

ORIGINAL

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

FIELD NOTES  
OF THE  
DEPENDENT RESURVEY OF  
A PORTION OF  
THE SOUTH BOUNDARY  
AND A  
METES-AND-BOUNDS SURVEY OF  
THE ADMINISTRATIVE BOUNDARY BETWEEN  
MARINE CORPS AIR STATION, YUMA  
AND LUKE AIR FORCE BASE,  
**TOWNSHIP 10 SOUTH, RANGE 13 WEST,**  
OF THE GILA AND SALT RIVER MERIDIAN,  
IN THE STATE OF ARIZONA.

**EXECUTED BY**

**Geoffrey A. Graham, Cadastral Surveyor**

Under Special Instructions dated November 2, 2006, approved November 2, 2006, which provided for the surveys included under Group No. 1004, and assignment instructions dated November 2, 2006.

**Survey commenced November 15, 2006**

**Survey completed November 18, 2006**

**INDEX DIAGRAM**

TOWNSHIP 10 SOUTH                      RANGE 13 WEST  
 GILA AND SALT RIVER MERIDIAN, ARIZONA

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**T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS

The following field notes describe the dependent resurvey of a portion of the South boundary and a metes-and-bounds survey of the administrative boundary between the Marine Corps Air Station, Yuma, and Luke Air Force Base, Township 10 South, Range 13 West, Gila and Salt River Meridian, Arizona.

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

In 1937, Horace M. Muscott, Thornton Fitzhugh and Carrol I. Parkman surveyed the south boundary, a portion of the east boundary, the west boundary and the subdivisional lines; and resurveyed a portion of the east boundary.

The survey was executed in accordance with the specifications as set forth in the Manual of Instructions for the Survey of the Public Lands of the United States, 1973, and the Special Instructions dated November 2, 2006, for Group No. 1004, Arizona.

The true meridian direction and length of all lines were determined by real time kinematic and fast static global positioning system observations using Trimble Navigation 5700 and 5800 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.

Geodetic control was derived from Global Positioning System (GPS) static observations post processed by National Geodetic Survey, Online Positioning User Service (OPUS), utilizing Continuously Operating Reference Stations (CORS) AZBK MCDOT BUCKEYE CORS ARP, AZMO MARICOPA CORS ARP and SRP1 SALT RIVER PROJEC CORS ARP. The NAD 83 (CORS96)(EPOCH:2002), geographic position of the corner of sections 32 and 33 only on the South boundary of the township, is as follows:

Latitude: 32°30'30.88" N.                      Longitude: 113°37'16.81" W.

The mean magnetic declination is 11 3/4° E.

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**Dependent Resurvey of a Portion of the South Boundary,  
T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS	
	<p style="text-align: center;">Restoring the survey executed by Horace M. Muscott, Thornton Fitzhugh and Carrol I. Parkman, in 1937</p> <hr/> <p>Beginning at the cor. of secs. 32 and 33 only, on the S. bdy. of the Tp., monumented with an iron post, 2 ins. diam., firmly set, projecting 8 ins. above the ground, with brass cap mkd. T10S R13W S32 S33 1937.</p> <p>Add the marks 2006 to the brass cap.</p> <p>N. 89°58' W., on the S. bdy. of sec. 32.</p> <p>6.14 Point for mile post 16+31.52, of the metes-and-bounds survey, hereinafter described.</p> <p>40.01 The 1/4 sec. cor. of sec. 32 only, monumented with an iron post, 1 in. diam., firmly set, projecting 8 ins. above the ground, with brass cap mkd. 1/4 S32 1937, with an accessory mound of stone, 2 ft. base, 1 ft. high, N. of the cor.</p> <p>Add the marks T10S R13W 2006 to the brass cap.</p>
	<p style="text-align: center;"><b>Metes-and-Bounds Survey of the Administrative Boundary between Marine Corps Air Station, Yuma and Luke Air Force Base, T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona</b></p> <hr/>
	<p>Note. _____ The administrative boundary between Marine Corps Air Station, Yuma and Luke Air Force Base on the Barry M. Goldwater Range is described as being along the eastern line of the Federal Aviation Administration (FAA), Special Use Airspace area, designated as R-2301W Ajo West, AZ. This line is controlled by a point determined at the intersection of the United States-Mexico border and longitude 113°30'33" W. (NAD 83) and a point inaccurately described as being along the Southern Pacific Railroad and U.S. Highway at latitude 32°44'15" N., longitude 113°41'08" W. (NAD 83). The geographical position of the latter point actually falls 15.85 chains south of the southerly right-of-way of the existing Southern Pacific Company Railroad.</p> <p>Therefore the administrative boundary between Marine Corps Air Station, Yuma and Luke Air Force Base on the Barry M. Goldwater Range is determined by extending a line from the point on the United States-Mexico border through a point determined at latitude 32°44'15" N., longitude 113°41'08" W. (NAD 83) to the intersection of the southerly right-of-way of the existing Southern Pacific Company Railroad.</p> <hr/>

**Metes-and-Bounds Survey of the Administrative Boundary between  
Marine Corps Air Station, Yuma and Luke Air Force Base,  
T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS	
	<p>From the point for mile post 10+18.07, on the administrative boundary, at intersection with the Second Standard Parallel South, (N. bdy. of the Tp.), falls at the top of an inaccessible rugged cliff, not monumented.</p> <p>From this point, the stan. cor. of secs. 31 and 32, T. 9 S., R. 13 W., monumented with an iron post, 2 ins. diam., firmly set, projecting 25 ins. above ground, in a supporting mound of stone, 5 ft. base, to top, with brass cap mkd. SC T9S R13W S31 S32 1936 2006, bears S. 89°52' E., 15.04 chs. dist.</p> <p>From this same point, the witness cor. to the stan. 1/4 sec. cor. of sec. 31, monumented with an iron post, 1 in. diam., firmly set, projecting 16 ins. above ground, in a supporting mound of stone, 2 1/2 ft. base, to top, with brass cap mkd. SC T9S R13W 1/4 S31 WC 1936 2006, with an arrow pointing towards the true point, bears N. 89°52' W., 19.98 chs. dist.</p> <p>S. 13°05' E., along mile 10 of the administrative bdy., over steep mountainous terrain.</p>
61.93	<p>Point for mile post 11, falls on steep rock face where it is impracticable to establish a permanent monument.</p> <hr/> <p>S. 13°05' E., along mile 11 of the administrative bdy., descending over steep mountainous terrain.</p>
0.21	<p>Point for mile post 11+00.21.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., on solid rock, in a supporting mound of stone, 4 ft. base, to top, with alum. cap mkd.</p> <div style="text-align: center;"> <p>T 10 S R 13 W</p> <p>MP 11+00.21 \</p> <p>2006</p> </div> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p> <p>Mile post is located on the left bank, 30 ft. above a steep drainage, draining S. 5° W., on split spur ridge bearing S. 5° W. and S. 40° W.</p>
80.00	<p>Point for mile post 12.</p>

**Metes-and-Bounds Survey of the Administrative Boundary between  
Marine Corps Air Station, Yuma and Luke Air Force Base,  
T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS	
	<p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., 22 ins. in the ground, in a collar of stone, with alum. cap mkd.</p> <div style="text-align: center;"> <p>T 10 S R 13 W</p> <p>MP 12 \</p> <p>2006</p> </div> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Raise an accessory mound of stone, 3 ft. base, 2 ft. high, N. of the mile post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p> <hr/>
80.00	<p>S. 13°05' E., along mile 12 of the administrative bdy., descending into valley floor.</p> <p>Point for mile post 13, falls in wash, 12 ft. deep, 50 ft. wide, drains S. 25° W., from N. 10° W., where it is impracticable to establish a permanent monument.</p> <hr/>
1.50	<p>S. 13°05' E., along mile 13 of the administrative bdy., descending into valley floor.</p> <p>Point for mile post 13+01.50.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., 24 ins. in the ground, with alum. cap mkd.</p> <div style="text-align: center;"> <p>T 10 S R 13 W</p> <p>MP 13+01.50 \</p> <p>2006</p> </div> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p>
80.00	<p>Point for mile post 14.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., 24 ins. in the ground, with alum. cap mkd.</p>

**Metes-and-Bounds Survey of the Administrative Boundary between  
Marine Corps Air Station, Yuma and Luke Air Force Base,  
T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS	
	<p align="center">T 10 S R 13 W MP 14 \\ 2006</p> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p> <hr/> <p>S. 13°05' E., along mile 14 of the administrative bdy., entering rolling sand dunes.</p>
80.00	<p>Point for mile post 15.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., 27 ins. in the ground, with alum. cap mkd.</p> <p align="center">T 10 S R 13 W MP 15 \\ 2006</p> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p> <hr/> <p>S. 13°05' E., along mile 15 of the administrative bdy., over rolling sand dunes.</p>
80.00	<p>Point for mile post 16.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., flush with the ground, with alum. cap mkd.</p> <p align="center">T 10 S R 13 W MP 16 \\ 2006</p> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p>

**Metes-and-Bounds Survey of the Administrative Boundary between  
Marine Corps Air Station, Yuma and Luke Air Force Base,  
T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona**

CHAINS	
31.52	<hr/> <p>S. 13°05' E., along mile 16 of the administrative bdy., over nearly level desert.</p> <p>Point for mile post 16+31.52, at intersection with the S. bdy. of the Tp.</p> <p>Set an alum. post, 30 ins. long, 2 1/2 ins. diam., 27 ins. in the ground, with alum. cap mkd.</p> <div style="text-align: center;"> <p>T 10 S R 13 W</p> <p>MP 16+31.52 S32</p> <p>T11S</p> <p>2006</p> </div> <p>Deposit a magnet in a white plastic case at the base of the alum. post.</p> <p>Set a steel sign post with an attached Bureau of Land Management standard sign S-201 nearby.</p> <p>From this mile post, the point determined at the intersection of the United States-Mexico Border and longitude 113°30'33" W. (NAD 83), bears S. 13°05' E., 2345.96 chs. dist.</p> <p>From this intersection point, International Boundary Monument No. 180, bears S. 69°46' E., 361.28 chs. dist., monumented with an iron obelisk, 6 1/2 ft. high, 1 ft. square base, bolted onto a concrete pad, 3 ft. square, mkd. 180.</p> <p>From this same intersection point, International Boundary Monument No. 181, bears N. 69°46' W., 21.98 chs. dist., monumented with an iron obelisk, 6 1/2 ft. high, 1 ft. square base, bolted onto a concrete pad, 3 ft. square, mkd. 181.</p> <hr/>



## T. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona

CHAINS

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**GENERAL DESCRIPTION**

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The purpose of this survey was to identify the boundary of that portion of the Barry M. Goldwater Military Reservation, managed by the Marine Corps Air Station, Yuma. This survey is located 20 miles southeast of the small community of Tacna AZ. Access to the area is reached by turning south off of Interstate 8 on an unidentified dirt road, leading to the Cabeza Prieta Wilderness and National Wildlife Refuge. The majority of the points for this survey are reached by cross country travel.

Elevations for the area range between 600 and 800 ft. above sea level. The higher elevations are along the northern portion of the administrative boundary descending across the foothills of the Mohawk Mountains, and the lower elevations are in the rolling sand dunes near the southern end of the project. The vegetation is typical of the lower Sonoran Desert, with creosote and scattered grasses on the open ground and ironwood and mesquite along the drainages.

The mean magnetic declination of  $11 \frac{3}{4}^{\circ}$  E. was derived from the National Geophysical Data Center's magnetic declination calculator, GEOMAG v6.0, utilizing the International Geomagnetic Reference Field model for years 2005 through 2010, for the dates of survey.

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## CERTIFICATE OF SURVEY

I, Geoffrey A. Graham, Cadastral Surveyor, HEREBY CERTIFY upon honor, that in pursuance of special instructions bearing date of the 2nd day of November, 2006, I have dependently resurveyed a portion of the south boundary and surveyed the metes-and-bounds of the administrative boundary between the Marine Corps Air Station Yuma, and Luke Air Force Base, T. 10 S., R. 13 W., 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 Instructions for the Survey of the Public Lands of the United States, 1973, and in specific manner described in the foregoing field notes.

8-16-07

(Date)

*Geoffrey A. Graham*  
 (Cadastral Surveyor)

## CERTIFICATE OF APPROVAL

BUREAU OF LAND MANAGEMENT  
 Phoenix, Arizona

The foregoing field notes of the dependent resurvey of a portion of the south boundary and survey of the metes-and-bounds of the administrative boundary between the Marine Corps Air Station Yuma, and Luke Air Force Base, T. 10 S., R. 13 W., Gila and Salt River Meridian, in the State of Arizona, executed by Geoffrey A. Graham, Cadastral Surveyor, having been critically examined and found correct, are hereby approved.

9/18/07

(Date)

*Stephen K. Hansen*  
 (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. 10 S., R. 13 W., Gila and Salt River Meridian, Arizona, is a true copy of the original field notes.

(Date)

(Chief Cadastral Surveyor of Arizona)