of secs. 1, 2, 11 and 12, and the East halves of secs. 3 and 10 in T. 16 N., R. 23 E.

The surface in this portion of the township is nearly level or gently rolling, with the exception of some small areas along the N. bdy., where there is a hilly and broken surface.

The soil is sandy and rocky, 2nd and 3rd rate.

There is no timber.

A scattering undergrowth of sage brush is prevalent in all parts; also, a good growth of grass.

There is no permanent running water.

Cottonwood Wash, course SW., thru. secs. 1 and 11, and S. fork of same, course SW., thru. secs. 1, 12 and 11, drains the greater part of the surface.

There are no settlers, and no indications of valuable mineral deposits.

The National Old Trails Road bears NW. and SE. thru. this part of the township, extending northwesterly to Holbrook and southeasterly to St. Johns and Springerville. A road extends westerly to Woodruff, and another road extends northerly to Adamana. There are several other roads, but they are not used much.

The roads constitute the only improvements.

There are two groups of petrified trees in this part of the township, one in secs. 1 and 12 known as the "Third Forest" and another in sec. 2, known as the "Rainbow Forest."

CERTIFICATE OF UNITED STATES CADASTRAL ENGINEER.

I, Sidney E. Blout, U.S. Cadastral Engineer, U. S. Surveyor, hereby certify upon honor that, in pursuance of special instructions received from the U. S. Surveyor General, for Group No. 118, Arizona, bearing date of the 14th day of June, 1921, I have well, faithfully, and truly in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the Fourth Standard Parallel North, thru Range 23 East, and the Subdivision lines of Township 16 North, Range 23 East, Reconstructed the cor. of Ts. 14 and 15 N., Rs. 23 and 24 East, and Cor. of Ts. 15 and 16 N., Rs. 23 and 24 E., Reconstructed and Reestablished certain sec. cors. on the S. and E. bdrs. of T. 16 N., R. 23 E.; and surveyed all those parts or portions of the Subdivision lines of T. 16 N., R. 23 E., 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 resurvey and 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 118, 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: Continental Arizona
Date: July 5, 1923

Sidney E. Blout
U.S. Cadastral Engineer.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Phoenix, Arizona, July 9, 1923

The foregoing field notes of the survey of the Fourth Standard Parallel North, thru part of Range 23 East, and of Part of Subdivision lines of Township 16 North, Range 23 East. Reconstruction of Cor. of Ts. 14 and 15 N., Rs. 23 and 24 E.; Cor. of Ts. 15 and 16 N., Rs. 23 and 24 E.; Reconstruction and Reestablishment of Certain sec. cors. on the S. and E. bdrs. of T. 16 N., R. 23 E., and Survey of Part of the Subdivision lines of Township 16 North, Range 23 East, of the Gila and Salt River Base and Meridian, in the State of Arizona, executed by Sidney E. Blout, U.S. Cadastral Engineer, under his special instructions dated June 14, 1921, for Grp. 118, Arizona, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the resurveys and 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.