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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
~~GENERAL LAND OFFICE~~  
BUREAU OF LAND MANAGEMENT

# FIELD NOTES

OF EXCHANGE SURVEY NO. 679,

IN SECTION 33,

TOWNSHIP 22 NORTH, RANGE 5 EAST,

Of the GILA AND SALT RIVER Meridian,

In the State of ARIZONA

EXECUTED BY

EVERETT H. KIMMELL, CADASTRAL ENGINEER,

Under special instructions dated OCTOBER 18, 1949, which provided  
EXCHANGE SURVEY  
for the surveys included under ~~Group~~ No. 679, bearing the approval of the  
DIRECTOR OF THE BUREAU OF LAND MANAGEMENT  
~~Commissioner of the General Land Office~~ under date of OCTOBER 31, 1949,  
and assignment instructions dated OCTOBER 27, 1949.

Survey commenced NOVEMBER 7, 1949.

Survey completed NOVEMBER 8, 1949.



FIELD NOTES

# INDEX DIAGRAM.

Township \_\_\_\_\_, Range \_\_\_\_\_

6	5	4	3	2	1
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19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



DIRECTIONS.—1. Carry out the area in acres to three decimals and all other calculations to two decimals only.  
 2. In balancing the latitudes and departures do not obliterate or change the original figures, but put the corrections above in red ink. Do not change the footing of the original figures, but put the corrected footing below in red ink.  
 3. See Chapter IX, Manual of 1930, for instructions relative to balancing the closing error, computation of areas, and use of total latitudes and departures.

TABLING AND CALCULATIONS OF *See Survey No. 679. See 33 T. 22 N. R. 5 E.*

U. S. GOVERNMENT PRINTING OFFICE 0-6772

No.	COURSE	DISTANCE	LATITUDES		DEPARTURES		DOUBLE MERIDIAN DISTANCE	NORTH AREAS	SOUTH AREAS	TOTALS	
			NORTH	SOUTH	EAST	WEST				LATITUDE	DEPARTURE
99994	S. 0-37 W.	4027		4026 <sup>4</sup>		438 <sup>6</sup>	15991 <sup>2</sup>		643869 <sup>2</sup>		
01076	N. 89-25 W.	2500	25 <sup>5</sup>		2500 <sup>4</sup>	438 <sup>6</sup>	13447 <sup>4</sup>	3429 <sup>4</sup>			
99995	N. 0-39 E.	1001	100 <sup>1</sup>			2500 <sup>4</sup>	10959 <sup>2</sup>	109699 <sup>2</sup>			
01134	N. 89-22 W.	894	109 <sup>1</sup>		11 <sup>4</sup>	2473 <sup>4</sup>	10076 <sup>5</sup>	1007 <sup>4</sup>			
99992	N. 0-43 E.	1547	154 <sup>6</sup>		19 <sup>5</sup>	893 <sup>4</sup>	9201 <sup>9</sup>	142353 <sup>4</sup>			
01251	S. 89-45 W.	3608		3629 <sup>2</sup>	15 <sup>2</sup>	3608 <sup>2</sup>	5613 <sup>2</sup>	858 <sup>2</sup>			
99999	S. 0-12 E.	2627		2629 <sup>2</sup>	09 <sup>1</sup>	1000 <sup>7</sup>	2013 <sup>9</sup>	52899 <sup>4</sup>			
00436	N. 65-35 W.	1099	454 <sup>2</sup>			1000 <sup>7</sup>	1022 <sup>3</sup>	4644 <sup>2</sup>			
99999	N. 0-10 W.	3640	3640 <sup>2</sup>		12 <sup>4</sup>	10 <sup>8</sup>	10 <sup>2</sup>	393 <sup>2</sup>			
41337	S. 89-49 E.	3990		3992 <sup>2</sup>	09 <sup>7</sup>	3989 <sup>7</sup>	3989 <sup>7</sup>	494 <sup>2</sup>			
91056	N. 89-58 E.	4028	02 <sup>7</sup>		01 <sup>2</sup>	12007 <sup>1</sup>	324 <sup>2</sup>				
00291			6679 <sup>2</sup>	6682 <sup>2</sup>	8058 <sup>2</sup>	8056 <sup>4</sup>		261851 <sup>4</sup>	698122 <sup>2</sup>		
99999				79 <sup>2</sup>	56 <sup>4</sup>				261851 <sup>4</sup>		
00226				02 <sup>2</sup>	01 <sup>2</sup>				2) 4362709		
00058									218.14		
1.		288									

+00' per inch.

+00' per inch.

2) 4362709  
 218.14

218.14







## Exchange Survey No. 679, Sec. 33, T. 22 N., R. 5 E.

## Chains

Section 33, Township 22 North, Range 5 East, of the Gila and Salt River Meridian, Arizona, is located in the Kaibab National Forest, and this Exchange Survey was initiated on the official request of the U. S. Forest Service to accommodate the exchange of lands.

The entire township was resurveyed by Horace M. Muscott and Claude F. Warner, Cadastral Engineers, in 1940 and 1941.

The north boundary, north half of the east boundary, and the greater portion of the north half of the west boundary of section 33, which form the north, east, and west boundaries of the exchange survey, were not retraced, however these boundaries are included in the following record to give a complete metes-and-bounds description of the tract.

The survey was executed with Gurley solar transit, Serial No. 49657, constructed in accordance with the instrumental specifications of the Bureau of Land Management. The horizontal circle has two double opposite verniers reading to single minutes and the vertical circle is equipped with one double vernier reading to single minutes.

The directions of all lines were determined by transit method, with azimuth based on altitude observations of the sun. Measurements were made with a Lallie steel tape, 5 chains in length, graduated every link for the first 100 links, and thereafter at intervals of 10 links. The tape was tested by comparison with a standard tape and found correct. Measurements were made on the slopes and the vertical angle of each interval ascertained by a clinometer in good adjustment; summations of the horizontal equivalents only are entered in the following field note record.

Nov. 7, 1949, at the  $\frac{1}{4}$  sec. cor. of secs. 32 and 33, T. 22 N., R. 5 E., in latitude  $35^{\circ} 14' 3/4''$  N., and longitude  $111^{\circ} 52' W.$ , at 10h 39m a.m., app. time, a series of three altitude observations of the sun were made for azimuth, reading the horizontal angle from a dead tree, about  $\frac{1}{2}$  mile dist., counter-clockwise to the sun.

Mean observed horizontal angle:  $33^{\circ} 29' 25''$

Mean observed vertical angle:  $30^{\circ} 21' 45''$

Computed bearing to dead tree: S.  $89^{\circ} 53' 25''$  E.

Azimuth was extended by transit lines from the above reference throughout the survey.

Beginning at the cor. of secs. 27, 28, 33, and 34, described in the field notes of the 1941 resurvey, and which is now designated as Angle Point 1 of Exchange Survey No. 679.

S.  $0^{\circ} 37' W.$ , on E. bdy. of Exchange Survey No. 679, and between secs. 33 and 34, in accordance with the 1941 resurvey record.

40.27 The  $\frac{1}{4}$  sec. cor. of secs. 33 and 34, an iron post, 1 in. diam., set, marked, and witnessed as described in the official record, and now designated as Angle Point 2 of Exchange Survey No. 679.

N.  $89^{\circ} 25' W.$ , along a blazed line, over gently rolling land, through medium heavy timber and scattered undergrowth.

25.00 Angle Point 3, marked by a tack in a wood stake.

At the corner point,

Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, with brass cap mkd.



## Exchange Survey No. 679, Sec. 33, T. 22 N., R. 5 E.

## Chains

EX
679
T22N AP 3
R5 E
S 33
1949

drive the old stake alongside the iron post.

N.  $0^{\circ} 39'$  E., along a blazed line.

10.01 Angle Point 4, marked by a 1 in. iron pipe, firmly driven in the ground, and surrounded by a mound of stone.

At the corner point,

Set an iron post, 3 ft. long, 1 in. diam., 24 ins. in the ground to solid rock, and in a mound of stone, 3 ft. base, to top, with brass cap mkd.

EX 679

T22N
R5 E AP 4
S 33

1949

drive the old iron pipe alongside the corner.

N.  $89^{\circ} 22'$  W., along a blazed line.

8.94 Angle Point 5, marked by a 1 in. iron pipe, firmly set in a bed of lava rock.

At the corner point,

Set an iron post, 3 ft. long, 1 in. diam., 20 ins. in the ground and lava rock, and in a mound of stone to top, with brass cap mkd.

EX

679

T22N
R5 E AP 5

S 33

1949

drive the old iron pipe alongside the corner.

N.  $0^{\circ} 43'$  E., along blazed line.

8.18 Center of U.S. Highway No. 66, bears S.  $80^{\circ} 53'$  E., and curves SW.

15.47 Angle Point 6, marked by a 1 in. iron pipe, firmly driven in the ground, and surrounded by a mound of stone.

At the corner point,

Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, with brass cap mkd.

EX 679

T22N
R5 E AP 6
S 33

1949

raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high, NE. of the corner



Exchange Survey No. 679, Sec. 33, T. 22 N., R. 5 E.

Chains

and drive the iron pipe alongside the iron post.

S. 89° 45' W., along blazed line.

36.08 Angle Point 7, marked by a 1 in. iron pipe, firmly driven in the ground and surrounded by a small mound of stone.

At the corner point,

Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, with brass cap mkd.

EX 679

AP 7	T22N
	R 5 E
	S 33

1949

drive the old iron pipe alongside the corner.

S. 0° 12' E., along blazed line.

12.37 Center of U.S. Highway No. 66, bears N. 76° 52' E. and S. 76° 52' W.

26.27 Point for Angle Point 8, on N. line of old abandoned railroad right-of-way, on blazed line to the north, and 10.00 chs. in departure E. of the 1/4 sec. cor. of secs. 32 and 33.

Set an iron post, 3 ft. long, 1 in. diam., 27 ins. in the ground, with brass cap mkd.

EX	
679	T22N
AP 8	R 5 E
	S 33

1949

raise a mound of stone, 2 ft. base, 1 1/2 ft. high, NW. of corner.

N. 65° 35' W., along N. line of old abandoned railroad right-of-way as defined by old line of fence posts.

10.99 Point for Angle Point 9, at the intersection of N. line of old railroad right-of-way and the line bet. secs. 32 and 33.

Set an iron post, 3 ft. long, 1 in. diam., 30 ins. in the ground, with brass cap mkd.

	EX
	679
	AP 9
S 32	S 33

T22NR5E

1949

raise a mound of stone, 2 ft. base, 1 1/2 ft. high, NE. of corner.

From this cor:

The 1/4 sec. cor. of secs. 32 and 33, monumented by an iron post, 1 in. diam., set, marked, and witnessed as described in the official record, bears S. 0° 10' E., 3.81 chs. dist.



## Exchange Survey No. 679, Sec. 33, T. 22 N., R. 5 E.

Chains	
	N. $0^{\circ} 10'$ W., along W. bdy. of Exchange Survey No. 679, and bet. secs. 32 and 33 in accordance with the 1941 resurvey record.
36.40	The cor. of secs. 28, 29, 32, and 33, described in the field notes of the 1941 resurvey, and now designated as Angle Point 10 of Exchange Survey No. 679.
	S. $89^{\circ} 49'$ E., on N. bdy. of Exchange Survey No. 679, and bet. secs. 28 and 33 in accordance with the 1941 resurvey record.
39.90	The $\frac{1}{4}$ sec. cor. of secs. 28 and 33, described in the field notes of the 1941 resurvey, and now designated as Angle Point 11 of Exchange Survey No. 679.
	N. $89^{\circ} 58'$ E., continuing on N. bdy. of Exchange Survey No. 679, and bet. secs. 28 and 33 in accordance with the 1941 resurvey record.
40.28	The cor. of secs. 27, 28, 33, and 34, Angle Point 1 of this tract, and point of beginning.
	Area of Exchange Survey No. 679: 218.14 acres.



4-680  
(August 1947)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FIELD ASSISTANTS

NAMES	CAPACITY
Clarence E. Bilbray	Engineering Aide
-----	
U. S. Forest Service Employees	
Harlow A. Yaeger	Chainman
Rogers Freeman	Axman
Clyde A. McDonald	Axman
Willis L. Phillips	Flagman
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CERTIFICATE OF CADASTRAL ENGINEER

I, Everett H. Kimmell, HEREBY CERTIFY upon honor that, in pursuance of special instructions bearing date of the 18th day of October, 1949, I have surveyed boundaries of Exchange Survey No. 679, in section 33, Township 22 North, Range 5 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 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, N. M.  
November 25, 1949.

Everett H. Kimmell  
Everett H. Kimmell  
Cadastral Engineer.

CERTIFICATE OF APPROVAL

BUREAU OF LAND MANAGEMENT,  
Washington, D. C., JAN 4 1950, 19

The foregoing field notes of the survey of boundaries of Exchange Survey No. 679, in section 33, Township 22 North, Range 5 East, of the Gila and Salt River Meridian, in the State of Arizona,

executed by Everett H. Kimmell, Cadastral Engineer, having been critically examined and found correct, are hereby approved.

Earl G. Harvington  
Chief, Branch of Engineering and Construction.  
Chief, Division of  
Cadastral Engineering

~~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.~~

~~\_\_\_\_\_  
Chief, Branch of Engineering and Construction.~~





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
Division of Engineering  
1009 W. Tijeras Ave.  
Albuquerque, New Mexico

E  
Cooperation  
Forest Service  
Exchange Survey  
No. 679 - Ariz.

October 27, 1949

ASSIGNMENT INSTRUCTIONS, EXCHANGE SURVEY 679, ARIZONA

Mr. Everett H. Kimmell, Cadastral Engineer, Albuquerque, N.M.  
Mr. Clarence E. Bilbray, Engineering Aide, Albuquerque, N.M.

Sirs:

You are hereby assigned to surveys to accommodate the Forest Service under Exchange Survey No. 679, Arizona, effective upon completion of your assignment under Exchange Survey No. 678, Arizona.

You will be guided by the Special Instructions issued for this survey, dated October 18, 1949.

Geo. H. Well  
Acting Regional Chief,  
Division of Engineering.

Approved Oct. 27 1949

  
Regional Administrator

Received 10-28-49  
Duplicate copy sent  
To Chopin 10-28-49



*Kimell*

Division of Engineering  
103 U.S. Court House  
Phoenix, Arizona

October 18, 1949

SPECIAL INSTRUCTIONS

EXCHANGE SURVEY NO. 679

Township No. 22 North, Range 5 East,  
Gila and Salt River Meridian.

These instructions are intended to provide for the survey of a tract of land situated in Sec. 33, T. 22 N., R. 5 E., G. & S.R. Mer., in order to form a proper basis for an exchange for other lands pursuant to the provisions of the Act of March 20, 1922 (42 Stat. 465), as amended by the Act of February 28, 1925 (43 Stat., 1090; 16 U.S.C., Secs. 485, 486).

This tract is offered by the Anderson-Dunham Subsistence Co. of Arizona.

In Decision dated Sept. 30, 1949, the tract is described as follows:

"Beginning at the northeast corner of section 33, being corner No. 1; thence South  $0^{\circ} 37'$  West 2657.82 feet along the east line of section 33 to corner No. 2, being the one-quarter corner common to Sections 33 and 34; thence West 1,650 feet to Corner No. 3; thence North 660 feet to corner No. 4; thence West 590 feet to corner No. 5; thence North 975 feet to corner No. 6; thence West 2,380 feet to corner No. 7; thence South 1,720 feet to corner No. 8; being a point 100 feet north of center line of the A.T. & S.F. Railway Company's right-of-way; thence North  $65^{\circ} 28'$  West, 100 feet distant from and parallel to the aforesaid railroad right-of-way 726.37 feet to a point on the section line common to Sections 32 and 33, being corner No. 9; thence North  $0^{\circ} 10'$  West 2,413.55 feet along said section line to the northwest corner of Section 33, being corner No. 10; thence North  $89^{\circ} 49'$  East 2,633.40 feet along the North line of Section 33 to the one-quarter corner common to Sections 28 and 33, being corner No. 11; thence South  $89^{\circ} 58'$  East 2,658.48 feet along the north line of Section 33 to the northeast corner of Section 33, the place of beginning, containing 220 acres, more or less, and being the same tract of land described in Warranty Deed between D.J. Thompson and Maude Thompson, Grantors, and Beulah Anderson and Sam B. Dunham, Grantees."



The above mentioned Deed, or copy thereof, should be examined by the surveyor. Also if the adjacent privately owned land within the section is described by separate deed, it should also be examined as to the common boundary.

It is quite probable that there will be some variance between the courses and distances as found upon the ground, across the interior of the section, and those given in the above description, or in the deed. If the angle points are now marked upon the ground, the existing monuments will, in general, hold over the courses and distances. If the traverse is not marked on the ground, extreme care will be required to see that the tract as surveyed conforms as nearly as possible to the calls of the deed of record.

Since the boundaries of Section 33 were resurveyed in 1941, as shown on plat approved Jan. 28, 1946, no reason is apparent for retracing any of these lines, except as may be required to show the location of the easements for highway and telephone line. The monument marking the 1/4 sec. cor. of Sections 33 and 34, could be additionally marked as Cor. No. 1 of the Exchange Survey, thence traverse westerly through the section, marking the corners with iron posts and numbering consecutively to intersection with the west boundary of the section.

#### General

In addition to these special instructions, the manual of surveying instructions, 1947, will be the proper guide for all technical procedure.

Upon completion of the field work, the field notes of the survey will be prepared in triplicate which along with a plat of the survey drawn to scale, will be mailed to the Division of Engineering at Phoenix for checking and approval.

Should conditions arise appearing to demand additional instructions or which apparently make these special instructions inapplicable as prepared, the chief of field party will be expected to submit a report of the situation with such recommendations as may be responsive to the authorization.

FRANK W. CHAPIN

Office Cadastral Engineer

Approved:



# **POOR QUALITY**

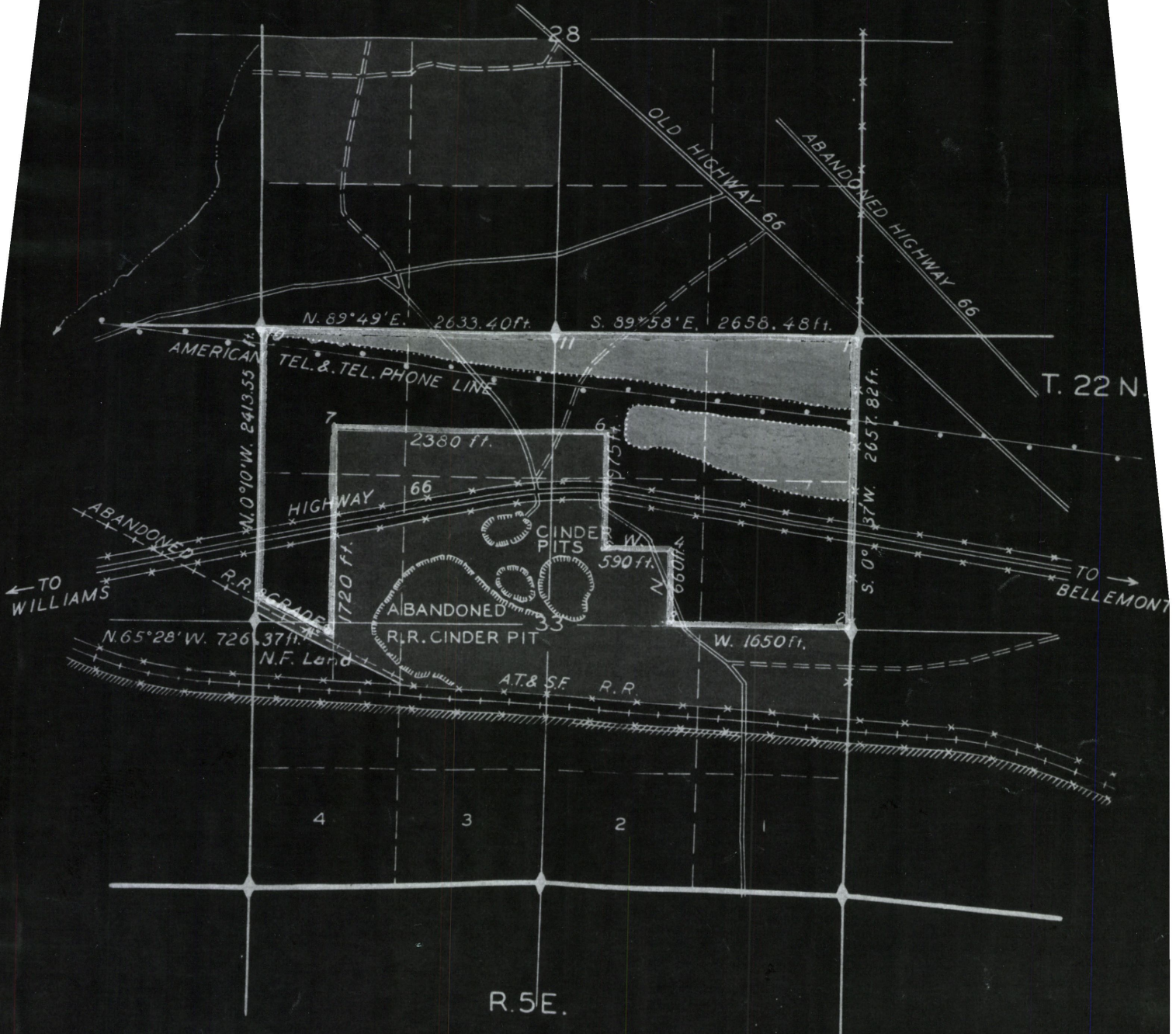
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


# ACQUISITION - KAIBAB (COCONINO) EXCHANGE

THE ANDERSON-DUNHAM SUBSISTENCE CO. of ARIZONA  
10/22/48

SCALE: 4" = 1 MILE



## R. 5E. LEGEND

-  OFFERED LAND (PONDAROSA PINE TYPE)
-  OTHER PRIVATE LAND
-  BOUNDARY OF NAVAJO ORDNANCE DEPOT
-  1946 TIMBER CUTTING





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Division of Engineering  
103 U.S. Court House  
Phoenix, Arizona

October 18, 1949

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*Frank W. Chapin*  
Office Cadastral Engineer

Approved:



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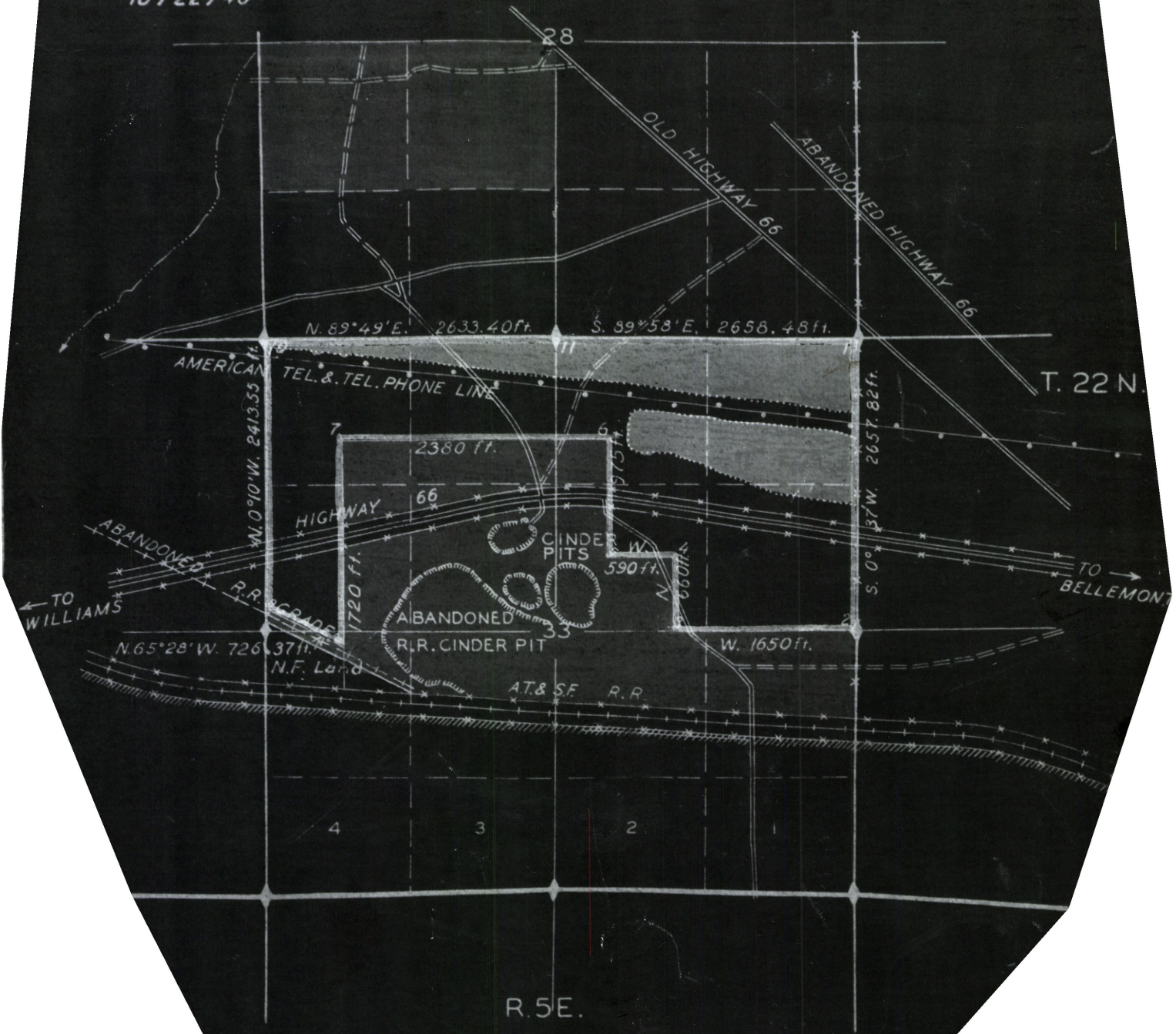
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# ACQUISITION - KAIBAB (COCONINO) EXCHANGE





THE ANDERSON-DUNHAM SUBSISTENCE CO. of ARIZONA  
10/22/48

SCALE: 4" = 1 MILE



R. 5 E.

## LEGEND

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