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ORIGINAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE

Book A

FIELD NOTES

BOOK 4241

4241

of the

Resurvey of a portion of the subdivisional lines

of

Township 19 North., Range 24 East

Of the Gila and Salt River Meridian,

In the State of Arizona.

EXECUTED BY

Ty White, Assistant Cadastral Engineer

General Land Office

4241

Under special instructions dated April 4, 1941, which provided for the surveys included under Group No. 237, bearing the approval of the Commissioner of the General Land Office under date of May 8, 1941 and assignment instructions dated October 1, 1941.

Survey commenced October 12, 1941

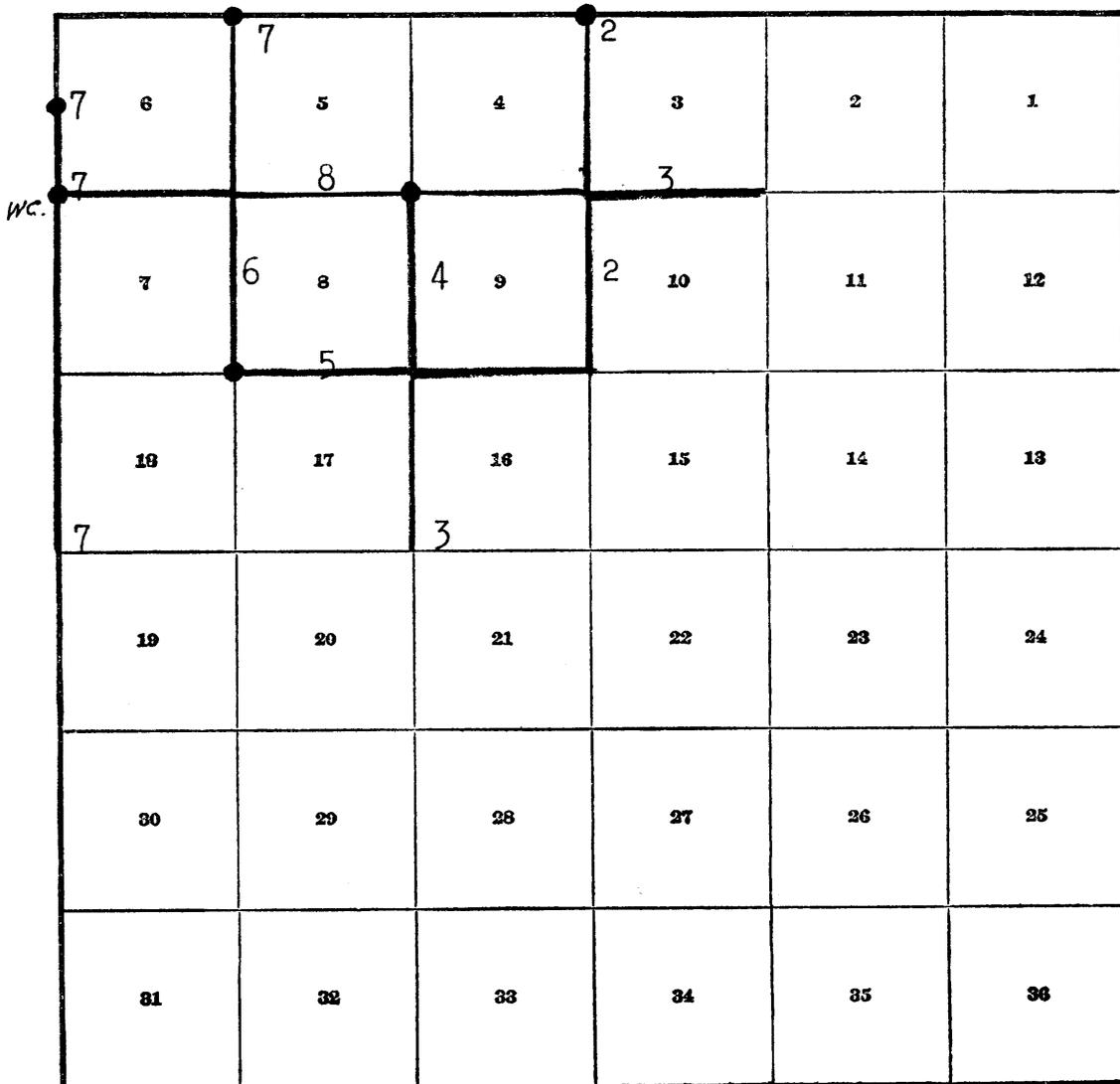
Survey completed October 22, 1941

BOOK 4241

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INDEX DIAGRAM.

Township 19 North, Range 24 East



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● Original cors. reconstructed under this group.

— Lines resurveyed under this group.

— Lines retraced under this group.

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

The resurveys hereinafter described were executed with a light mountain solar transit, made by Buff and Buff, serial No. 16724, constructed in accordance with the standard specifications of the General Land Office. The horizontal circle has a diameter of $4\frac{1}{2}$ ins., with two double opposite verniers reading to single minutes; the vertical circle has a diameter of 4 ins., with one double vernier reading to single minutes. The instrument is equipped with the improved Smith solar attachment; radius of latitude arc 3 ins., and of the declination arc $3\frac{1}{2}$ ins., each with verniers reading to single minutes. The instrument was in good condition, and having been placed in satisfactory adjustment prior to the beginning of the survey, and tested and found free from appreciable error, was approved by the district cadastral engineer on October 1, 1941. I examine all the instrumental adjustments before making the field tests hereinafter recorded.

The direction of the survey lines was determined by the solar transit method. The measurements were made with a Lufkin steel tape, 5 chains in length, graduated every link for the first 100 links and the balance at intervals of 10 links. The tape was tested by comparison with a Lufkin standard and found correct. The measurements were made on the slope, and the vertical angle of each interval was ascertained by a clinometer in good adjustment; the horizontal equivalents are entered in the field note record.

Petrified Forest National Monument (North Part)
From U.S.G.S. Sheet, the geographic position of the cor. of secs. 13, 18, 19 and 24 on the west boundary of T. 19 N., R. 24 E., G. & S. R. M. is: latitude $35^{\circ} 02' N.$, and longitude $109^{\circ} 51' W.$

October 12, 1941: at the above corner, at 9h 31m 48s a.m. l.m.t., or 9h 51m 12s by my watch which reads correct 105th meridian time as determined by radio time signals, I make an hour angle observation on Polaris, west of the meridian, making four observations, two each with the telescope in direct and reversed positions and read the horizontal deflection angles from a well defined point on the sky line about 10 chs. dist. in the direction N-W to Polaris. In order to verify the latitude of this station, I also read the vertical angles to Polaris.

Mean watch time of observation, a.m.	9h 51m 12s
Watch fast of l.m.t.	19m 24s
Mean horizontal angle, left to Polaris	$0^{\circ} 55' 45''$
Azimuth of Polaris	$0^{\circ} 49' 48''$
Reduced bearing to reference point	N. $0^{\circ} 05' 57''$ E.
Mean vertical angle to Polaris	$34^{\circ} 17' 41''$
Reduced latitude	$35^{\circ} 02' 46''$

October 12, 1941; On the meridian above described, at 10:00 a.m. and 11:00 a.m. and from 1:00 to 4:00 p.m. ^{at 1/2 hour intervals} I make proper settings on the arcs of the solar attachment and ascertain that the resulting orientation of the instrument, when compared with the meridian established by Polaris observation, has a maximum error of less than $1' 30''$.

I repeat the tests of the arcs daily by noon observation and verify the meridional indications at frequent intervals throughout the survey.

Preliminary to the resurvey, the lines of the original survey are retraced and diligent search is made for all original corners. Identified corners of the original survey are restored in their original positions. All lost corners are reestablished at proportionate positions, based on the record of the original survey. The retracement data are thoroughly verified and only the true line notes are given herein.

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673b
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OK 4241

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

Chains

The lines described in the following field notes were originally surveyed by H. Meyrick, U. S. Deputy Surveyor in 1882.
The south and east boundaries of section 10, which form a part of the Petrified Forest National Monument boundary, were resurveyed by Benjamin J. Kinsey, Cadastral Engineer in 1938.
The following field notes describe the resurvey of the boundaries of section 8 and the west and north boundaries of section 10.
These sections are within the Petrified Forest National Monument.

The cor. of secs. 9, 10, 15 and 16, T. 19 N., R. 24 E. is an iron post, 2 ins. diam., 8 ins. above ground, firmly set, marked and witnessed as described in the official record.

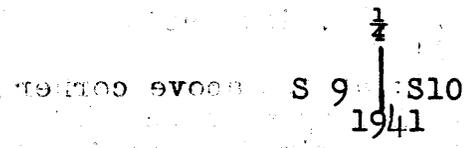
Thence

N. 0° 31' E., on true line bet. secs. 9 and 10.

Over rolling, grassy land.

39.93 Proportional distance.

Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground for 1/4 sec. cor. with brass cap mkd.



raise a mound of stone, 3 ft. base, 2 1/2 ft. high, W. of cor.

44.00 The peak of the roof of a ranch house, bears N. 59° 20' E.

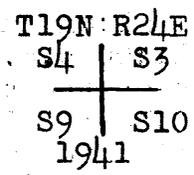
45.20 Telephone line, bears N. 49° E. and S. 49° W.
A 3 strand barbed wire fence, bears N. 49° E., and S. 49° W.

46.20 Center of U. S. Highway No. 66 bears N. 49° E. and S. 49° W.

Thence along the east side of an old abandoned road.

79.86 A point determined by the method of double proportion.

Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, for cor. of secs. 3, 4, 9 and 10, with brass cap mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

From this cor., the original cor. of secs. 3, 4, 33 and 34, Ts. 19 and 20 N., R. 24 E., bears N. 0° 34' E., 79.77 chs. dist.; a lava stone, 15 x 8 x 8 ins., no marks visible, set in a mound of stone, 2 ft. base, 1 ft. high. This cor. was pointed out to me by Mr. H. D. Lore as having been recognized by land owners in this locality for many years as the original corner.

In place of the original corner stone,

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

OK 424

Chains.

Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, with the original stone buried alongside, for the cor. of secs. 3, 4, 33 and 34, with brass cap mkd.

T20N R24E	
S33	S34

S 4	S 3
-----	-----

T19N

1882

1941

From the cor. of secs. 3, 4, 33 and 34,
The SE. cor. of the Painted Desert Inn bears N. 68° 15' E.,
5.00 chs. dist.

The NW. cor. of a gasoline service station bears N. 85° E.,
2.69 chs. dist.

NE. cor. of a dwelling house, bears S. 54° 30' E., 3.11
chs. dist.

Water storage reservoir, bears S. 43° 35' W., approx.
30.00 chs. dist.

Raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

Also from the cor. of secs. 3, 4, 9 and 10, the cor. of
secs. 4, 5, 8 and 9, bears N. 88° 01' W., 80.90 chs. dist.;
hereinafter described.

Land, rolling.
Soil, 2nd and 3rd rates.

Thence

S. 89° 27' E., on true line, bet. secs. 3 and 10.

Over rolling grassy land.

38.35 Center of U. S. Highway No. 66, bears N. 49° E. and S. 49° W.

39.55 A 3 strand barbed wire fence, bears N. 49° E. and S. 49° W.

40.10 An unimproved road, bears NW. and SE. to ranch house.

40.25 A telephone line, bears NE and SW.

40.34 Proportional distance

Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the
ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.

$\frac{1}{4}$	S 3
	S 10
	1941

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

U. S. Park Service checking station, bears N. 45° 20' E.

This cor. is located 15 lks. S. of the U. S. Highway right
of way fence.

50.65 An unimproved road, bears NE. and SW. to ranch house.

79.90 A 3 strand barbed wire fence, bears N. and S.

80.68 The cor. of secs. 2, 3, 10 and 11, which is an iron post,
2 ins. diam., firmly set in a mound of stone to top,

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

Chains.

2 ft. base, 1 ft. high, mkd. and witnessed as described in the official record, Land, rolling.
Soil, 2nd and 3rd rates

At a point determined by the method of double proportion
Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground for cor. of secs. 8, 9, 16 and 17, with brass cap mkd.

T19N R24E

S 8 | S 9

S17 | S16

1941

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

The cor. of secs. 16, 17, 20 and 21, which is an iron post, 2 ins. diam., 8 ins. above ground, firmly set, mkd. and witnessed as described in the official record, bears S. 2° 34' E., 80.10 chs. dist.

Also from the cor. of secs. 8, 9, 16 and 17, the cor. of secs. 9, 10, 15 and 16, hereinbefore described, bears S. 88° 06' E., 80.33 chs. dist.

Thence

N. 08° 10' E., on true line, bet. secs. 8 and 9.

Over rolling, grassy land.

30.80 Mr. H. D. Lore's cabin, bears E. 75° W., 75 chs. dist.

32.75 The rim of the Painted Desert, bears N. 30° E. and S. 70° W.; desc. 50 ft. over a broken NW. slope, into badlands.

38.80 Red clay spur, slopes NW.

40.01 Proportional distance

Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the ground to bedrock, with a stone mkd with a cross (X) deposited at the base, and in a mound of stone to top, for 1/4 sec. cor. with brass cap mkd.

1/4

S 8 | S 9

1941

Continue over broken and barren clay land, with scattered pieces of petrified wood lying on the surface of the ground.

78.00 Enter small flat, bears E. and W.

80.02 The original cor. of secs. 4, 5, 8 and 9, a lava stone, 8 x 8 x 12 ins. above ground, mkd. 5 grooves on S. face, with evidence of pits and mound visible.
In place of the original corner stone

Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground with the original cor. stone buried alongside,

Resurvey of sections 8 and 10,
T. 19. N., R. 24 E., G. & S. R. M.

Chains for cor. of secs. 4, 5, 8 and 9, with brass cap mkd. $\frac{1}{4}$ sec. cor.
 T19N R24E
 S 5 | S 4

 S 8 | S 9
 1882
 1941

from which

A sandstone ledge, bears N. 23° 23' E., 213 lks. dist., mkd. B X O S 4.

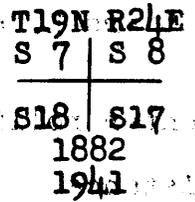
A lava boulder, 10 x 6 x 2 ft., bears S. 35° 30' W., 202 lks. dist., mkd. B X O S 8.

Raise a mound of stone, 3 ft. base, 2½ ft. high, W. of cor.

Land, S. ½ rolling; N. ½ broken and hilly.
 Soil, S. ½ 3rd rate; N. ½ 4th rate, barren clay.

The cor. of secs. 7, 8, 17 and 18 is a lava stone, 13 x 11 x 6 ins., set in a mound of stone, 2 ft. base, 1 ft. high, no marks are visible on the stone but the position of this monument agrees with the calls of the recorded field notes and it is undoubtedly the original cor.

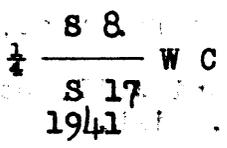
In place of this stone
 Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, with the original stone buried alongside for cor. of secs. 7, 8, 17 and 18, with brass cap mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

Thence
 S. 89° 41' E., on true line, bet. secs. 8 and 17.
 Over broken and hilly land.
 Ascend 80 ft. over a steep W. slope.

- 2.50 Spur, slopes N.; desc. 61 ft. over an E. slope.
- 5.45 Wash, 15 lks. wide, course N.; asc. 49 ft. over a W. slope.
- 8.25 Spur, slopes N.; desc. 25 ft. over an E. slope.
- 39.89 Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the ground to bedrock, with a stone mkd. with a cross (X) deposited at the base and in a mound of stone to top, for witness ¼ sec. cor., with brass cap mkd.



Resurvey of sections 8 and 10

T. 19. N. 3. R. 24 E., G. & S. R. M.

- Chains.**
- 40.09 Proportional distance for true point for cor., falls on the steep south bank of a bend in a wash, an unsuitable place for the cor.
 - 43.50 Wash, course N. 80° SW; asc. 64 ft. over a broken S. slope of a spur.
 - 57.46 Rim of the Painted Desert, bears NE. and SW., leave the badlands, enter rolling land.
 - 58.15 Old road, bears N. and S.
 - 80.18 The cor. of secs. 8, 9, 16 and 17; hereinbefore described.
- Land, broken and hilly. Soil, sandy and gravelly, 3rd and 4th rates.
-
- From the cor. of secs. 7, 8, 17 and 18, N. 3° 04' W., on true line, bet. secs. 7 and 8.
-
- Over hilly land.
- Ascend 20 ft. over a SW. slope.
 - 11.50 Spur, slopes NW; desc. 40 ft. over a NE. slope.
 - 2.70 A 3 strand barbed wire fence, bears irregularly E. and W.
 - 3.30 Left bank of a dry wash, bears E. and W. 5.00 chs. then NW.
 - 4.30 Right bank of dry wash, bears E. and W. 5.00 chs. then NW.; asc. 70 ft. over a S. slope.
 - 29.00 Top of a hill, bears E. and W.; desc. 70 ft. over a N. slope.
 - 33.00 Foot of hill, enter rolling land, bears E. and W.
 - 39.56 Proportional distance
Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap.
- 7 | 8
- Level 1941
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.
- 79.12 A point determined by the method of double proportion
Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground for cor. of secs. 5, 6, 7 and 8, with brass cap mkd.
- T19N R24E
- Level 1941
- raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
- The old Zuni well, now abandoned, bears N. 36° 17' W., 10.70 chs. dist.

Resurvey of sections 8 and 10,

T. 19 N., R. 24 E., G. & S. R. M.

Chains

The S. W. corner of new pump house, bears N. 24° 53' E., 48.45 chs. dist.

From this cor., the original cor. of secs. 5, 6, 31 and 32, bears N. 2° 25' E., 79.16 chs. dist.; a lava stone, 24 x 8 x 6 ins., mkd. 1 notch on one face, no other marks visible, set in a mound of stone, 2 ft. base, 1 ft. high,

In place of this stone

Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, with the original cor. stone buried alongside, for the cor. of secs. 5, 6, 31 and 32, with brass cap mkd.

T20N R24E	
S31	S32
S6	S5
T19N	
1882	
1941	

raise a mound

of stone, 3 ft. base, 2½ ft. high, W. of cor.

From the same corner, the true point for cor. of secs. 1, 6, 7 and 12 on the W. bdy. of the Tp., determined by the method of single proportion, bears N. 89° 30' W., 83.46 chs. dist. Said true point for cor. falls at the center of a wash, 2.00 ch. wide, course S. At a point 2.50 chs. S. 89° 30' E.,

Set an iron post, 3 ft. long, 2 ins. diam., 28 ins. in the ground, for witness cor. of secs. 1, 6, 7 and 12 with brass cap marked

T19N	
R23E	R24E
S1	S6
WC	S7
S12	S7
1941	

raise a mound

of stone, 3 ft. base, 2½ ft. high, W. of cor.

From said true point for cor. of secs. 1, 6, 7 and 12, the cor. of secs. 13, 18, 19 and 24, bears S. 0° 04' E., 159.50 chs. dist.; an iron post, 2 ins. diam., 8 ins. above ground, firmly set, marked and witnessed as described in the official record.

Also from the said true point for the cor. of secs. 1, 6, 7 and 12, the original ¼ sec. cor. of secs. 1 and 6, bears N. 0° 04' W., 39.87 chs. dist.; a sandstone, 34 x 8 x 6 ins., no marks visible, set in a mound of stone, 2 ft. base, 1 ft. high. The position of the corner agrees with the calls of the recorded field notes and is undoubtedly the original corner.

In place of the original corner stone

Set an iron post, 3 ft. long, 1 in. diam., 16 ins. in the ground to bedrock, with the orig. cor. stone buried along side, and in a mound of stone to top for ¼ sec, cor. with brass cap mkd.

¼	
S1	S6
1882	
1941	

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

Chains

Land, S. $\frac{1}{2}$ Hilly; N. $\frac{1}{2}$ rolling.
Soil, S. $\frac{1}{2}$ clay, barren, 4th rate; N. $\frac{1}{2}$ 2nd and 3rd rates.

From the cor. of secs. 4, 5, 8 and 9 hereinbefore described.

S. $89^{\circ} 34'$ W., on true line, bet. secs. 5 and 8.

Over rolling; grassy land.

0.40 Wash, 50 lks. wide, course N: 80° W.

6.40 Bend in same wash, course N. 80° W. from N. 80° E.

9.60 Tip of a spur, slopes N.

14.60 Tip of a spur, slopes N.

18.00 Enter same wash, from N. 85° E. to W.

29.00 Leave wash, course N: 85° W.

42.29 Proportional dist.

Set an iron post, 3 ft. long, 1 in. diam., 28 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap mkd.

$$\begin{array}{r} S\ 5 \\ \frac{1}{4} \\ \hline S\ 8 \\ 1941 \end{array}$$

raise a mound
of stone, 3 ft. base, 2 ft. high, N. of cor.

43.20 Recross wash, course S. 85° W.

45.50 Recross wash, course N. 60° W.

61.50 Foot of small gray hill, ascend 16 ft. over an E. slope.

63.50 Top of hill, descend 20 ft. over a W. slope.

65.10 Foot of hill, continue over rolling land.

84.58 The cor. of secs. 5, 6, 7 and 8, hereinbefore described.

Land, rolling.

Soil, 2nd and 3rd rates. sandy and clay. 02.

FINAL TEST OF SOLAR ATTACHMENT.

Oct. 22, 1941, on the meridian established at the cor. of secs. 13, 18, 19 and 24, hereinbefore described, I make proper settings on the arcs of the solar attachment and ascertain that the resulting orientation of the instrument, when compared with the meridian established by Polaris observation, has a maximum error of less than $1' 30''$; these observations were made in the a.m. only as I moved from this camp at 12:00 noon.

GENERAL DESCRIPTION.

Sections 8 and 10, T. 19 N., R. 24 E. G. & S. R. M. are within the Petrified Forest National Monument.

The land in section 10 is rolling, with a good growth

Resurvey of sections 8 and 10,
T. 19 N., R. 24 E., G. & S. R. M.

of native grass. There is no timber growth on the section and only a very sparse growth of low brush.

The soil is sandy loam and gravel, 2nd and 3rd rates.

A ranch house is located on the section. There is a 3 strand barbed wire fence along the east, south and a portion of the west boundary of the section, the fence along the south side of U. S. Highway No. 66 completing the enclosure.

Section 8 for the most part is hilly and broken, lying in the badlands of the "Painted Desert". A small part of the SE $\frac{1}{4}$ is rolling land with a good growth of native grass and soil of sandy loam and gravel, 2nd and 3rd rates. The remainder of the section is hilly and broken with the exception of the extreme NW. cor, which is in the rolling valley of the Carrizo wash.

The hilly portion consists of ridges and spurs sloping northwesterly from the rim to the level of the valley of the Carrizo wash. The ridges and spurs have a number of horizontal strata of red and white clay formations running through them. The small flats between these spurs and ridges have small forests of petrified trees lying on the surface.

The soil is clay formation, 4th rate.

The section has no growth of timber and only a sparse growth of low brush.

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BOOK 4241

CERTIFICATE OF SURVEYOR

General Land Office

I, Ty White, Assistant Cadastral Engineer, HEREBY CERTIFY upon honor that, in

pursuance of special instructions bearing date of the 4th day of April 1941,

received from the district cadastral engineer for Arizona, with assignment

instructions dated October 1, 1941, I have resurveyed a portion of the subdiv-
isional lines of Township 19 North, Range 24 East.

of the Gila & 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**

~~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.

Glendale,

Ty White
Assistant Cadastral Engineer
General Land Office

California.

Feb. 13, 1942.

CERTIFICATE OF APPROVAL

OFFICE OF SUPERVISOR OF SURVEYS,

Denver, Colorado, August 13, 1942.

The foregoing field notes of the resurvey of a portion of the subdivisional lines of Township 19 North, Range 24 East, of the Gila and Salt River Meridian, in the State of Arizona.

executed by Ty White, Assistant Cadastral Engineer, General Land Office,

under special instructions dated April 4, 1941, and assignment

instructions dated October 1, 1941, having been critically examined, and **resurvey**

the necessary corrections made prior to their certification by the engineer, the said field notes, and the ~~survey~~ therein described, are hereby approved.

Donald H. 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.~~