

ORIGINAL

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

FIELD NOTES
OF THE
DEPENDENT RESURVEY OF A PORTION OF THE NORTH BOUNDARY
OF
THE TOHONO O'ODHAM NATION RESERVATION
(SOUTH BOUNDARY)
TOWNSHIP 7 SOUTH, RANGE 4 EAST,
OF THE GILA AND SALT RIVER MERIDIAN,
IN THE STATE OF ARIZONA.

EXECUTED BY

Blas J. Urena, Cadastral Surveyor

Under Special Instructions dated December 8, 2016, approved December 8, 2016, which provided for the surveys included under Group No. 1165, and assignment instructions dated December 8, 2016.

Survey commenced December 15, 2016

Survey completed January 9, 2017

INDEX DIAGRAM

TOWNSHIP 7 SOUTH RANGE 4 EAST
GILA & SALT RIVER MERIDIAN, ARIZONA

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Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS

The following field notes describe the dependent resurvey of a portion of the North Boundary of The Tohono O'odham Nation Reservation (South Boundary) Township 7 South, Range 4 East, Gila and Salt River Meridian, Arizona.

The history of surveys pertaining to this survey is as follows:

W. H. Thorn, U. S. Surveyor, and W. K. Kierulff, U. S. Transitman, surveyed the South Boundary of Township 7 South, Range 4 East (Portion of the North Boundary of the Tohono O'odham Nation Reservation) in 1915 (book 2892).

The survey was executed in accordance with the specifications as set forth in the Manual of Surveying Instructions, 2009, and the Special Instructions dated December 8, 2016, for Group Number 1165, Arizona.

The true meridian direction and length of all lines were determined by static and real time kinematic Global Navigation Satellite System observations using Trimble Navigation R8-3 model receivers.

Preliminary to the resurvey, the lines of the prior surveys were retraced and search was made for all corners and other calls of record. Identified corners were remonumented in their original positions. Lost corners were reestablished and remonumented at proportionate positions based on the official record. The retracement data were thoroughly verified and only the true line field notes are given herein.

The survey was executed at the request of Bryan Bowker, Acting Regional Director, Bureau of Indian Affairs, Western Regional Office, in support of the Tohono O'odham Nation (TON) Reservation's boundary fencing project.

Geodetic control was derived from Global Navigation Satellite System (GNSS) static observations post processed by National Geodetic Survey, Online Positioning User Service (OPUS), utilizing Continuously Operating Reference Stations DL3063 AZTP TEMPE CORS ARP, DP1955 AZMP MARICOPA CORS ARP, DN4496 AZUP USERY MOUNTAIN PK CORS ARP. The NAD 83 (CORS2011) (EPOCH: 2010.0000), geographic position of the 1915 closing corner of sections 36, Township 7 South, Range 4 East, is as follows:

Latitude: 32°46'03.647" N. Longitude: 111°52'39.215" W.

The NAD 83 (CORS2011) (EPOCH: 2010.0000), geographic position of the corner of the Townships 7 and 8 South, Ranges 3 and 4 East, is as follows:

Latitude: 32°46'04.126" N. Longitude: 111°59'52.809" W.

The mean magnetic declination is 10 1/4° E.

Dependent Resurvey of the South Boundary,
Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS	
	<p>Restoring the survey executed by W. H. Thorn and W. K. Kierulff, in 1915</p> <hr/>
	<p>Beginning at the cor. of Tps. 7 and 8 S., Rs. 3 and 4 E., (Unsurveyed T. 8 S., R. 4 E., being within TON Reservation), monumented with an iron post, 3 ins. diam., firmly set, projecting 18 ins. above ground, in a mound of stone, 4 1/2 ft. base, to top of brass cap, mkd. T7S R3E R4E S36 S31 P I R 2016 1915.</p> <p>From this cor. a fence corner, barbed wire, 4 strand, bears N. 8°48' W., 0.8 lks., with fences extending S. 89°06' E., S. 89°12' W. and N. 0°10' W.</p> <p>S. 89°58' E., on the S. bdy. of sec. 31, N. bdy. of the TON Reservation.</p> <p>Over gently rolling to rolling and rocky terrain, through greasewood brush and scattering palo verde and ironwood, on/or alongside a barbed wire fence, 4 strand. Most of the fence posts in the barbed wire fence are located in rocky terrain and are set in supporting mounds of stone.</p>
40.04	<p>The 1/4 sec. cor. of sec. 31 (Unsurveyed T. 8 S., R. 4 E., being within TON Reservation), monumented with an iron post, 1 in. diam., loosely set and leaning to the E., in a scattered mound of stone, and alongside a barbed wire fence, with brass cap mkd. S31 1/4 P I R 1915.</p> <p>Add the marks T7S R4E 2016 to the brass cap.</p> <p>Reset the iron post, 6 ins. in the ground, in a supporting mound of stone, 4 ft. base, to top of brass cap.</p> <p>Deposit a magnet, in a white plastic case, alongside the iron post.</p> <p>From this cor. the same barbed wire fence, bears South, 0.3 lks., bears S. 89°57' E. and N. 89°57' W., on an easterly facing slope.</p> <p>From this cor. point, set a rebar, 24 ins. long, 5/8 in. diam., firmly set, flush with the surface of the ground, for a reference point, bears N. 52°25'30" E., 26.891 chs. dist.</p> <hr/> <p>S. 89°50' E., beginning new measurement.</p>
40.01	<p>The cor. of secs. 31 and 32 (Unsurveyed T. 8 S., R. 4 E., being within TON Reservation), monumented with an iron post, 3 ins. diam., firmly set, projecting 9 ins. above ground, with brass cap mkd. T7S R4E S31 S32 P I R 1915.</p> <p>Add the marks 2016 to the brass cap.</p>

Dependent Resurvey of the South Boundary,
Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS	
	<p>Enclosed the iron post in a collar of stone, 1 1/2 ft. base to top of brass cap.</p> <p>From this cor. the same barbed wire fence bears North, 0.4 lks., bears S. 89°56' E. and N. 89°56' W.</p> <hr/> <p>S. 89°56' E., on the S. bdy. of sec. 32, N. bdy. of the TON Reservation.</p> <p>Over nearly level terrain, through scattered greasewood brush, on/or alongside barbed wire fence, 4 strand.</p>
40.01	<p>The 1/4 sec. cor. of sec. 32 (Unsurveyed T. 8 S., R. 4 E., being within TON Reservation), monumented with an iron post, 34 ins. long, 1 in. diam., filled with concrete, projecting 16 in. above ground and bent, with brass cap mkd. S32 1/4 P I R 1915.</p> <p>At the corner point</p> <p>Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 25 ins. in the ground, with brass cap mkd.</p> <p style="text-align: center;">T 7 S R 4 E 1/4 S 32 <hr/>T O N 2016</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <p>Bury the iron post, horizontally, alongside the stainless steel post.</p> <p>From this cor. the same barbed wire fence , bears North, 0.4 lks., bears S. 89°58' E. and N. 89°58' W.</p> <hr/> <p>S. 89°58' E., beginning new measurement.</p>
39.008	<p>Point for the witness corner to the cor. of secs. 32 and 33 (Unsurveyed secs. 4 and 5, T. 8 S., R. 4 E., being within the TON Reservation).</p> <p>Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 25 ins. in the ground, in a collar of stone, 1 1/2 ft. base, to top of brass cap mkd.</p>

Dependent Resurvey of the South Boundary,
Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS	
	WC T 7 S R 4 E S 32 S 33 → T O N 2016
	Deposit a magnet, in a white plastic case, at the base of the stainless steel post.
	Set a steel fence post, W. of the witness cor.
	From this cor. the same barbed wire fence, bears South, 1.1 lks., bears N. 89°43' E. and S. 89°43' W.
39.78	From this point the terminus of the same barbed wire fence, bears South, 1.7 lks., fence extends N. 89°18' W.
40.008	The true point for the cor. of secs. 32 and 33 (Unsurveyed secs. 4 and 5, T. 8 S., R. 4 E., being within the TON Reservation), determined at proportionate dist., utilizing record from a recorded survey plat, Surveys Book 2, Page 434, on file at Pinal County Recorder's Office. Point falls beneath a cattle guard, on Stanfield Road, asphalt surface road, 24 ft. wide, bears S. 0°04' E. and N. 0°04' W., where it is impracticable to establish a permanent monument.
	<hr/> S. 89°58' E., on the S. bdy. of sec. 33, N. bdy. of the TON Reservation.
	Over nearly level terrain.
0.24	From this point the terminus of a barbed wire fence, bears South, 2.2 lks., 4 strand, fence extends S. 89°49' E.
0.701	From this point, a rebar, 5/8 in diam., firmly set, projecting 2 ins. above ground, bears South, 11.6 lks. dist., witnessed by a wood hub, 1 1/2 x 3/4 ins., projecting 7 ins. above ground, and 0.5 lks. North of the rebar, set by persons unknown.
0.758	A local monument, established by Michael Skroch, Arizona R.L.S. No. 27753, in 1999, according to Surveys Book 2, Page 434, on file at Pinal County Recorder's Office, monumented with a rebar, 1/2 in. diam., firmly set, flush with the surface of the ground, witnessed by an open ended galvanized pipe, 2 ins. diam., projecting 54 ins. above ground, and 0.2 lks. W. of the rebar.

**Dependent Resurvey of the South Boundary,
Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona**

CHAINS	
0.82	From this point a fence corner on the same barbed fence, bears South, 2.4 lks., with fences extending N. 89°37' E., S. 12°21' E. and N. 89°49' W.
0.906	From this point a rebar, 1/2 in. diam., firmly set, flush with the surface of the ground, with an aluminum cap, 1 1/2 ins. diam., mkd. BIA, bears South, 1.8 lks., established by persons unknown. This rebar is located alongside the same barbed wire, bears N. 89°37' E. and S. 89°37' W.
40.014	The 1/4 sec. cor. of sec. 33 (unsurveyed sec. 4, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 1 in. diam., firmly set, projecting 11 ins. above ground, with brass cap mkd. S33 1/4 P I R 1915. Add the marks T7S R4E 2016 to the brass cap. Witnessed by an open ended galvanized pipe, 2 ins. diam., firmly set, projecting 44 ins. above ground, and N. of cor., and a rebar, 1/2 in. diam., projecting 52 ins. above ground, and W. of cor. The cor. is located alongside the same barbed wire fence, bears S. 89°53' E. and N. 89°53' W. From this cor., a fence corner, barbed wire, 4 strand, bears N. 24°16' E., 55.7 lks. dist., with fences extending S. 89°42' E. and N. 0°12' W., _____
	S. 89°51' E., beginning new measurement.
20.01	A local monument, established by Michael Skroch, Arizona R.L.S. No. 27753, in 1999, according to Surveys Book 2, Page 434, on file at Pinal County Recorder's Office, monumented with a rebar, 1/2 in. diam., firmly set, 4 ins. below the surface of the ground, with a yellow plastic cap mkd. LANDMARK . LS 27753. With a steel fence post, N. of rebar. From this rebar the same barbed wire fence, 5 strand, bears North, 0.8 lks., bears S. 89°53' E. and N. 89°53' W.
40.02	The cor. of secs. 33 and 34 (unsurveyed secs. 3 and 4, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 3 ins. diam., firmly set, projecting 5 ins. above ground, with brass cap mkd. T7S R4E S33 S34 P I R 1915. Add the marks 2016 to the brass cap. From this cor. the same barbed wire fence, 4 strand, bears North, 0.3 lks., bears N. 89°59' E. and S. 89°59' W.

Dependent Resurvey of the South Boundary,
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CHAINS	
	<p>From this same cor., a fence corner, barbed wire, 4 strand, bears N. 43°55' W., 71.5 lks. dist., with fences extending S. 89°59' W. and N. 0°19' W.,</p> <hr/> <p>S. 89°54' E., on the S. bdy. of sec. 34, N. bdy. of the TON Reservation.</p> <p>Over nearly level terrain, through scattered greasewood brush, on/or alongside barbed wire fence, 4 strand.</p>
39.99	<p>The 1/4 sec. cor. of sec. 34 (Unsurveyed sec. 3, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 1 in. diam., firmly set, projecting 9 ins. above ground, with brass cap mkd. S34 1/4 P I R 1915.</p> <p>Add the marks T7S R4E 2016 to the brass cap.</p> <p>From this cor. the same barbed wire fence, bears North, 0.4 lks., bears S. 89°57' E. and N. 89°57' W.</p> <hr/> <p>S. 89°55' E., beginning new measurement.</p>
40.03	<p>The cor. of secs. 34 and 35 (unsurveyed secs. 2 and 3, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 3 ins. diam., firmly set, projecting 12 ins. above ground, with brass cap mkd. T7S R4E S34 S35 P I R 1915.</p> <p>Add the marks 2016 to the brass cap.</p> <p>The cor. is located alongside the same barbed wire fence, bears N. 89°56' E. and S. 89°56' W.</p> <p>from which</p> <p style="padding-left: 40px;">A brass cap, 3 1/2 ins. diam., flush, in concrete cylinder, 12 ins. diam., projecting 9 ins. above ground for a reference monument, bears S. 73°51' W., 3.6 ft. dist. mkd. U.S. COAST & GEODETIC SURVEY BENCH MARK ELEV. FEET ABOVE MEAN SEA LEVEL Q207 1951. National Geodetic Survey (NGS) Permanent Identifier (PID) CZ1138. From this reference monument the same barbed wire fence, bears North, 1.6 lks., bears N. 89°56' E. and S. 89°56' W.</p> <hr/> <p>S. 89°59' E., on the S. bdy. of sec. 35, N. bdy. of the TON Reservation.</p> <p>Over nearly level terrain, through scattered greasewood brush, on/or alongside barbed wire fence, 4 strand.</p>

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CHAINS	
39.98	<p>The 1/4 sec. cor. of sec. 35 (unsurveyed sec. 2, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 1 in. diam., firmly set, projecting 8 ins. above ground, with brass cap mkd. S35 1/4 P I R 1915.</p> <p>Add the marks T7S R4E 2016 to the brass cap.</p> <p>From this cor. the same barbed wire fence, bears North, 0.2 lks., bears S. 89°53' E. and N. 89°53' W.</p> <p>From this same cor., set a rebar, 24 ins. long, 5/8 in. diam., firmly set, flush with the surface of the ground, bears N. 78°01' W., 6.676 chs. dist.</p> <hr style="width: 20%; margin: 10px auto;"/> <p>S. 89°56' E., beginning new measurement.</p>
7.638	<p>A fence corner, on the same barbed wire fence, with fences extending S. 89°15' E., S. 89°54' W. and N. 47°34' W.</p>
40.02	<p>The cor. of secs. 35 and 36 (Unsurveyed secs. 1 and 2, T. 8 S., R. 4 E., being within the TON Reservation), monumented with and iron post, 3 ins. diam., firmly set, projecting 3 ins. above ground, with brass cap mkd. T7S R4E S35 S36 P I R 1915.</p> <p>Add the marks 2016 to the brass cap.</p> <p>The cor. is located 0.2 lk. S. from the same barbed wire fence, bears N. 89°57' E. and S. 89°57' W.</p> <hr style="width: 20%; margin: 10px auto;"/> <p>N. 89°59' E., on the S. bdy. of sec. 36, N. bdy. of the TON Reservation.</p> <p>Over nearly level terrain, through scattered greasewood brush, mesquite, on/or alongside barbed wire fence, 4 strand.</p>
40.00	<p>The 1/4 sec. cor. of sec. 36 (Unsurveyed sec. 1, T. 8 S., R. 4 E., being within the TON Reservation), monumented with an iron post, 1 in. diam., firmly set, projecting 4 ins. above ground, with brass cap mkd. S36 1/4 P I R 1915.</p> <p>Add the marks T7S R4E 2016 to the brass cap.</p> <p>From this cor. the same barbed wire fence, bears South, 0.2 lks., bears S. 89°54' E. and N. 89°54' W.</p> <hr style="width: 20%; margin: 10px auto;"/> <p>S. 89°54' E., beginning new measurement.</p>
38.226	<p>Point for the closing cor. of Tps. 8 S., Rs. 4 and 5 E., on the First Guide Meridian East.</p> <p>At the corner point</p>

Dependent Resurvey of the South Boundary,
Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS

Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 24 ins. in the ground, with brass cap mkd.

T 7 S R 4 E

S 36

S 1	S 6
R 4 E	R 5 E

T 8 S

CC

2017

Deposit a magnet, in a white plastic case, at the base of the stainless steel post.

Set a steel fence post, S. of cor.

From this cor. the same barbed wire fence bears North, 0.4 lks., bears S. 89°33' E. and N. 89°33' W.

From this cor. point, the 1/4 sec. cor. of secs. 1 and 6, Tps. 8 S., Rs. 4 and 5 E., bears S. 0°01' E., 39.09 chs. dist., monumented with an iron post, 1 in. diam., firmly set, projecting 10 ins. above ground, with brass cap mkd.

1/4	S 6
S 1	S 6

1915

Remark the brass cap to read

T 8 S
R 4 E R 5 E

1/4

S 1	S 6
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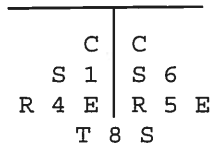
2016

1915

From this same cor. point, the 1915 closing cor. of T. 8 S., Rs. 4 and 5 E., on the First Guide Meridian East, bears N. 0°01' W., 1.5 lks. dist., monumented with an iron post, 3 ins. diam., firmly set, projecting 4 ins. above ground, with brass cap mkd.

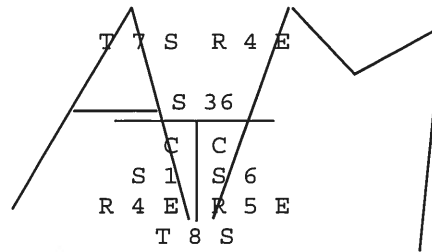
Dependent Resurvey of the South Boundary,
 Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS



1915

Remark the brass cap to read (amended)



2016
 1915

Set a steel fence post, N. of cor.

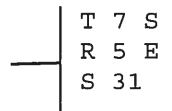
From this cor. the same barbed wire fence bears South, 1 lk., bears S. 89°33' E. and N. 89°33' W.

Continuing on the S. bdy. of sec. 36, (unsurveyed secs. 5 and 6, T. 8 S., R. 5 E. being inside the TON Reservation).

88.93 A fence corner, on the same barbed wire fence, with fences extending N. 31°37' E., N. 89°48' E. and N. 89°40' W.

120.885 Point for the closing cor. T. 7 S., R. 4 E., at intersection with the First Guide Meridian East. Not monumented.

From this cor. point, the SW cor. of T. 7 S., R. 5 E., bears S. 0°04' E., 26.36 chs. dist., monumented with an iron post, 3 ins. diam., firmly set, projecting 13 ins. above ground, with brass cap mkd.



1915

Add the mark 2016 to the brass cap.

From this same cor. point, the 1/4 sec. cor. of sec. 31 only, T. 7 S., R. 5 E., bears N. 0°04' W., 13.79 chs. dist., monumented with an iron post, 1 in. diam., firmly set, projecting 10 ins. above ground, with brass cap mkd.

Dependent Resurvey of the South Boundary,
 Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS	<div style="text-align: right; margin-right: 100px;"> 1/4 S 31 1915 </div> <p>Remark the brass cap to read</p> <div style="text-align: right; margin-right: 100px;"> T7S R5E 1/4 S 31 2016 1915 </div> <p>This cor. is located alongside a barbed wire fence, 4 strand, bears S. 0°15' E. and N. 0°15' W.</p> <p>120.893 The 1915 closing cor. T. 7 S., R. 4 E., monumented with an iron post, 3 ins. diam., firmly set, projecting 11 ins. above ground, with brass cap mkd.</p> <div style="text-align: center; margin: 20px 0;"> <table border="1" style="border-collapse: collapse; margin: auto;"> <tr><td style="padding: 2px 5px;">T 7 S</td></tr> <tr><td style="padding: 2px 5px;">C R 4 E</td></tr> <tr><td style="padding: 2px 5px;">C S 36</td></tr> </table> </div> <p style="text-align: center;">1915</p> <p>Add the marks 2016 to the brass cap.</p> <p>from which</p> <p style="margin-left: 40px;">A brass cap, 4 ins. diam., flush, in concrete cylinder, 12 ins. diam., flush with the surface of the ground for a reference monument, bears N. 77°52' E., 4.55 ft. dist. mkd. U. S. DEPARTMENT OF THE INTERIOR B.M. BUREAU OF RECLAMATION UNLAWFUL TO DISTURB 7 - 5 - 143 ELEV FT . ABOVE MEAN SEA LEVEL 1983, with a steel fence post, 3.8 lks. E. of reference monument.</p> <p>From this cor., a fence corner, in the same barbed wire fence, bears N. 18°31' E, 1 lk., with fences extending S. 27°13' E., S. 89°36' W. and N. 0°14' W.</p> <hr style="width: 60%; margin-left: auto; margin-right: auto;"/>	T 7 S	C R 4 E	C S 36
T 7 S				
C R 4 E				
C S 36				

Tp. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona

CHAINS

GENERAL DESCRIPTION

The resurveyed south boundary of T. 7 S., R. 4 E., is identical with a portion of the north boundary of the Tohono O'odham Nation Reservation, and is located approximately 12.5 miles S. 52° W., of Casa Grande, Arizona. The terrain varies from gently rolling to rolling to nearly level. The elevation ranges from 1390 to 1585 ft. above sea level.

Access to the area resurveyed is provided by Interstate Highway No. 8 and Stanfield Road.

The mean magnetic declination of 10 1/4° E. was derived from the United States Geological Survey computer program GEOMAG, utilizing the World Magnetic Model for Epoch 2015 for the dates of survey.

CERTIFICATE OF SURVEY

I, Blas J. Urena, Cadastral Surveyor, HEREBY CERTIFY upon honor, that in pursuance of special instructions bearing date of the 8th day of December, 2016, I have dependently resurveyed a portion of the north boundary of The Tohono O'odham Nation Reservation (south boundary) T. 7 S., R. 4 E., 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. Said survey has been made in strict conformity with said special instructions, the Manual of Surveying Instructions, (2009), and in specific manner described in the foregoing field notes.

10/11/2017

(Date)

Blas J. Urena

(Cadastral Surveyor)

CERTIFICATE OF APPROVAL

BUREAU OF LAND MANAGEMENT
Phoenix, Arizona

The foregoing field notes of the dependent resurvey of a portion of the north boundary of the Tohono O'odham Nation Reservation (south boundary) T. 7 S., R. 4 E., Gila and Salt River Meridian, in the State of Arizona, executed by Blas J. Urena, Cadastral Surveyor, having been critically examined and found correct, are hereby approved.

11/29/2017

(Date)

[Signature]

(Chief Cadastral Surveyor of Arizona)

~~CERTIFICATE OF TRANSCRIPT~~

~~I CERTIFY That the foregoing transcript of the field notes of the above described surveys in T. 7 S., R. 4 E., Gila and Salt River Meridian, Arizona, is a true copy of the original field notes.~~

~~(Date)~~

~~(Chief Cadastral Surveyor of Arizona)~~