

4-679
(April 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE

BOOK 4199

FIELD NOTES

4199

OF RESURVEY OF

PART OF THE EAST BOUNDARY

PART OF THE NORTH BOUNDARY

and

PART OF THE SUBDIVISION LINES

of

TOWNSHIP 18 NORTH, RANGE 24 EAST

AND OF SURVEY OF THE

QUARTER SECTION LINES OF

SECTIONS 4 and 10

of

TOWNSHIP 18 NORTH, RANGE 24 EAST

Of the Gila and Salt River Meridian,

In the State of ARIZONA

to define the Boundary of Addition to Petrified Forest National Monument.

EXECUTED BY

Benjamin J. Kinsey

Surveyor and Cadastral Engineer

Under special instructions dated March 8, 1938, which provided for the surveys included under Group No. 222, Arizona, bearing the approval of the Commissioner of the General Land Office under date of April 8, 1938 and assignment instructions dated April 13, 1938

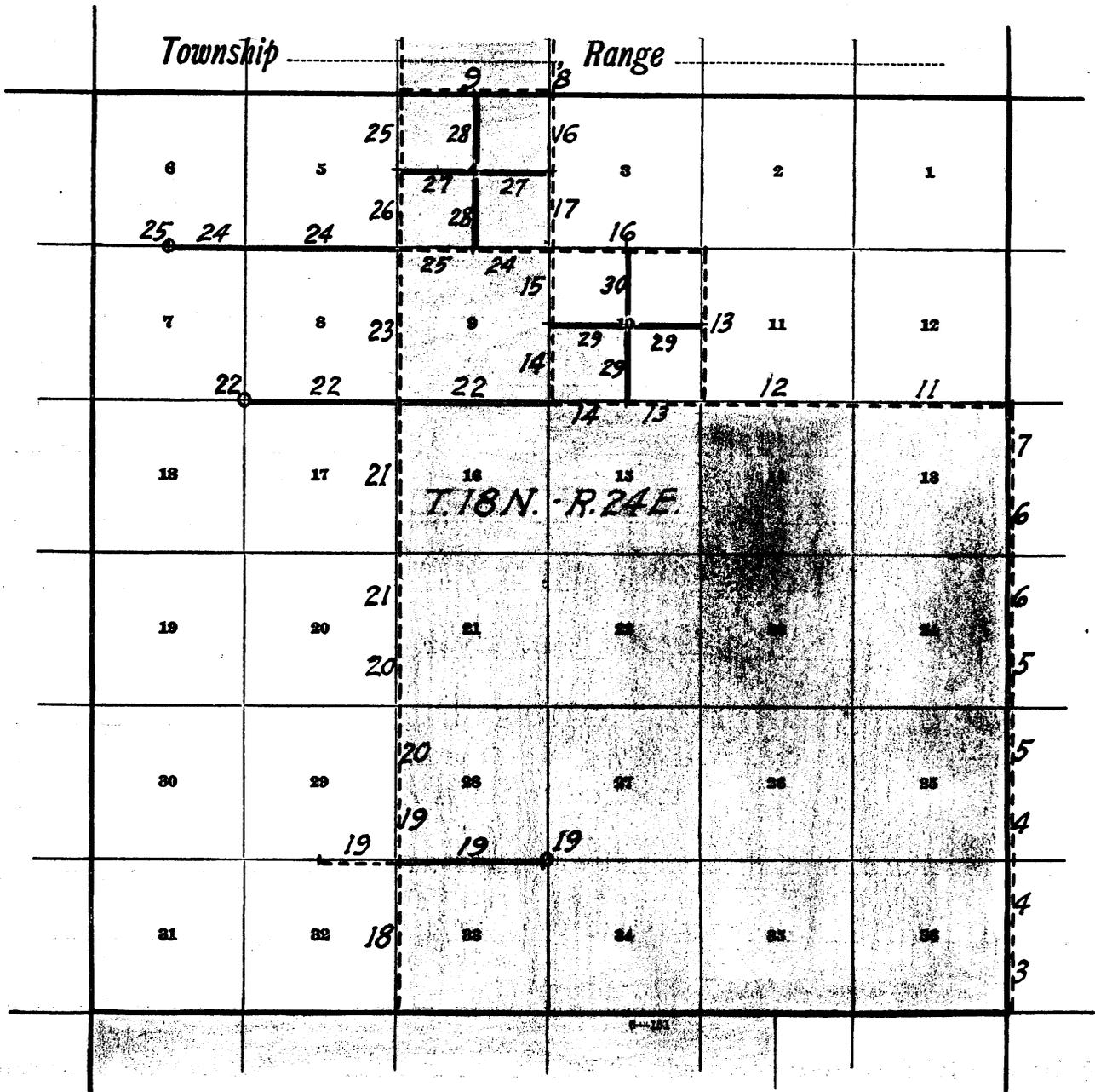
Resurvey and Survey commenced May 7, 1938

Resurvey and Survey completed August 29, 1938

BOOK 4199

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INDEX DIAGRAM.



Area within Petrified Forest National Monument.

— Lines of accepted surveys.

- - - Lines resurveyed under this group.

== Lines surveyed under this group.

=== Lines retraced to remote control cors.

o Remote control original cors. (outside lines of resurvey.)
Reconstructed with brass-capped iron posts.

The resurveys and surveys herein described were executed by Benjamin J. Kinsey, Surveyor and Cadastral Engineer, using a Buff transit No. 18000. The instrument is equipped with the improved Smith solar attachment and otherwise conforms to the standard specifications of the General Land Office.

The measurements were made with a Lufkin steel tape, 5 chs. in length, graduated every link for the first 100 lks., and thereafter at intervals of 10 lks. The tape was tested by comparison with a Lufkin standard and found correct. Measurements were made on the slope; vertical angles determined by clinometer in good adjustment, and the slope measurements reduced to horizontal equivalents for entry in the field notes.

PRELIMINARY FIELD TEST OF INSTRUMENT

by

BENJAMIN J. KINSEY, SURVEYOR

May 7, 1938: at station 20 chs. NE. from the cor. of secs. 11, 12, 13 and 14, T. 20 N., R. 26 E., G. & S.R.B. & M., Arizona, in latitude $35^{\circ}08'N.$, as determined by observations hereinafter described, and longitude $109^{\circ}32\frac{1}{2}'W.$, examine the adjustments of the transit and find no errors; then, to test the solar apparatus by comparing its indications with a true meridian established by Polaris observation, proceed as follows:

May 8, 1938: at 4h. 42m., a.m., l.m.t., observe Polaris at eastern 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 in top of a stake driven firmly in the ground about 10 chs. north.

Azimuth of Polaris at eastern elongation: $1^{\circ}15'37''$.

At 7h. 00m., a.m., lay off the azimuth of Polaris, $1^{\circ}15\frac{1}{2}'$ to the west, and mark the meridian thus determined, by a tack in top of a stake driven firmly in the ground about 10 chs. north.

At 9h. 00m., a.m., app.t., set off $35^{\circ}08'N.$ on the latitude arc; $17^{\circ}03'N.$ on the declination arc; and determine a meridian with the solar, which agrees with the true meridian.

Make a noon observation of the sun, for time and latitude, first setting on the sun's lower limb and noting the transit of the west limb, then, after reversal of the instrument, setting on the upper limb and noting the transit of the east limb.

Mean observed altitude-----	$71^{\circ}55'47''$
Mean watch time of observation ---	12h.15m.46s.
Reduced latitude -----	$35^{\circ}08'13''N.$
Reduced watch fast of l.n.t. -----	19m.19s.

At 3h. 00m., p.m., app.t., with the latitude arc unchanged, set off $17^{\circ}07'N.$ on the declination arc, and determine a meridian with the solar, which agrees with the true meridian.

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

Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

2.

Chains	<p>The east boundary of T. 18 N., R. 24 E. was surveyed by H. Meyrick, U.S. Deputy Surveyor, in 1882, and no retracement or resurvey of any part of same is of record.</p> <p>The following notes describe a resurvey of the south four miles of this Tp. bdy., reconstructing the existing corner monuments in their original positions, reestablishing missing corner monuments at intervals between existing corners proportional to the record of the original survey, and monumenting all corners with regulation brass-capped iron posts.</p> <p>This resurvey is made for the purpose of defining a portion of the boundary of an enlargement or addition to the Petrified Forest National Mon., which bdy. is identical with the range line, the land to the west thereof being within said Monument.</p> <hr/> <p style="text-align: center;">Retracement for Resurvey.</p> <hr/> <p>From cor. of Ts. 17 and 18 N., Rs. 24 and 25 E. North, on random line, bet. secs. 31 and 36.</p> <p>40.00 Find no trace of original $\frac{1}{4}$ sec. cor. Set temp. cor. and continue line and measurement.</p> <p>76.39 A point 9.04 chs. E. of original cor. of secs. 25, 30, 31 and 36. True course and dist. of line bet. secs. 31 and 36 are therefore, N. 6°45'W., 76.92 chs.</p> <hr/> <p>From cor. of secs. 25, 30, 31 and 36, North, on random line, bet. secs. 25 and 30 ($S\frac{1}{2}$).</p> <p>44.83 A point 6.13 chs. W. of original $\frac{1}{4}$ sec. cor. True course and dist. of $S\frac{1}{2}$ of line bet. secs. 25 and 30 are therefore, N. 7°47'E., 45.25 chs.</p> <p>From $\frac{1}{4}$ sec. cor., North, on random line, bet. secs. 25 and 30 ($N\frac{1}{2}$).</p> <p>41.20 A point 4.72 chs. W. of original cor. of secs. 19, 24, 25 and 30. True course and dist. of $N\frac{1}{2}$ of line bet. secs. 25 and 30 are therefore, N. 6°32'E., 41.47 chs.</p> <hr/> <p>From cor. of secs. 19, 24, 25 and 30, North, on random line, bet. secs. 19 and 24 ($S\frac{1}{2}$)</p> <p>38.18 A point 43 lks. W. of original $\frac{1}{4}$ sec. cor. True course and dist. of $S\frac{1}{2}$ of line bet. secs. 19 and 24 are therefore, N. 0°39'E., 38.18 chs.</p> <p>From $\frac{1}{4}$ sec. cor. North, on random line, bet. secs. 19 and 24 ($N\frac{1}{2}$).</p> <p>39.93 A point 2.16 chs. W. of original cor. of secs. 13, 18, 19 and 24.</p>
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Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

3.

Chains	True course and dist. of $N\frac{1}{2}$ of line bet. secs. 19 and 24 are therefore, N. $3^{\circ}06'E.$, 39.99 chs.
41.68	<p>From cor. of secs. 13, 18, 19 and 24, North, on random line, bet. secs. 13 and 18 ($S\frac{1}{2}$) A point 1.72 chs. E. of original $\frac{1}{4}$ sec. cor. True course and dist. of $S\frac{1}{2}$ of line bet. secs. 13 and 18 are therefore, N. $2^{\circ}22'W.$, 41.72 chs. From $\frac{1}{4}$ sec. cor., North, on random line, bet. secs. 13 and 18 ($N\frac{1}{2}$).</p>
38.99	<p>A point 12 lks. E. of original cor. of secs. 7, 12, 13 and 18 True course and dist. of $N\frac{1}{2}$ of line bet. secs. 13 and 18 are therefore, N. $0^{\circ}11'W.$, 38.99 chs.</p>
RESURVEY.	
<p>The cor. of Ts. 17 and 18 N., Rs. 24 and 25 E. established by H. Meyrick, U.S.D.S. in 1882 and reconstructed by S. E. Blout, U.S. Cadastral Engineer in 1921, is an iron post, 3 ins. diam., projecting 12 ins. above ground firmly set alongside the original corner stone, properly marked on brass cap and witnessed by a mound of stone S. of cor. The bdy. of the Petrified Forest National Monument extends northerly and westerly from this cor., identical with township boundaries.</p>	
Thence	
9.50	<p>N. $6^{\circ}45'W.$ on true line, bet. secs. 31 and 36. Over gently rolling sand plains, thru scattering undergrowth. Ascend gradually over S. slope. Low ridge, bears E. and W.; desc. gradually over N. slope to</p>
24.00	<p>Leave sand plains and enter bad land formation, bearing E. and W. Desc. 58 ft. over broken N. slope to</p>
37.50	<p>Shallow wash, course NW. Leave bad lands and reenter gently rolling sand plains. Asc. slightly over SW. slope to</p>
38.46	<p>(Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked</p>
$\begin{array}{c} \frac{1}{4} \\ \text{PFNM } S36 \mid S31 \\ 1882 \\ 1938 \end{array}$	
<p>raise a mound of stone 4 ft. base, 2 ft. high W. of cor.</p>	
<p>Continue over gently rolling sand plains, thru scattering undergrowth. Asc. gradually over SW. slope to sec. cor.</p>	

Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

4.

Chains

75.90 Wash, 30 lks. wide, course SW.

76.92 The original cor. of secs. 25, 30, 31 and 36, which is a mound of earth and stone on which is lying a wood post 2 ft. long, 3 ins. square, bearing visible but illegible marking on each face. Reconstruct this cor. monument as follows:

Remove the mound and in center of its position, set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, with the old wood post reset alongside, for cor. of secs. 25, 30, 31 and 36, with brass cap marked

	T18N		
	R24E	R25E	
PFNM	S25	S30	
	S36	S31	

1882
1938

dig pits 24x24x12 ins., one in each sec. 3-ft. dist.

Land, gently rolling and broken.

Soil, sandy and gumbo, 3rd and 4th rates.

Timber, none.

Undergrowth, native weeds and grasses and some cacti.

N. 7°47'E. on true line, bet. secs. 25 and 30 (S. $\frac{1}{2}$).

Over gently rolling sand plains, thru scattering undergrowth. Ascend gradually over SW. slope.

6.55 Wash, 50 lks. wide, course SW.; continue gradual ascent over SW. slope.

23.30 From this point U.S.G.S. bench mark 5464 bears E. 2.72 chs. dist.

28.90 Shallow wash, 30 lks. wide, course SW.; asc. gradually over S. slope to

45.25 The original $\frac{1}{4}$ sec. cor., which is a sandstone 13x11x9 ins. marked $\frac{1}{4}$ on W. face, firmly set in small mound of earth, and witnessed by faint traces of pits, one each N. and S. of cor. Reconstruct this cor. monument as follows:

Remove the stone and mound, and in center of its position set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, with original cor. stone reset alongside, for $\frac{1}{4}$ sec. cor.; with brass cap marked

	$\frac{1}{4}$		
	S25	S30	
PFNM			

1882
1938

dig pits 24x24x12 ins., one each N. and S. of post, 3 ft. dist.

U.S.G.S.B.M. (VS31 Elev. 5464) bears S. 0°40'W., 21.71 chs. Thence,

N. 6°32'E., on true line, bet. secs. 25 and 30 (N. $\frac{1}{2}$).

Over gently rolling sand plains, thru very scattering undergrowth. Ascend gradually over S. slope.

Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

PPM 4120

5.

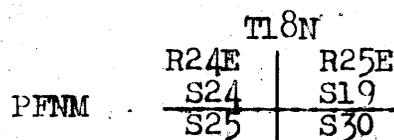
Chains

13.00 Ridge, bears NE. and SW. Leave sand plains and enter badland formation. Desc. gradually over broken NW. slope.

36.35 Shallow wash, 100 lks. wide, course NE.; asc. gradually over SE. slope to

41.47 The original cor. of secs. 19, 24, 25 and 30, which is a mound of earth and stone, on which is lying a cedar post 2 ins. square, 2½ ft. long, bearing visible but illegible marking. Reconstruct this cor. monument as follows:

Remove the mound and in center of its position, set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, with the old cedar post reset alongside, for cor. of secs. 19, 24, 25 and 30, with brass cap marked



1882
1938

raise a mound of stone, 3 ft. base, 1½ ft. high, W. of cor.

This cor. is about 75 lks. W. from a wash, course N.

Land, gently rolling and broken.
Soil, sandy and gumbo, 3rd and 4th rates.
Timber, none.
Undergrowth, native weeds, grasses and cacti.

N. 0°39'E., on true line, bet. secs. 19 and 24. (S. ½)

Over badland formation, along E. slope, thru very scattering undergrowth. Desc. gradually to

7.70 Enter wash, 100 lks. wide, course N. from S. 20°E. Desc. gradually in wash to

23.10 Leave wash, course NE. from S., continue over badlands. Asc. slightly over SE. slope.

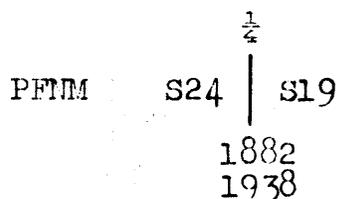
24.00 Point of low spur, slopes NE.; desc. over N. slope.

27.00 Same wash, course NW.; continue over badlands. Asc. gradually over broken SW. slope to

36.50 Leave badlands and enter rolling sandy land. Asc. gradually over SW. slope.

38.18 The original ¼ sec. cor. which is a sandstone 2x12x8 ins. firmly set in a mound of earth and stone, and faintly marked ¼ on W. face. Reconstruct this cor. monument as follows:

Remove the stone and mound, and in center of its position, set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, with the old cor. stone reset alongside, for ¼ sec. cor., with brass cap marked



Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

6.

Chains	<p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor. U.S.G.S.B.M. (VS30 Elev. 5420) bears N. 52°20'E., 11.42 chs. Thence</p> <p>N. 3°06'E., on true line, bet. secs. 19 and 24 (N. $\frac{1}{2}$).</p> <p>Over rolling sandy land, thru scattering undergrowth. Asc. 27 ft. over SW. slope.</p> <p>2.00 Ridge, bears NW. and SE.; desc. 69 ft. over NE. slope to</p> <p>6.40 Shallow wash, 40 lks. wide, course NW. Thence over nearly level and gently rolling land; thru sand dunes.</p> <p>39.99 The corner of secs. 13, 18, 19 and 24; which is a sandstone 4x10x12 ins., marked with 3 grooves on each of N. and S. faces, and firmly set in ground. No accessories. The field notes of the original survey describes a wood post as monumenting this cor., but diligent search in this vicinity fails to reveal any trace of same, therefore accept the above described stone as marking the original section corner point. Reconstruct this corner monument as follows:</p> <p>Remove the old cor. stone and in same place set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, with old stone reset alongside, for cor. of secs. 13, 18, 19 and 24, with brass cap marked</p> <div style="text-align: center; margin: 10px 0;"> <table style="border-collapse: collapse; margin: auto;"> <tr><td></td><td colspan="2" style="text-align: center;">T18N</td><td></td></tr> <tr><td></td><td style="text-align: center;">R24E</td><td style="border-left: 1px solid black; text-align: center;">R25E</td><td></td></tr> <tr><td style="text-align: right;">PFNM</td><td style="text-align: center;">S13</td><td style="border-left: 1px solid black; text-align: center;">S18</td><td></td></tr> <tr><td></td><td style="text-align: center;">S24</td><td style="border-left: 1px solid black; text-align: center;">S19</td><td></td></tr> </table> <p style="margin: 5px 0 0 40px;">1882 1938</p> </div> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>Land, rolling, nearly level; broken and gently rolling. Soil, sandy and gumbo, 3rd and 4th rates. Timber, none. Undergrowth, native weeds; grasses and cacti.</p> <hr/> <p>N. 2°22'W., on true line, bet. secs. 13 and 18 (S. $\frac{1}{2}$).</p> <p>Over nearly level and gently rolling land, thru scattering undergrowth. Desc. gradually over NW. slope to</p> <p>41.72 The $\frac{1}{4}$ sec. cor., which is a sandstone 2x8x6 ins., marked $\frac{1}{4}$ on W. face, firmly set, and witnessed by a mound of stone W. The record of the original survey describes a much larger stone, and pits and mound of earth as accessories, but as no trace of any other cor. monument can be found in this vicinity; accept the above described stone as marking the original $\frac{1}{4}$ sec. cor. point. Reconstruct this corner monument as follows:</p> <p>Remove the old cor. stone and in same place, set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, with old stone reset alongside, for $\frac{1}{4}$ sec. cor., with brass cap marked</p> <div style="text-align: center; margin: 10px 0;"> <table style="border-collapse: collapse; margin: auto;"> <tr><td></td><td colspan="2" style="text-align: center;">$\frac{1}{4}$</td><td></td></tr> <tr><td></td><td style="text-align: center;">S13</td><td style="border-left: 1px solid black; text-align: center;">S18</td><td></td></tr> </table> <p style="margin: 5px 0 0 40px;">1882 1938</p> </div>		T18N				R24E	R25E		PFNM	S13	S18			S24	S19			$\frac{1}{4}$				S13	S18	
	T18N																								
	R24E	R25E																							
PFNM	S13	S18																							
	S24	S19																							
	$\frac{1}{4}$																								
	S13	S18																							

Resurvey: Part of East Boundary of T. 18 N., R. 24 E.

7.

Chains

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

Thence

N. 0°11'W. on true line, bet. secs. 13 and 18 (N. $\frac{1}{2}$).

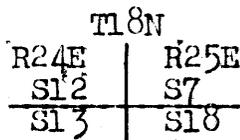
Over nearly level sandy land, thru scattering undergrowth.

16.85 Center of wash, 200 lks. wide, 4 ft. deep, course NW.

33.76 Wire fence, bears NW. and SE.

38.99 The cor. of secs. 7, 12, 13 and 18, which is a mound of earth from which traces of pits bear NE., SE., SW. and NW., equidistant. Find no trace of the wood post described in the record of the original survey as having been set to monument this sec. cor. A depression in the center of the mound gives evidence that it must have originally been raised around a post or similar object. To verify this mound as the remains of the original sec. cor., make retracement north on the range line bet. secs. 7 and 12 and at 79.04 chs. N. 0°32'W., find the original cor. of secs. 1, 6, 7 and 12, which is a wood post marked and witnessed as described in the official record; then, retrace east bet. secs. 7 and 18, T. 18 N., R. 25 E., and at 39.04 chs. S. 89°55'E. find the original $\frac{1}{4}$ sec. cor. of said secs. which is a sandstone marked and witnessed as described in the official record; and then retrace west bet. secs. 12 and 13, T. 18 N., R. 24 E. and at 80.34 chs. S. 89°51'W. find the original cor. of secs. 11, 12, 13 and 14, which is a sandstone marked and witnessed as described in the official record. These retracements give satisfactory evidence that the mound of earth and pits described above are the remains of the original cor. of secs. 7, 12, 13 and 18.

Reconstruct this corner monument as follows: remove the mound, and in center of its position, set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, for cor. of secs. 7, 12, 13 and 18, with brass cap marked



PFNM 1882
 1938

dig pits 24x24x12 ins., one in each sec. 3 ft. dist.

As the boundary of the addition to the Petrified Forest National Monument extends westerly from this cor., identical with subdivision line, bet. secs. 12 and 13, discontinue resurvey of E. bdy. of T. 18 N., R. 24 E. at this sec. cor.

Land, nearly level and gently rolling.
Soil, sandy and gumbo, 3rd and 4th rates.
Timber, none.
Undergrowth, native weeds, grasses and cacti.

Resurvey: Part of North Boundary of T. 18 N., R. 24 E.

8.

Chains

The North bdy. of T. 18 N., R. 24 E. was surveyed by H. Meyrick, U.S. Deputy Surveyor in 1882, and no retracement or resurvey of any part of said township boundary is of record.

The following notes describe a resurvey of the mile bet. secs. 4 and 33, reconstructing the two terminal sec. cors. thereof in their original positions, reestablishing the missing $\frac{1}{4}$ sec. cor. at midpoint bet. the sec. cors., and monumenting all of said cors. with regulation brass-capped iron posts.

This resurvey is executed for the purpose of defining a part of the boundary of an addition to the Petrified Forest National Monument, said boundary extending northerly and southerly, identical with subdivision lines, thru the two section corners, and for the purpose of survey of the meridional and latitudinal quarter-section lines of sec. 4, T. 18 N., R. 24 E., in order to segregate from said National Monument, the SE $\frac{1}{4}$ of said section which is patented land.

Retracement for Resurvey.

From original cor. of secs. 3, 4, 33 and 34,
N. 89°59'W., on random line, bet. secs. 4 and 33.

40.00 Find no trace of original $\frac{1}{4}$ sec. cor.
Set temp. cor. and continue line and measurement.

82.19 Intersect N. and S. line 160 lks. N. of accepted point
of original location of the cor. of secs. 4, 5, 32 and
33.

True course and dist. of Tp. bdy. bet. secs. 4 and 33
are therefore S. 88°54'W., 82.20 chs.

RESURVEY.

The original cor. of secs. 3, 4, 33 and 34 is a sandstone, 10x22x12 ins., marked with 3 notches on each of E. and W. faces, and firmly set in ground. No trace of the record accessories (pits in each sec. and mound of earth alongside) can be found.

Reconstruct this corner monument as follows:
remove the stone and in same place set an iron post, 3 ft. long, 2 ins. in dian., 26 ins. in the ground, with old cor. stone reset alongside, for cor. of secs. 3, 4, 33 and 34, with brass cap marked

	T19N	R24E
	S33	S34
PFNM	S4	S3
	T18N	

1882
1938

dig pits 24x24x12 ins., one in each sec. 3 ft. dist.

Fence cor. bears S. 30°W., 4.09 chs. dist. from which
fences extend N., S. and W.

Boundary of addition to Petrified Forest National Monu-

Resurvey: Part of North Boundary of T. 18 N., R. 24 E.

9.

Chains	<p>ment extends northerly and southerly from this sec. cor. identical with subdivision lines, the area to the W. thereof being within said Monument.</p> <p>From above described sec. cor.</p> <p>S. 88°54'W., on true line; bet. secs. 4 and 33.</p> <p>Thru addition to Petrified Forest National Monument.</p> <p>Over gently rolling sandy plains, thru scattering undergrowth. Ascend gradually over SE. slope.</p> <p>3.34 Fence, bears N. and S.</p> <p>18.00 Low ridge, bears NE. and SW., desc. gradually over NW. slope.</p> <p>41.10 (Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked</p> $\frac{1}{4} \frac{S \ 33}{S \ 4}$ <p style="text-align: center;">1882 1938</p> <p>raise a mound of stone, 4 ft. base, 2 ft. high, N. of cor.</p> <p>Continue over gently rolling sandy plains, thru scattering undergrowth. Asc. gradually over E. slope.</p> <p>43.10 Highway, bears N. and S. (oiled surface). Extends northerly to U.S. Highway No. 66, and southerly to headquarters of Superintendent of Petrified Forest National Monument.</p> <p>48.90 Old road, bears N. and S.</p> <p>50.00 Low ridge, bears N. and S.; desc. gradually over W. slope to</p> <p>82.20 The accepted point of original location of the cor. of secs. 4, 5, 32 and 33, now marked by a wood post, 12 ins. in diam., projecting 8 ft. above ground, firmly set on W. side of a fence bearing N. $\frac{3}{4}$°E. and S. $\frac{3}{4}$°W. The post is unmarked.</p> <p>The record of the establishment of this sec. cor. describes a sandstone with regulation marking and witnessed by pits in each sec. and mound of earth alongside. No trace of such a monument can be found in the vicinity, therefore accept the above described wood post as marking the original cor. point.</p> <p>Reconstruct this cor. monument as follows: alongside and on W. side of the wood post, set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, with brass cap marked</p> $\begin{array}{c} T19N \quad R24E \\ S32 \mid S33 \\ \hline S5 \mid S4 \\ T18N \end{array} \quad \text{PFMM}$ <p style="text-align: center;">1882 1938</p> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p>
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Resurvey; Part of North Boundary of T. 18 N., R. 24 E.

Chains

Boundary of addition to Petrified Forest National Monument extends northerly and southerly from this sec. cor., identical with subdivision lines, the area to the E. thereof being within said Monument.

Land, gently rolling.

Soil, sandy, 3rd rate.

Timber, none.

Undergrowth, native weeds, grasses and cacti.

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

BOOK 4199

11

Chains

The subdivision lines of T. 18 N., R. 24 E., were surveyed by H. Meyrick, U. S. Deputy Surveyor in 1882, and no retracement or resurvey of any part of same is of record.

The following notes describe a resurvey of those subdivision lines of the township which form a part of the boundary of the addition to the Petrified Forest National Monument, and also lines bet. secs. 4 and 9, 3 and 10, 10 and 11, S. $\frac{1}{2}$ bet. secs. 9 and 10, W. $\frac{1}{2}$ bet. secs. 10 and 15, and E. $\frac{1}{2}$ bet. secs. 29 and 32.

In this resurvey all existing original corner monuments controlling the lines resurveyed, were reconstructed in their original positions, all missing corner monuments reestablished between existing cors. at intervals proportional to the record of the original survey, and all reconstructed and reestablished cors. monumented with regulation brass-capped iron posts. All resurveyed lines were first retraced by random lines on record bearings to determine the true courses and distances, but such retracements have been omitted from the following notes and only the resulting true courses and distances are recorded herein.

From the cor. of secs. 7, 12, 13 and 18 on E. bdy. of the Tp., hereinbefore described,

S. $89^{\circ}51'W.$, on true line, bet. secs. 12 and 13.

Over nearly level sandy land, thru scattering undergrowth.

40.17 (Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for $\frac{1}{2}$ sec. cor., with brass cap marked

$$\frac{1}{4} \begin{array}{l} S 12 \\ S 13 \end{array}$$

PFNM

1882
1938

dig pits 24x24x12 ins., one each E. and W. of post, 3 ft. dist.

43.40 Center of wash, 200 lks. wide, 6 ft. deep, course NW.

63.27 Telephone line, bears NE. and SW.

80.34 The original cor. of secs. 11, 12, 13 and 14, which is a sandstone 4x12x18 ins., firmly set, marked and witnessed as described in the official record.

Reconstruct this cor. monument as follows:

remove the old cor. stone and in same place, set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, with the old cor. stone reset alongside, for cor. of secs. 11, 12, 13 and 14, with brass cap marked

$$\begin{array}{c|c} T18N & R24E \\ \hline S11 & S12 \\ \hline S14 & S13 \end{array}$$

PFNM

1882
1938

dig pits 24x24x12 ins., one in each sec. 3 ft. dist.

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

12

Chains

Land, nearly level.
Soil, sandy, 3rd rate.
Timber, none.
Undergrowth, native weeds, grasses and cacti.

S. $89^{\circ}56'W.$, on true line, bet. secs. 11 and 14 ($E.\frac{1}{2}$).

Over nearly level land, thru scattering undergrowth.

5.35 Wire fence, bears NW. and SE. Extends SE. about 4 chs. thence E.

40.00 The original $\frac{1}{4}$ sec. cor., which is a sandstone $1x4x6$ ins., firmly set, marked and witnessed as described in the official record.
Reconstruct this cor. monument as follows:
remove old cor. stone and in same place, set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, with the old cor. stone reset alongside, for $\frac{1}{4}$ sec. cor. with brass cap marked

$$\frac{1}{4} \begin{array}{l} S 11 \\ S 14 \\ PFNM \end{array}$$

1882
1938

dig pits $24x24x12$ ins., one each E. and W. of post, 3 ft. dist.

Thence

N. $89^{\circ}44'W.$, on true line, bet. secs. 11 and 14 ($W.\frac{1}{2}$).

Over nearly level land, thru scattering undergrowth.

40.06 The original cor. of secs. 10, 11, 14 and 15, which is a sandstone $4x5x18$ ins., firmly set, marked and witnessed as described in the official record.
Reconstruct this cor. monument as follows:
remove the old cor. stone and in same place, set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, with the old cor. stone reset alongside, for cor. of secs. 10, 11, 14 and 15, with brass cap marked

$$\begin{array}{l} T18N \quad R24E \\ S10 \quad S11 \\ S15 \quad S14 \\ PFNM \end{array}$$

1882
1938

dig pits $24x24x12$ ins., one in each sec. 3 ft. dist.

Boundary of addition to Petrified Forest National Monument extends easterly and westerly from this cor., identical with the sec. lines.

Land, nearly level.
Soil, sandy, 3rd rate.
Timber, none.
Undergrowth, native weeds, grasses and cacti.

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

BOOK 4199

13

Chains	<p>N. 0°03'W., on true line, bet. secs. 10 and 11 (S. $\frac{1}{2}$).</p> <p>Over nearly level sandy land, thru scattering undergrowth.</p> <p>5.00 Wash, 30 lks. wide, 2 ft. deep, course SW.</p> <p>40.00 The original $\frac{1}{4}$ sec. cor., which is a sandstone 18x6x4 ins., firmly set, marked $\frac{1}{4}$ on W. face and witnessed by faint traces of pits, one each N. and S. of cor. Reconstruct this cor. monument as follows: remove the old cor. stone and in same place, set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, with old cor. stone reset alongside, for $\frac{1}{4}$ sec. cor., with brass cap marked</p> <div style="text-align: center;"> $\frac{1}{4}$ S10 S11 1882 1938 </div> <p>dig pits 24x24x12 ins., one each N. and S. of post, 3 ft. dist.</p> <p>Thence</p> <p>N. 0°02'W., on true line, bet. secs. 10 and 11 (N. $\frac{1}{2}$).</p> <p>Over nearly level sandy land, thru scattering undergrowth.</p> <p>4.94 Left bank of wash, 5 ft. high, bears NW. and SE. Thence across wash, course NW.</p> <p>9.94 Right bank of wash, 5 ft. high, bears NW. and SE. Leave wash. Thence over gently rolling land.</p> <p>39.94 The original cor. of secs. 2, 3, 10 and 11, which is a sandstone 8x9x8 ins., firmly set and marked as described in the official record. No accessories. Reconstruct this cor. monument as follows: remove the old cor. stone and in same place, set an iron post, 3 ft. long, 2 ins. in diam., 28 ins. in the ground, with old cor. stone reset alongside, for cor. of secs. 2, 3, 10 and 11, with brass cap marked</p> <div style="text-align: center;"> T18N R24E S3 S2 S10 S11 1882 1938 </div> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>Land, nearly level and gently rolling. Soil, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.</p> <hr/> <p>From cor. of secs. 10, 11, 14 and 15, S. 89°44'W., on true line, bet. secs. 10 and 15. Along boundary of Petrified Forest National Monument.</p>
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Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

14

Chains	Over nearly level sandy land, thru scattering undergrowth.						
22.00	Wash, 30 lks. wide, course SW.						
39.95	(Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 27 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked						
	PFNM $\frac{1}{4} \begin{array}{r} S 10 \\ S 15 \end{array}$ 1882 1938						
	raise a mound of stone, 4 ft. base, 2 ft. high, N. of cor.						
	Leave the boundary of Petrified Forest National Monument which extends northerly from this cor. to the center of sec. 10, identical with the $S\frac{1}{2}$ of the meridional $\frac{1}{4}$ sec. line of said sec.						
45.90	Wash, 10 lks. wide, course NW.						
68.35	Road, bears NW. and SE., extends NW. to "CCC" camp.						
69.90	Foot of slope, bears NW. and SE.; leave nearly level and enter rolling land. Asc. 63 ft. over NE. slope to						
79.90	The original cor. of secs. 9, 10, 15 and 16, which is a sandstone 8x4x12 ins., firmly set, marked as described in the official record. No accessories. Reconstruct this cor. monument as follows: remove the old cor. stone and in same place, set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, with old cor. stone reset alongside, for cor. of secs. 9, 10, 15 and 16, with brass cap marked						
	<table border="1"> <tr> <td>T18N</td> <td>R24E</td> </tr> <tr> <td>S9</td> <td>S10</td> </tr> <tr> <td>S16</td> <td>S15</td> </tr> </table> 1882 1938	T18N	R24E	S9	S10	S16	S15
T18N	R24E						
S9	S10						
S16	S15						
	raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.						
	Land, W. 10 chs. rolling, remainder nearly level. Soil, W. 10 chs. rocky, 4th rate, remainder sandy 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.						
	N. 0°04'W., on true line, bet. secs. 9 and 10.						
	Over rolling land, thru scattering undergrowth. Desc. 63 ft. over NE. slope.						
11.75	Wire fence, bears NE. and SW.						
14.25	Foot of slope, bears NW. and SE. Leave rolling and enter nearly level land.						
15.90	S. side of "CCC" bunk house, 40 lks. W. from its SE. cor.						
16.26	N. side of "CCC" bunk house.						

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

FOUR 4789

15

Chains	
17.00	SE. cor. of another "CCC" bunk house.
18.80	Road, bears NW. and SE.
20.30	"CCC" camp incinerator on line.
20.55	Fence, bears N. 20°W. and S. 20°E.
22.70	Wash, 15 lks. wide, 3 ft. deep, course NW.
40.51	(Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\begin{array}{c} \frac{1}{4} \\ \\ \text{S9} \quad \quad \text{S10} \\ \text{PFNM} \\ \\ 1882 \\ 1938 \end{array}$
	raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.
	The boundary of Petrified Forest National Monument extends easterly from this cor. to the center of sec. 10 identical with the $W\frac{1}{2}$ of the latitudinal $\frac{1}{4}$ sec. line of said sec. and northerly identical with $N\frac{1}{2}$ of line bet. secs. 9 and 10..
40.89	Wire fence, bears NE. and SW.
53.80	Left bank of wash, 4 ft. high, bears NW. and SE. Thence across wash, course NW.
56.50	Right bank of wash, 4 ft. high, bears NW. and SE. Leave wash.
65.90	Left bank of Rio Puerco River, 6 ft. high, bears NE. and SW. Thence across dry bed of said river.
72.80	Main channel of Rio Puerco River, course SW., joined at this point by Dead River, from NW. Continue across dry river bed.
81.02	<p>Point for reestablishment of the cor. of secs. 3, 4, 9 and 10 determined by double proportion between original cors. 1 mile southerly, 1 mile easterly, 1 mile northerly and $2\frac{1}{2}$ miles westerly. This cor. point is at foot of left bank of Dead River, 6 ft. high, bearing NW. and SE., merging into the right bank of the Rio Puerco River. It is impracticable to monument the sec. cor. at this point, owing to the liability of its destruction by floods, therefore establish witness cor. at 1.85 chs. N. 1°00'E. as hereinafter described.</p> <p>From true point for cor. of secs. 3, 4, 9 and 10, South end of highway bridge over Rio Puerco River, bears S. $37\frac{1}{2}$°W. NW. cor. of checking station bears S. 25°25'W. West end of Santa Fe R.R. bridge over Dead River, bears N. 48°W. North end of highway bridge over Santa Fe R.R., bears N. 74°55'W.</p>
	<p>Land, rolling and nearly level. Soil, S. 14 chs. rocky 4th rate; remainder, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.</p>

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

16

Chains	
	<p>From cor. of secs. 2, 3, 10 and 11.</p> <p>N. 89°35'W., on true line, bet. secs. 3 and 10.</p> <p>Over gently rolling land, thru scattering undergrowth and very scattering timber. Descend gradually over NW. slope.</p>
14.34	Road, bears NE. and SW.
14.54	Fence, bears NE. and SW.
39.97	<p>(Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked</p> $\frac{1}{4} \begin{array}{c} S 3 \\ S 10 \end{array}$ <p>1882 1938</p> <p style="text-align: right;">from which</p> <p>A cottonwood, 24 ins. in diam., bears SE., 42 lks. dist. marked $\frac{1}{4}$ S10 BT.</p> <p>A cottonwood, 20 ins. in diam., bears NW., 420 lks. dist., marked $\frac{1}{4}$ S3 BT.</p>
58.69	Left bank of Rio Puerco River, 6 ft. high, bears NE. and SW. Thence across dry bed of said river.
73.44	Main channel of Rio Puerco River, course SW.
74.59	Right bank of Rio Puerco River, 12 ft. high, bears NE. and SW. Leave river bed. Thence along S. slope of sand ridge.
79.80	Left bank of Dead River, 6 ft. high, bearing NW. and SE. merging into right bank of Rio Puerco River. Desc. to
79.94	<p>True point for cor. of secs. 3, 4, 9 and 10 at foot of river bank. Witness cor. established at 1.85 chs. N. 1°00'E, as hereinafter described.</p> <p>Land, gently rolling. Soil, sandy, 3rd rate. Timber, cottonwood. Undergrowth, arrowweeds, grasses and cacti.</p>
	<p>From cor. of secs. 3, 4, 33 and 34 on N. bdy. of the Tp. hereinbefore described,</p> <p>S. 1°00'W., on true line, bet. secs. 3 and 4.</p> <p>Over gently rolling sandy plain, thru scattering undergrowth. Desc. gradually over SE. slope.</p>
17.21	Road, bears NE. and SW.
35.00	<p>Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for witness cor. to $\frac{1}{4}$ sec. cor., with brass cap marked</p> $\begin{array}{c} \frac{1}{4} \\ PFTM \quad S4 \quad \quad S3 \\ \quad \quad \quad WC \end{array}$ <p>1882 1938</p>

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

17

Chains															
	dig pits 24x24x12 ins., one each N. and S. of post, 3 ft. dist. U.S.G.S.B.M. (Elev. 5336.3) bears S. 29°45'W., 35.21 chs. Windmill bears S. 47°20'W. Checking station bears S. 13°55'W. House bears S. 61°15'W. House bears S. 49°W. West end of Santa Fe R.R. bridge over Dead River bears S. 30°20'W. U.S.G.S.B.M. (VS33 Elev. 5359) bears N. 82°E., 62.82 chs.														
36.61	Right bank of Dead River, 6 ft. high, bears NE. and SW. Thence over level, dry bed of said river, course SW.														
40.50	(Proportional dist.) True point for reestablishment of $\frac{1}{4}$ sec. cor. is in bed of Dead River where it is impracticable to monument the cor., therefore establish witness cor. at 5.50 chs. N. 1°00'E., as described above.														
46.81	Left bank of Dead River, 4 ft. high, bears NE. and SW. Leave river bed and enter gently rolling sandy plain. Ascend gradually over NW. slope.														
56.70	Road, bears NE. and SW.														
58.10	Telephone line, bears NE. and SW.														
58.70	Western Union Telegraph line, bears NE. and SW.														
59.45	Center of double tracks of Santa Fe R.R., bears NE. and SW.														
60.47	Telephone line, bears NE. and SW.														
61.51	Fence, bears NE. and SW.														
79.16	Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for witness cor. to cor. of secs. 3, 4, 9 and 10, with brass cap marked <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>T18N</td> <td>R24E</td> </tr> <tr> <td></td> <td>S4</td> <td>S3</td> </tr> <tr> <td>PFNM</td> <td>S9</td> <td>S10</td> </tr> <tr> <td></td> <td colspan="2">WC</td> </tr> </table> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>1882</td> </tr> <tr> <td>1938</td> </tr> </table> <div style="text-align: right;">from which</div> <p>A cottonwood, 6 ins. in diam., bears N. 21$\frac{1}{2}$°E., 192 lks. dist., marked T18N R24E S3 WC BT. A cottonwood, 8 ins. in diam., bears N. 25$\frac{1}{4}$°W., 505 lks. dist., marked T18N R24E S4 WC BT. A cottonwood, 10 ins. in diam., S. 78°W., 722 lks. dist. marked T18N R24E S9 WC BT.</p>		T18N	R24E		S4	S3	PFNM	S9	S10		WC		1882	1938
	T18N	R24E													
	S4	S3													
PFNM	S9	S10													
	WC														
1882															
1938															
80.01	SW. end of sand ridge, bearing NE. and SW. Desc. slightly over S. slope.														
80.85	Left bank of Dead River, 6 ft. high, bears NW. and SE.														
81.01	True point for cor. of secs. 3, 4, 9 and 10 at foot of river bank. Witness cor. established at 1.85 chs. N. 1°00'E. as described above. Land, gently rolling and level. Soil, sandy and gumbo, 3rd and 4th rates. Timber, cottonwoods along the river banks. Undergrowth, arrowweeds, grasses and cacti.														

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

18

Chains	<p>The cor. of secs. 4, 5, 32 and 33 on S. bdy. of the Tp., established by H. Meyrick, U.S.D.S. in 1882 and reconstructed by S.E. Blout, U.S. Cadastral Engineer in 1921, is an iron post, 2 ins. in diam., projecting 12 ins. above ground, firmly set alongside the original cor. stone, properly marked on brass cap, and witnessed by a mound of stone W. of cor. This sec. cor. is at cor. of fences extending W. and SE. The bdy. of the Petrified Forest National Monument extends westerly from this cor. identical with the Tp. bdy., and northerly identical with the section line.</p> <p>Thence</p> <p>N. $0^{\circ}36'W.$, on true line, bet. secs. 32 and 33.</p> <p>Over nearly level sandy land, sloping slightly to the NW., thru scattering undergrowth.</p> <p>28.00 Blue clay bank, bears NE. and SW.; desc. 30 ft. over NW. slope to</p> <p>30.00 Foot of bank, bears NE. and SW.; reenter nearly level land.</p> <p>38.70 Shallow wash, 20 lks. wide, course NW.</p> <p>40.70 (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 16 ins. in the ground to bedrock, and in a mound of stone to top, for $\frac{1}{4}$ sec. cor., with brass cap marked</p> <div style="text-align: center;"> $\frac{1}{4}$ <table style="margin: auto;"> <tr> <td>S32</td> <td> </td> <td>S33</td> <td>PFNM</td> </tr> <tr> <td></td> <td></td> <td>1882</td> <td></td> </tr> <tr> <td></td> <td></td> <td>1938</td> <td></td> </tr> </table> </div> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>U.S.G.S.B.M. (Elev. 5359) bears N. $67^{\circ}07'W.$, 34.00 chs.</p> <p>72.00 Center of wash, 5 chs. wide, course NW.</p> <p>81.40 Point for reestablishment of the cor. of secs. 28, 29, 32 and 33, determined by double proportion between original corners 1 mile easterly, northerly, and southerly, and $\frac{1}{2}$ mile westerly.</p> <p>Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for cor. of secs. 28, 29, 32 and 33, with brass cap marked</p> <div style="text-align: center;"> <table style="margin: auto;"> <tr> <td>T18N</td> <td> </td> <td>R24E</td> <td></td> </tr> <tr> <td>S29</td> <td> </td> <td>S28</td> <td></td> </tr> <tr> <td>S32</td> <td> </td> <td>S33</td> <td>PFNM</td> </tr> <tr> <td></td> <td></td> <td>1882</td> <td></td> </tr> <tr> <td></td> <td></td> <td>1938</td> <td></td> </tr> </table> </div> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>Land, nearly level.</p> <p>Soil, sandy and gumbo, 3rd and 4th rates.</p> <p>Timber, none.</p> <p>Undergrowth, native weeds, grasses and cacti.</p>	S32		S33	PFNM			1882				1938		T18N		R24E		S29		S28		S32		S33	PFNM			1882				1938	
S32		S33	PFNM																														
		1882																															
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S32		S33	PFNM																														
		1882																															
		1938																															

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

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19

Chains

Reconstruction of cor. of secs. 27, 28, 33 and 34.

The original cor. of secs. 27, 28, 33 and 34 is a sandstone 8x6x1 in. loosely set in a mound of stone, and marked with 5 grooves on E. face and 1 groove on S. face. No accessories.

Reconstruct this cor. monument as follows:

Remove the old cor. stone and mound of stone and in center of its position, set an iron post, 3 ft. long, 2 ins. in dian., 26 ins. in the ground, with old cor. stone reset alongside, for cor. of secs. 27, 28, 33 and 34, with brass cap marked

T18N	R24E
S28	S27
S33	S34

1882
1938

raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.

The reestablished cor. of secs. 28, 29, 32 and 33 bears N. 87°08'W., 78.58 chs.

From cor. of secs. 28, 29, 32 and 33,

S. 86°05'W., on true line, bet. secs. 29 and 32 (E. $\frac{1}{2}$).

Over nearly level land, thru scattering undergrowth.

6.00 Center of wash, 5 chs. wide, course NW.

21.50 Old road, bears N. and S.

39.43 The original $\frac{1}{4}$ sec. cor. of secs. 29 and 32, which is a sandstone 8x8x20 ins., marked $\frac{1}{4}$ on N. face, firmly set alongside fence cor. from which old fences extend NW. and S. No accessories.
Reconstruct this cor. monument as follows:
Remove old cor. stone, and in same place set an iron post, 3 ft. long, 1 in. in dian., 28 ins. in the ground, with old cor. stone reset alongside, for $\frac{1}{4}$ sec. cor., with brass cap marked

$\frac{1}{4}$	S 29
	S 32

1882
1938

raise a mound of stone, 4 ft. base, 2 ft. high, N. of cor.

Land, nearly level.

Soil, sandy, 3rd rate.

Timber, none.

Undergrowth, native weeds, grasses and cacti.

From cor. of secs. 28, 29, 32 and 33

N. 0°51'E., on true line bet. secs. 28 and 29.

Over nearly level land, thru scattering undergrowth.

28.20 Enter wash, 50 lks. wide, course N. from SE.; thence in wash to

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

Chains	
36.00	Leave wash, course NW. from S. Enter gently rolling land. Asc. gradually over SW. slope to
40.70	(Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\frac{1}{4}$ S29 S28 PFM 1882 1938
	dig pits 24x24x12 ins., one each N. and S. of post, 3 ft. dist.
	Continue gradual ascent over SW. slope.
55.70	Wash, 30 lks. wide, 2 ft. deep, course SW.
73.50	Enter low sand dunes, bearing E. and W.
81.40	The original cor. of secs. 20, 21, 28 and 29, which is a mound of earth and stone, on which is lying several pieces of a broken sandstone. One piece shows groove marks which identifies it as a fragment of the original corner stone. Reconstruct this cor. monument as follows: remove the mound, and in center of its position, set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, with the fragments of the old cor. stone deposited at base, for cor. of secs. 20, 21, 28 and 29, with brass cap marked
	T18N R24E S20 S21 PFM S29 S28 1882 1938
	raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.
	Land, nearly level and gently rolling. Soil, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.
	N. 0°04'E., on true line, bet. secs. 20 and 21.
	Over gently rolling land, thru low sand dunes and scattering undergrowth.
1.30	Road, bears E. and W.
14.10	Leave low sand dunes, bearing E. and W.
15.50	Wash, 10 lks. wide, course NW.; asc. gradually over S. slope to
40.51	(Midpoint) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{2}$ sec. cor., with brass cap marked
	$\frac{1}{2}$ S20 S21 PFM 1882 1938

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

21

Chains	<p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>Asc. gradually over S. slope.</p> <p>42.55 Road, bears NW. and SE.</p> <p>44.80 Low sand ridge, bears E. and W.; desc. gradually over N. slope.</p> <p>50.98 Telephone line, bears E. and W.</p> <p>81.02 The original cor. of secs. 16, 17, 20 and 21, which is a mound of earth and stone, on top of which is lying several pieces of a broken sandstone. No marking is visible on any of the fragments but they are probably the remains of the original corner stone. Reconstruct this cor. monument as follows: remove the mound, and in center of its position, set an iron post, 3 ft. long, 2 ins. in diam., 20 ins. in the ground to bedrock, with the fragments of old cor. stone deposited at base, and raise a mound of stone around post, for cor. of secs. 16, 17, 20 and 21, with brass cap marked</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>T18N</td> <td>R24E</td> <td></td> </tr> <tr> <td>S17</td> <td>S16</td> <td>PFNM</td> </tr> <tr> <td>S20</td> <td>S21</td> <td></td> </tr> </table> <p style="text-align: center;">1882 1938</p> <p>raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.</p> <p>Land, gently rolling. Soil, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.</p>	T18N	R24E		S17	S16	PFNM	S20	S21				
T18N	R24E												
S17	S16	PFNM											
S20	S21												
	<p>N. 0°09'W., on true line, bet. secs. 16 and 17.</p> <p>Over gently rolling land, thru scattering undergrowth.</p> <p>39.91 (Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>$\frac{1}{4}$</td> <td></td> </tr> <tr> <td>S17</td> <td> </td> <td>S16 PFNM</td> </tr> <tr> <td></td> <td>1882</td> <td></td> </tr> <tr> <td></td> <td>1938</td> <td></td> </tr> </table> <p>dig pits 24x24x12 ins., one each N. and S. of post, 3 ft. dist.</p> <p>42.90 Wash, 5 lks. wide, course NW.</p> <p>45.90 Road, bears NE. and SW.</p> <p>64.47 Fence, bears E. and W.</p> <p>79.82 Point for reestablishment of the cor. of secs. 8, 9, 16 and 17, determined by double proportion between original cors. 1 mile easterly and southerly, point for cor. of secs. 7, 8, 17 and 18 restored by collateral evidence, and point for cor. of secs. 4, 5, 8 and 9 which is re-established by collateral evidence in latitudinal posi-</p>		$\frac{1}{4}$		S17		S16 PFNM		1882			1938	
	$\frac{1}{4}$												
S17		S16 PFNM											
	1882												
	1938												

Resurvey; Part of Subdivision Lines of T. 18 N., R. 24 E.

22

Chains

tion and by single proportion between original corners easterly and westerly as hereinafter described.
Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, for cor. of secs. 8, 9, 16 and 17, with brass cap marked

T18N	R24E	
S8	S9	
S17	S16	PFNM
1882		
1938		

raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.

The original cor. of secs. 9, 10, 15 and 16, hereinbefore described, bears S. $88^{\circ}32'W.$, 80.77 chs. dist.

The cor. of secs. 7, 8, 17 and 18, reestablished by collateral evidence as hereinafter described, bears S. $88^{\circ}02'W.$, 80.80 chs. dist.

Land, gently rolling.

Soil, sandy and gumbo, 3rd and 4th rates.

Timber, none.

Undergrowth, native weeds, grasses and cacti.

Reestablishment of cor. of secs. 7, 8, 17 and 18.

No trace of original cor. of secs. 7, 8, 17 and 18 can be found, but reestablish the point by collateral evidence consisting of old fence cors.

At such point, set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 7, 8, 17 and 18, with brass cap marked

T18N	R24E
S7	S8
S18	S17
1882	
1938	

from which

A cottonwood, 20 ins. in diam., bears N. $80^{\circ}E.$, 235 lks. dist., marked T18N R24E S8 BT.

A cottonwood, 18 ins. in diam., bears S. $86^{\circ}E.$, 205 lks. dist., marked T18N R24E S17 BT.

A cottonwood, 18 ins. in diam., bears S. $42^{\circ}W.$, 30 lks. dist., marked T18N R24E S18 BT.

A cottonwood, 12 ins. in diam., bears N. $87\frac{1}{2}^{\circ}W.$, 150 lks. dist., marked T18N R24E S7 BT.

Fence cor. bears N. $55^{\circ}E.$, 64 lks. dist. from which fences extend N. and E.

Fence cor. bears N. $55^{\circ}W.$, 64 lks. dist., from which fences extend N. and W.

Land extends North.

U.S.G.S.B.M. (Elev. 5297.3) bears N. $2^{\circ}15'W.$, 47.96 chs.

Santa Fe R.R. coal dock at Adamana, bears N. $6^{\circ}E.$

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

1882 1898

23

Chains	
	From cor. of secs. 8, 9, 16 and 17.
	N. $0^{\circ}45'E.$, on true line, bet. secs. 8 and 9.
	Over gently rolling land, thru scattering undergrowth. Desc. slightly over NW. slope to
3.00	Left edge of sandy bed of Rio Puerco River, bears NE. and SW. Thence across nearly level river bed.
9.60	Main channel of Rio Puerco River (dry), course SW. Continue across river bed.
14.40	Right edge of river bed, bears NE. and SW. Leave river bed. Enter gently rolling sandy land and very scattering timber, bears E. and W. Ascend gradually over SE. slope.
28.00	Leave very scattering timber, bears E. and W.
39.91	(Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\frac{1}{4}$ S8 S9 PFTM 1882 1938
	raise a mound of pieces of concrete, 3 ft. base, 2 ft. high, W. of cor.
53.10	Windmill bears W. about 4 chs. dist.
54.10	Fence cor. bears W. 171 lks. dist., from which fences extend W. and S.
69.00	Graded road, bears N. $80^{\circ}E.$ and S. $80^{\circ}W.$ Extends southwesterly to Adamana, about $\frac{3}{4}$ mile distant.
72.24	Santa Fe R.R. right-of-way fence, parallel to railroad tracks. Thence across railroad right-of-way.
73.14	Telephone line, parallel to railroad tracks.
74.00	Center of double tracks of Santa Fe R.R., bearing N. $71\frac{1}{2}^{\circ}E.$ and S. $71\frac{1}{2}^{\circ}W.$
74.71	Telephone line, parallel to railroad tracks.
75.19	Western Union telegraph line, parallel to railroad tracks.
75.47	Santa Fe R.R. right-of-way fence, parallel to railroad tracks. Leave railroad right-of-way.
76.21	Fence, parallel to railroad.
78.44	Fence, bears N. $5^{\circ}W.$ and S. $5^{\circ}E.$
79.82	The point for reestablishment of the cor. of secs. 4, 5, 8 and 9 determined by single proportion between original corners 2 miles easterly and $1\frac{1}{2}$ miles westerly and by reference to center of Santa Fe R.R. right-of-way as collateral evidence of the original position of the corner northerly from the railroad. Set an iron post, 3 ft. long, 2 ins. in diam., 26 ins. in the ground, with a horseshoe and a piece of petrified wood deposited at base, for cor. of secs. 4, 5, 8 and 9,

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

24

Chains

with brass cap marked

T18N	R24E	
S5	S4	PTNM
S8	S9	

1882
1938

raise a mound of stone, 3 ft. base, 1½ ft. high, W. of cor.

Center of N. end of water trough, bears S. 7°03'E.,
301 lks. dist.Center of N. side of pond, about 90 lks. diam., bears
S. 12½°W., 320 lks. dist.

Windmill, bears S. 17½°W., 428 lks. dist.

NE. cor. of Jenkins' house, bears S. 44°05'W., 304
lks. dist.NE. cor. of small house, bears S. 58½°W., 359 lks.
dist.

SE. cor. of corral, bears S. 57¼°W., 221 lks. dist.

NE. cor. of same corral, bears N. 75°40'W., 245 lks.
dist.NW. cor. of same corral, bears N. 85½°W., 335 lks.
dist.The original ¼ sec. cor. of secs. 6 and 7, herein-
after described, bears S. 89°30'W., 119.65 chs.
dist.

Land, gently rolling and nearly level.

Soil, sandy, 3rd rate.

Timber, cottonwood where noted; none elsewhere.

Undergrowth, native weeds, grasses and cacti.

From true point for cor. of secs. 3, 4, 9 and 10

N. 89°20'W., on true line, bet. secs. 4 and 9.

Over nearly level land, thru scattering undergrowth and
very scattering timber, in dry bed of Dead River at its
mouth where it joins the Rio Puerco River.3.00 Main channel of Dead River, (dry) course SE. from N.
Continue across nearly level sandy river bed.6.00 Right bank of Dead River, 5 ft. high, bears N. and S.
Leave river bed, and continue over nearly level land.
Enter replanted cottonwood trees (CCC work).

20.40 Fence bears NE. and SW.

30.00 Foot of highway embankment bears N. 10°W. and S. 10°E.
Ascend.32.80 Highway, bears N. 10°W. and S. 10°E. (oiled surface).
Extends northerly to U.S. Highway No. 66 and southerly
to headquarters of superintendent of Petrified Forest.
This point on highway is at S. end of a viaduct over
Santa Fe R.R. tracks, and is also a junction point with

Resurvey: Part of Subdivision Lines of T. 18 N., R. 24 E.

BOOK 4199

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Chains	a graded road from S. 89°W. which extends southwesterly to Adamana, about 1½ miles distant.
39.85	<p>(Proportional dist.) Set an iron post, 3 ft. long, 1 in. in diam., 20 ins. in the ground to bedrock, with a stone marked with a cross (x) deposited at base, and in a mound of stone to top, for ¼ sec. cor., with brass cap marked,</p> $\frac{1}{4} \frac{S 4}{S 9}$ <p style="text-align: center;">1882 1938</p>
	Continue over gently rolling land. Asc. gradually over SE. slope.
57.05	Santa Fe R.R. right-of-way fence, parallel to railroad tracks.
60.90	Telephone line, parallel to R.R. tracks.
63.55	Center of double tracks of Santa Fe R.R., bears N. 70°E. and S. 70°W.
65.70	Western Union telegraph line; parallel to R.R. tracks.
67.55	Telephone line; parallel to R.R. tracks.
68.45	Santa Fe R.R. right-of-way fence, parallel to R.R. tracks. Leave railroad right-of-way.
70.85	Old road, parallel to railroad.
79.70	<p>The cor. of secs. 4, 5, 8 and 9.</p> <p>Land, nearly level and gently rolling. Soil, sandy, 3rd rate. Timber, replanted cottonwood trees in E. ½; none in W. ½. Undergrowth, arrowweed and other native weeds, grasses and cacti.</p>
Reconstruction of ¼ sec. cor. of secs. 6 and 7.	
<p>The original ¼ sec. cor. of secs. 6 and 7 is a sandstone, 2x4x8 ins. above ground, firmly set, faintly marked ¼ on N. face, and witnessed by slight traces of pits E. and W.</p> <p>Reconstruct this cor. monument as follows: remove the original cor. stone, and in same place, set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for ¼ sec. cor. of secs. 6 and 7, with brass cap marked</p> $\frac{1}{4} \frac{S 6}{S 7}$ <p style="text-align: center;">1882 1938</p> <p>dig pits 24x24x12 ins., one each E. and W. of post, 3 ft. dist.</p>	
<p>From cor. of secs. 4, 5, 32 and 33 on N. bdy. of the Tp. hereinbefore described,</p> <p>S. 0°44'E., on true line, bet. secs. 4 and 5.</p>	

Chains

Over gently rolling land, sloping slightly to the W.,
thru scattering undergrowth.

1.17

Fence cor. on line, from which fences extend N. $\frac{3}{4}^{\circ}$ E.,
S. $\frac{3}{4}^{\circ}$ W. and E.

39.18

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

$$\begin{array}{c} \frac{1}{4} \\ S5 \mid S4 \text{ PFNM} \\ 1882 \\ 1938 \end{array}$$

dig pits 24x24x12 ins., one each N. and S. of post, 3
ft. dist.

Checking station, bears S. $36\frac{1}{4}^{\circ}$ E.

Olsen's store, bears S. $70^{\circ}13'$ E.

Bluff at end of mesa, bears S. $19^{\circ}23'$ W., about 5
miles dist.

Ascend slightly over NW. slope.

41.30

Top of ascent bears NE. and SW.; descend gradually over
SE. slope.

78.30

The cor. of secs. 4, 5, 8 and 9.

Land, gently rolling.

Soil, sandy, 3rd rate.

Timber, none.

Undergrowth, native weeds, grasses and cacti.

Survey: Quarter Section Lines of Sections 4 and 10.

4199

27

Chains	Section 4.
	From $\frac{1}{4}$ sec. cor. of secs. 4 and 5 East, on random latitudinal $\frac{1}{4}$ sec. line of sec. 4.
81.00	Intersect N. and S. line 24 lks. S. of the true point for $\frac{1}{4}$ sec. cor. of secs. 3 and 4 (Witness cor. 5.50 chs. N. 1°00'E., hereinbefore described). From true point for $\frac{1}{4}$ sec. cor., S. 89°50'W., on true latitudinal $\frac{1}{4}$ sec. line of sec. 4. Over nearly level land, thru scattering undergrowth, in dry bed of Dead River, course SW.
2.45	Right bank of said river, 6 ft. high, bears NE. and SW. Leave river bed and enter gently rolling land. Asc. gradually over E. slope.
3.65	Fence, bears NE. and SW.
6.70	Windmill, bears S. about 100 lks. dist.
6.90	Center of pond, bears S. about 175 lks. dist.
8.55	Road, bears NE. and SW.
8.75	House, bears N. about 50 lks. dist.
10.00	Center of circular corral, 75 lks. diam., bears S. about 100 lks. dist.
32.90	Low ridge, bears N. and S.; desc. gradually over W. slope.
39.40	Highway, (oiled surface) bears N. and S. Extends northerly to U.S. Highway No. 66 and southerly to headquarters of superintendent of Petrified Forest National Monument.
40.50	(Midpoint) Set temp. center $\frac{1}{4}$ sec. cor. of sec. 4.
47.30	Wash, 15 lks. wide, 2 ft. deep, course SW.; ascend gradually over SE. slope.
49.25	Old road, bears N. and S.
61.75	Fence cor. bears S. about 4 chs. dist., from which fences extend E. and S.
79.85	Top of ascent, bears NE. and SW.; desc. slightly over NW, slope to
81.00	The $\frac{1}{4}$ sec. cor. of secs. 4 and 5. Land, nearly level and gently rolling. Soil, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.
	From $\frac{1}{4}$ sec. cor. of secs. 4 and 9 N. 0°08'E., on random meridional $\frac{1}{4}$ sec. line of sec. 4.
39.81	Intersect temp. center $\frac{1}{4}$ sec. cor. set at midpoint on the latitudinal $\frac{1}{4}$ sec. line, as hereinbefore described. Continue line and measurement.
79.65	Intersect the $\frac{1}{4}$ sec. cor. of secs. 4 and 33, on N. bdy. of the Tp., hereinbefore described.

Survey: Quarter Section Lines of Sections 4 and 10.

28

Chains	
	S. $0^{\circ}08'W.$, on true meridional $\frac{1}{4}$ sec. line of sec. 4. Over gently rolling sandy plains, thru scattering undergrowth.
2.06	Fence, bears E. and W.
13.00	Highway, bears N. $7\frac{1}{2}^{\circ}W.$ and S. $7\frac{1}{2}^{\circ}E.$, (oiled surface). Extends northerly to U.S. Highway No. 66, and southerly to headquarters of superintendent of Petrified Forest National Monument.
33.10	Wash, 10 lks. wide, course SW. Thence over W. slope.
39.84	Intersect latitudinal $\frac{1}{4}$ sec. line at the temp. center $\frac{1}{4}$ sec. cor. set at midpoint thereon. Replace this temp. cor. with a permanent corner monument as follows: Set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for center $\frac{1}{4}$ sec. cor. of section 4, with brass cap marked C $\frac{1}{4}$ + S4. .1938 raise a mound of stone, 2 ft. base, 1 ft. high, W. of cor.
42.10	Fence, bears E. and W. Fence cor. bears E. about 80 lks. dist. from which fences extend W. and S.
55.00	A point 1 ch. W. from highway bearing N. and S., and 2 chs. W. from Olsen's store.
62.00	Fence, bears E. and W.
70.60	Santa Fé R.R. right-of-way fence, parallel to railroad tracks. Thence across railroad right-of-way.
71.02	Power line, parallel to railroad tracks.
71.50	Telegraph line, parallel to railroad tracks.
72.07	Center of double tracks of Santa Fe R.R., bearing N. $70^{\circ}E.$ and S. $70^{\circ}W.$ Highway viaduct bears E. $1\frac{1}{2}$ chs. dist.
72.90	Telephone line parallel to railroad tracks.
73.85	Santa Fe R.R. right-of-way fence, parallel to railroad tracks. Leave railroad right-of-way. Desc. gradually over SE. slope.
79.65	The $\frac{1}{4}$ sec. cor. of secs. 4 and 9. Land, gently rolling. Soil, sandy, 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.
<u>Section 10.</u>	
From the $\frac{1}{4}$ sec. cor. of secs. 9 and 10,	
East, on random latitudinal $\frac{1}{4}$ sec. line of sec. 10.	
79.92	Intersect N. and S. line 14 lks. N. of the $\frac{1}{4}$ sec. cor. of secs. 10 and 11. Thence

Survey: Quarter Section Lines of Sections 4 and 10.

29

Chains	
	N. 89°54'W., on true latitudinal $\frac{1}{4}$ sec. line of sec. 10 Over nearly level sandy land, thru scattering undergrowth.
39.96	(Midpoint) Set temp. center $\frac{1}{4}$ sec. cor. of sec. 10.
41.46	Left bank of wash, 4 ft. high, bears NE. and SW. Thence across wash, course SW.
46.76	Right bank of same wash, 4 ft. high, bears NE. and SW. Leave wash and enter gently rolling land. Desc. gradually over SW. slope.
66.81	Right bank of same wash, 4 ft. high, bears NW. and SE. Thence across wash, course NW.
69.31	Left bank of same wash, 4 ft. high, bears NW. and SE. Leave wash and enter nearly level land.
79.92	The $\frac{1}{4}$ sec. cor. of secs. 9 and 10. Land, nearly level and gently rolling. Soil, sandy 3rd rate. Timber, none. Undergrowth, native weeds, grasses and cacti.
80.48	From the $\frac{1}{4}$ sec. cor. of secs. 3 and 10, South, on random meridional $\frac{1}{4}$ sec. line of sec. 10 Intersect E. and W. line 8 lks. W. of the $\frac{1}{4}$ sec. cor. of secs. 10 and 15. Thence N. 0°03'W., on true meridional $\frac{1}{4}$ sec. line of sec. 10. Over nearly level sandy land, thru scattering undergrowth.
11.75	Wash, 30 lks. wide, 4 ft. deep, course W.
40.25	Intersect latitudinal $\frac{1}{4}$ sec. line at the temp. center $\frac{1}{4}$ sec. cor. set at midpoint thereon. Replace this temp. cor. with a permanent cor. monument as follows: set an iron post, 3 ft. long, 1 in. in diam., 28 ins. in the ground, for center $\frac{1}{4}$ sec. cor. of sec. 10, with brass cap marked
	C $\frac{1}{4}$ + S10
	PFNM
	1938
	raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.
	This cor. is an angle point in the boundary of Petrified Forest National Monument, said boundary extending westerly and southerly identical with the $\frac{1}{4}$ sec. lines of sec. 10, the southwest quarter of said sec. being within said Monument.
	Continue line and measurement.
41.35	Left bank of wash, 4 ft. high, bears NE. and SW. Thence across wash, course SW.

Survey: Quarter Section Lines of Sections 4 and 10.

30

Chains

47.40 Right bank of same wash, 4 ft. high, bears NE. and SW.
Leave wash and enter gently rolling land.

47.75 Fence cor. bears W. about 250 lks. dist., from which
fences extend W. and N.

63.25 Fence, bears NE. and SW.

80.48 The $\frac{1}{4}$ sec. cor. of secs. 3 and 10.

Land, nearly level and gently rolling.

Soil, sandy, 3rd rate.

Timber, none.

Undergrowth, native weeds, grasses and cacti.

FINAL TEST OF INSTRUMENT.

August 30, 1938; at station 20 chs. NE. from the cor. of secs. 11, 12, 13 and 14, T. 20 N., R. 26 E., G. & S.R. B. & M., Arizona, in latitude $35^{\circ}08'N.$, and longitude $109^{\circ}32\frac{1}{2}'W.$, examine the adjustments of Buff transit No. 18000 which was used throughout the resurveys and surveys of this group, and find no errors. Then, to make a final test of the solar apparatus by comparing its indications with a true meridian established at this station by Polaris observation at the beginning of the work on May 8, 1938, as described on page 1 of this book, proceed as follows:

At 9h.00m., a.m., app.t., set off $35^{\circ}08'N.$ on the latitude arc; $9^{\circ}6\frac{1}{2}'N.$ on the declination arc; and determine a meridian with the solar, which agrees with the true meridian.

At app. noon, with the latitude arc unchanged, observe the sun on the meridian, and obtain a reading of $9^{\circ}2\frac{1}{2}'N.$ on the declination arc; which agrees with the computed declination of the sun.

At 3h.00m., p.m., app.t., with the latitude arc unchanged, set off $9^{\circ}00'N.$ on the declination arc, and determine a meridian with the solar, which agrees with the true meridian.

As all of the solar observations, taken during the usual hours of solar work come within 1' of the true meridian, conclude that the adjustments of the instrument are satisfactory on this date, and from these tests and those made as described in the other books of this group it is evident that this instrument has been in continuous proper adjustment throughout the entire period it was used on the resurveys and surveys embraced in this group.

GENERAL DESCRIPTION.

This township, located in the drainage basin of the Little Colorado River, in the southern part of the northeast quarter of the State of Arizona, at an elevation of about 5400 ft. above sea level, has a nearly level and gently rolling surface. The soil is mostly sandy 3rd rate, with scattered areas in which the soil is gumbo and rocky, 4th rate. There is no timber, except very scattering cottonwood along the Rio Puerco River. The undergrowth, which occurs in a scattering growth over the entire township, consists of a variety of native weeds, grasses and cacti. There are no springs, or

General Description - Continued.

1930

Chains

permanently flowing streams of water. The drainage system consists of washes tributary to the Rio Puerco River in the north half of the township, and a dry creek, unnamed, course NW. thru the SW. quarter. The Rio Puerco River is the principal watercourse, having a general southwesterly course thru the north half of the Tp. The Dead River, a normally dry watercourse, which heads in the Navajo Indian Reservation, in T. 21 N., R. 25 E., having a southerly course, is a tributary of the Rio Puerco River, entering same in the NE. quarter of section 9.

The Atchison, Topeka and Santa Fe Railroad, double tracked, bearing northeasterly and southwesterly, crosses sections 2, 3, 4, 7, 8 and 9. The railroad station and post office of Adamana, Arizona, is located on said railroad, in section 8. An improved highway, with oiled surface, extends northerly and southerly thru the central part of the township, forming a connection between U.S. Highway No. 260 on the south and U.S. Highway No. 66 on the north, and giving access to the greater part of the Petrified Forest National Monument. A graded road extends westerly from this highway to Adamana, and from Adamana a road extends northerly to Rice service station on U.S. Highway No. 66. Secondary roads parallel the railroad, and cross several other portions of the township. At the time of survey a Civilian Conservation Corp camp was located in SE $\frac{1}{4}$ of sec. 9 and SW $\frac{1}{4}$ of sec. 10, the enrollees being engaged in making various improvements in the Monument.

The Petrified Forest National Monument embraces secs. 4, 9, SW $\frac{1}{4}$ of section 10, and the east four ranges of the south four tiers of secs. of this township. The group of petrified remains of trees known as the "Blue Forest" is in section 23. Other natural curiosities within the portion of the Monument situated in this township are The Pictographs, Newspaper Rock, The Tepees, and The Haystacks.

There are no indications of valuable mineral deposits in the township.

Improvements, in addition to the railroad tracks and paralleling fences, telephone and telegraph lines, are: house, corral, windmill, store, highway viaduct over railroad, fences, and railroad bridge over Dead River, in section 4; depot, coal dock and other buildings at Adamana and 2 houses, corral, 2 windmills and fences in section 8; checking station, highway bridge over Rio Puerco River, CCC bunkhouses, water trough and fences in sec. 9; bunkhouse and fences in sec. 10, fences in several other sections, and a telephone line across the central part of the township, approximately parallel to the railroad.

BOOK 4199

CERTIFICATE OF UNITED STATES SURVEYOR

I, ~~Benjamin J. Kinsey, Surveyor and Cadastral Eng'r.~~ HEREBY CERTIFY upon honor that, in pursuance of special instructions bearing date of the 8th day of March, 1938, received from the district cadastral engineer for Arizona, with assignment instructions dated April 13, 1938, I have ~~resurveyed parts of the East and North~~ Boundaries and part of the subdivision Lines and surveyed the quarter section lines of Sections 4 and 10

Township 18 North, Range 24 East

of the Gila and Salt River Meridian, in the State of Arizona, which are represented in the foregoing field notes as having been executed by me and under my direction; and that said ~~resurvey and~~ survey has been made in strict conformity with said instructions, the Manual of Instructions for the Survey of the Public Lands of the United States, and in the specific manner described in the foregoing field notes.

*T. 10S, R. 31E, Arizona.
March 20-1939.*

Benjamin J. Kinsey
Cadastral Engineer

CERTIFICATE OF APPROVAL

OFFICE OF THE SUPERVISOR OF SURVEYS,

Denver, Colorado, March 25, 1939

The foregoing field notes of the ~~resurvey of parts of the East and North Boundaries and part of the Subdivision Lines and of the survey of quarter section lines of sections 4 and 10 of Township 18 North, Range 24 East~~ of the Gila and Salt River Meridian, in the state of Arizona executed by Benjamin J. Kinsey, Surveyor and Cadastral Engineer, under special instructions dated March 8, 1938 for Group 222, Arizona, and assignment instructions dated April 13, 1938, having been critically examined, and the necessary corrections made prior to their certification by the engineer, the said field notes, and the ~~resurvey and~~ survey therein described, are hereby approved.

Donald Johnson
Supervisor of Surveys.

CERTIFICATE OF TRANSCRIPT

I ~~CERTIFY~~ that the foregoing transcript of the field notes of the above-described surveys in _____, is a true copy of the original field notes on file in the public survey office.

Supervisor of Surveys.