4—679
(September 1948)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Original

FIELD NOTES

of the

SURVEY

of

FINAL PORTION

of the

SUBDIVISION

of

TOWNSHIP 5 SOUTH RANGE 29 EAST,

Of the GILA and SALT RIVER *Meridian,*

In the State of ARIZONA

EXECUTED BY

DONALD E. HARDING

CARTOGRAPHER (CADASTRAL)

Under special instructions dated March 16, *19* 54, *which provided for the surveys included under Group No.* 292, *approved* March 18, 1954 *and assignment instructions dated* March 18, *19* 54

Survey commenced March 30, *19* 54

Survey completed April 5, *19* 54

U. S. GOVERNMENT PRINTING OFFICE 16—56770-1

1A

BOOK 449

INDEX DIAGRAM

Township 5 South, *Range* 29 East

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16—56770-1

Subdivision of a portion of T. 5 S., R. 29 E.

Chains

This survey was made pursuant to special instructions for Group 292, Arizona, to accommodate an application of the Phelps Dodge Corporation of Morenci, Arizona.

The surveyed portion of the subdivisional lines of T. 5 S., R. 29 E. were surveyed by William B. Kimmel, in 1914, and Ty White, in 1950. The North boundary of the township was surveyed by William B. Kimmel, in 1914, and resurveyed by Thorn and Kinsey, in 1921, as represented on the plat of T. 4 S., R. 29 E., approved June 7, 1923. This survey is a continuation of the subdivisional lines to complete the subdivision of the township.

The survey was executed with a Gurley solar transit, serial number 461263, constructed in accordance with the standard specifications of the Bureau of Land Management. The horizontal circle is provided with two double opposite verniers reading to single minutes, and the vertical circle with one double vernier reading to single minutes. The instrument is equipped with an improved telescopic solar attachment, with latitude and declination arcs reading to single minutes. This transit is in good condition, and was placed in proper adjustment and tested prior to beginning the survey.

The directions of the lines were determined by solar transit method, verified by a direct altitude observation of the sun.

Measurements were made with a Lufkin steel tape, 5 chains in length, graduated every 1/10 link for the first 10 links, every link for the following 90 links, and every 10 links for the remaining 400 links. The tape was tested by comparison with a standard steel tape, 1 chain long, kept for testing purposes, and was 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 summations of the horizontal equivalents are entered in the following field note record.

Altitude observation of the sun for azimuth

March 1, 1954 at a point 18.00 chains north of corner secs. 4, 5, 8, and 9, T. 5 S., R. 29 E., G. and S. R. Mer., in latitude 33° 01' 00" N., and longitude 109° 22' 59" W., apparent time 9:00 AM. I made a series of three altitude observations of the sun for azimuth, each with the telescope in direct and reversed positions reading the horizontal angle from the line of sight to a lath on line.

Mean observed vertical angle ..... 34° 27' 30"
Mean horizontal angle ..... 70° 40' 30"
True bearing lath on line ..... N. 0° 04' E.

Completing subdivision of T. 5 S., R. 29 E.

Beginning at the corner secs. 16, 17, 20, and 21, which is an iron post, 2 ins. diam., set, marked and witnessed as described in the official record.

N. 0° 01' E., bet. secs. 16 and 17.

Descend over a rough broken NE. slope, 202 ft.

15.00 Wash, 15 lks. wide, course SE., ascend 265 ft. over a broken SW. slope

40.00 Point for ¼ sec. cor. of secs. 16 and 17.

Set an iron post 28 ins. long, 2½ ins. diam., 22 ins. in the ground, with brass cap mkd.

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BOOK [illegible] 2

Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
	¼ S 17 | S 16 1954
	Raise a mound of stone, 3 ft. base, 2½ ft. high, W. of Cor.
	Ascend 64 ft. over a SW. slope.
44.70	Small wash drains W., ascend 148 ft. over a broken SW. slope.
56.70	Ridge bears ESE. and NW., descend along E. slope 22 ft.
60.00	Head of canyon, drains E., ascend 20 ft.
65.35	Short spur, slopes E., descend NE. slope 222 ft.
80.00	Point for corner of secs. 8, 9, 16, and 17.
	Set an iron post, 28 ins. long, 2½ ins. diam., 22 ins. in the ground, with a brass cap mkd.
	T 5 S R 29 E S 8 | S 9 S 17 | S 16 1954
	Raise a mound of stone, 3 ft. base, 2½ ft. high, W. of Cor. Land, mountainous, no timber Soil, sandy and rocky.
	From the corner secs. 9, 10, 15, and 16, which is an iron post, 2 ins. in diam., set, marked and witnessed as described in the official record.
	N. 89° 58' W., bet. secs. 9 and 16.
	Over rolling mountainous land, no timber, scattered grease wood and cacti, ascend E. slope 52 ft.
13.60	Top ridge NW. and SE., ascend along S. side of ridge, 149 ft.
32.50	Spur SE., descend W. slope 158 ft.
40.00	Point for ¼ sec. cor. of secs. 9 and 16.
	Set an iron post, 28 ins. long, 2½ ins. diam., 12 ins. in the ground in a mound of stone to the cap, with the brass cap mkd. ¼ S 9 S 16 1954
42.00	Head small canyon, drains S., ascend E. slope 85 ft.
47.00	Spur SE., descend W. slope 204 ft.
60.00	Draw, drains SE., ascend E. slope 126 ft.
65.30	Spur, slopes SSW., descend 103 ft.
76.20	Draw, drains ESE., ascend E. slope 19 ft.

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Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
80.00	The cor. secs. 8, 9, 16 and 17.
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, scattered greasewood and cacti.
	N. 0° 01' E., bet. secs. 8 and 9.
	Over mountainous land, through scattered greasewood and cacti.
2.00	Draw drains ESE., ascend SW. slope 265 ft.
19.10	Ridge NW. and SE. descend NE. slope 91 ft.
28.60	Wash drains ESE., ascend SW. slope 147 ft.
40.00	Point for $\frac{1}{4}$ sec. cor. secs. 8 and 9.
	Set an iron post 28 ins. long, $2\frac{1}{2}$ ins. diam., 8 ins. in the ground in a mound of stone to the cap, with the brass cap mkd. $\frac{1}{4}$ S 8 | S 9 1954
	Ascend SW. slope 10 ft.
40.50	Spur SE. descend over E. slope 21 ft.
48.00	Head of draw ESE. ascend S. slope 40 ft.
53.00	Ridge E. and W. descend N. slope 127 ft.
61.70	Wash drains ENE. ascend S. slope 67 ft.
67.00	Spur E. descend N. slope 132 ft.
74.70	Draw drains E. ascend S. slope 113 ft.
80.00	Point for cor. secs., 4, 5, 8 and 9.
	Set an iron post 28 ins. long, $2\frac{1}{2}$ ins. diam., 22 ins. in the ground, with the brass cap mkd. T 5 S R 29 E S 5 | S 4 S 8 | S 9 1954
	raise a mound of stone, 3 ft. base, $2\frac{1}{2}$ ft. high, W. of Cor.
	Land, Mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.
	From the corner secs., 3, 4, 9 and 10, which is an iron post, 2 ins. in diam., set, marked and witnessed as described in the official record.
	N. 89° 55' W., bet. secs. 4 and 9.
	Over mountainous land, through scattered underbrush, descend over

Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
	S. slope, 218 ft.
20.90	Draw drains SE. ascend across NE. slope, 303 ft.
39.96	Point for $\frac{1}{4}$ sec. cor. of secs. 4 and 9.
	Set an iron post 28 ins. long, $2\frac{1}{2}$ ins. diam., 12 ins. in the ground, in a mound of stone to cap., with brass cap mkd.
	$\frac{1}{4}$ S4 / S9
	1954
	Ascend NE. slope, 18 ft.
42.50	Ridge, N. 70° W. and S. 70° E. descend SW. slope, 152 ft.
53.50	Draw, drains SSE. ascend SE. slope, 188 ft.
63.00	Slope changes to S. descend 19 ft.
79.92	The cor. secs. 4, 5, 8 and 9.
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.
	N. 0° 14' E., bet. secs. 4 and 5.
	Over mountainous land, through scattered brush, ascend 40 ft.
3.50	Ridge, E. and W. descend N. slope, 70 ft.
11.40	Wash, drains E. ascend S. slope 53 ft.
18.75	Ridge, E. and W. descend N. slope, 173 ft.
31.20	Wash, drains ENE. deseand 42 ft.
39.20	Wash in draw, drains E.
40.00	Point for the $\frac{1}{4}$ sec. cor. of secs. 4 and 5.
	Set an iron post 28 ins., long, $2\frac{1}{2}$ ins. diam., 20 ins. in the ground, with brass cap mkd.
	$\frac{1}{4}$ S 5 | S 4
	1954
	raise a mound of stone, $2\frac{1}{2}$ ft. base, 2 ft. high, W. of cor.
	Ascend rocky SW. slope, 169 ft.
58.80	Spur E. descend NE. slope 78 ft.
74.60	Wash, SSE. ascend along E. edge of wash, 27 ft.
80.10	Intersect N. bdy. of the Tp. at the cor. of secs. 4 and 5 only, which is an iron post set, mkd., and witnessed as described in the 1921 resurvey of the S. bdy. of T. 4 S., R. 29 E.
	The cor. of secs. 32 and 33, T. 4 S., R. 29 E. bears N. 89° 57' E. 34.73 chains. Monumented as described in the official record.

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Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.
	At the point for the ¼ sec. cor. of sec. 4, on the N. bdy. of the township and at mid-point bet. the NE. and NW. corners of sec. 4.
	Set an iron post 3 ft. long, 1 in. diam., 27 ins. in the ground, with brass cap mkd.
	¼ S 4 1954
	raise a mound of stone 3 ft. base, 2½ ft. high, S. of cor.
	Destroy all evidence of the monument for the ¼ sec. cor. of sec. 4, established in 1914, an iron post 1 in. diam., set, mkd., and witnessed as described in the official record, which bears, east 15 lks. The cor. of secs. 32 and 33, T. 4 S., R. 29 E., bears S. 89° 57' W. 5.09 chs. dist.
	N. 89° 57' W., bet. secs. 17 and 20.
	Over mountainous land, through scattered underbrush.
	Ascend over NNE. slope 136 ft.
12.80	Ridge, NW. and SE. descend 70 ft.
22.00	Draw, drains SE. ascend NE. slope 115 ft.
31.50	Ridge, N. and S. descend over rough SW. slope 163 ft.
39.84	Point for ¼ sec. cor. of secs. 17 and 20.
	Set an iron post 28 ins. long, 2½ ins. diam., 20 ins. in the ground with brass cap mkd.
	¼ S 17 S 20 1954
	raise a mound of stone 3 ft. base, 2½ ft. high, N. of cor.
	Over broken SW. slope descend 10 ft.
43.30	Wash, drains SE. ascend E. slope 101 ft.
48.70	Ridge, N. and S. descend W. slope 610 ft.
76.00	Gulch, drains S. ascend E. slope 57 ft.
79.68	The cor. secs. 17, 18, 19 and 20.
	Which is an iron post, set, mkd., and witnessed as described in the official record.
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.

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Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
	N. 89° 59' W., bet. secs. 8 and 17.
	Over mountainous land through scattered underbrush
	Ascend NE. slope 270 ft.
14.70	Ridge, NW. and SE. descend SW. slope 155 ft.
24.90	Canyon, drains SE. ascend NE. slope 128 ft.
30.10	Fence, NW. and SE.
31.50	Ridge, NW. and SE. descend over SW. slope 181 ft.
39.83	Point for ¼ sec. cor. of secs. 8 and 17.
	Set an iron post 28 ins. long, 2½ ins. diam., 20 ins. in the ground with brass cap mkd.
	¼ S 8 / S 17
	1954
	raise a mound of stone 3 ft. base, 2½ ft. high, W. of cor.
40.20	Wash, small, drains S. ascend over S. slope 31 ft.
45.00	Spur, short, S. descend over S. slope 159 ft.
53.10	Wash, drains S. ascend over SE. slope 139 ft.
64.20	Spur, S. descend W. slope 253 ft.
74.20	Wash, S. ascend 40 ft.
79.66	The cor. secs. 7, 8, 17 and 18, which is monumented with an iron post set, mkd., and witnessed as described in the official record.
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.
	S. 89° 55' W. bet. secs. 5 and 8.
	Over rolling mountainous land through scattered underbrush.
	Ascend over S. slope 110 ft.
27.50	Road, along top ridge, SW. and NE. descend W. slope 227 ft.
39.86	Point for ¼ sec. cor. of secs. 5 and 8.
	Set an iron post 28 ins. long, 2½ ins. diam., 8 ins. in the ground in a mound of stone to the cap., with brass cap mkd.
	¼ S 5 / S 8
	1954
44.00	Draw, drains N. ascend E. slope 151 ft.
53.00	Spur, N. descend over NW. slope 240 ft.

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Subdivision of a portion of T. 5 S., R. 29 E.

Chains	
70.60	Draw, drains N. ascend over N. slope 28 ft.
79.92	The cor. secs. 5, 6, 7 and 8, which is monumented with an iron post set, mkd., and witnessed as described in the official record.
	Land, mountainous, no timber. Soil, sandy and rocky. Undergrowth, greasewood and cacti.

General description

The land embraced in this survey is rolling and mountainous. the general drainage is south towards the San Fransisco River.
The soil is rocky and quite sandy with out croppings of conglomerate stone. There is practically no timber in the area. Vegetation consists of greasewood and cacti. Grass is very sparse.

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(Feb., 1950)

BOOK [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FIELD ASSISTANTS

NAMES	CAPACITY
Fred R. Chappell	Cartographic Aid
Abenicio Crespin	do.
Jack Hammett	do.
Paul O. Heath	do.
Fernando D. Chavez	do.
Adan Lovato	do.

16—53565-2

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BOOK

CERTIFICATE OF CADASTRAL ENGINEER

I, Donald E, Harding, HEREBY CERTIFY upon honor that, in pursuance of special instructions bearing date of the 16th day of March, 1954 I have surveyed the final portion of the subdivision of T. 5 S., R. 29 E.

of the G. and S. R. 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 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.

Albuquerque, New Mexico
April 15, 1954

Donald E. Harding
Cartographer (Cadastral)

CERTIFICATE OF APPROVAL

BUREAU OF LAND MANAGEMENT,
Washington, D. C., JUL 9 1954, *19*

The foregoing field notes of the survey of the final portion of the subdivision of T. 5 S., R 29 E.

executed by Donald E. Harding

having been critically examined and found correct, are hereby approved.

Donald B. Clement
~~Chief, Division of Cadastral Engineering~~
Acting Cadastral Engineering Officer

CERTIFICATE OF TRANSCRIPT

~~I CERTIFY that the foregoing transcript of the field notes of the above-described surveys in~~ T. 5 S., R. 29 E. ~~is a true copy of the original field notes.~~

~~*Chief, Division of Cadastral Engineering.*~~

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