

Arizona State Office  
Preferred Procedures and Guidelines  
for Field Note Returns



2004-2005

## Arizona State Office Preferred Procedures and Guidelines - FY04-05

Before Lester Fischer retired, he was kind enough to help compile some information on ways we could improve the processes of note writing and note review. We have put together a list of his suggestions and added some other items. It is not possible to envision every possible scenario, but it is hoped that these guidelines will help the field surveyors and reviewers to put out a better and more consistent product.

### Rounding:

1. Whenever possible, try to keep the rounding of survey lines to an even link, especially when the possibility of further subdivision exists. Rounding to a half link is permissible if necessary for closure purposes, but here are some of the guidelines that the reviewers often employ:

On a half mile they will allow rounding up or down by .006 chains to obtain an even link.

On a mile they will allow rounding up or down by .01 chains to obtain an even link.

Typically, when faced with a rounding choice involving a ##.##5, the reviewer will round up or down to the even link.

2. For on line calls, (and apply to "Cor. is located" statement as makes sense):

Bearing Objects	1/2 link (.5)	&	1/4 degree
Fences	1 link	&	5 degrees, unless a trespass is suspected.
Highway rights-of-way, calculated center lines and intersections	1 link	&	1 minute
All other roads	5 links	&	5 degrees
Most other topo	10 links	&	5 degrees
Witness corners	1 link	&	1 minute, (but, if possible, set at an even 5 degree increment.)
Reference monuments	1/10 Foot	&	1 minute, (but, if possible, set at an even 5 degree increment.) Also, report in feet.

In some situations, the field surveyor may think that certain things need to be reported to the tenth of a link. For instance, the surveyor has made ties to bearing objects with a small locus, such as a rebar, or an "X" chiseled in a sidewalk. Another example might be when a surveyor is retracing a private record in an urban environment. Consult with your supervisor and/or the office staff when in doubt.

3. When reporting distances to bearing trees or bearing objects or from this corner or other similar situations, if the measurement is one chain or over, report it in chains. If the measurement is under one chain, report it in links. Please report in decimals when rounding to the 1/2 link. For instance, "A pine, 12 ins. diam., bears S. 60° W., 35.5 lks. dist.", or "A pine, 12 ins. diam., bears S. 60° W., 1.355 chs. dist." Bearings rounded to the 1/4 or 1/2 will still be reported as "S. 60 1/4° W." This procedure should keep the notes more consistent.
4. Special note on "Cor. is located" statement: The distance from the corner to the object is in links, but the width and depth are in feet. As an example: "Cor. is located 30 lks. N. of a dry wash, 100 ft. wide, 10 ft. deep, drains S." (Or in the case of a flowing stream, course S.)
- 5 Note on bearings: Rather than using the generic SSW, NNE, etc., of nomenclature, round bearings as appropriate, but report in degrees, such as N. 50° W. If shot with a hand compass, 5 degree rounding should be fine. If a road, fence line, wash, top or edge of something was actually shot in, use the shot bearing rounded to the nearest 5 degrees, unless there is a need for higher precision. Use common sense. If you need to report to a higher precision, make sure your field procedures reflect the precision you report to. If you are reporting a course, such as "North, bet. secs. 1 and 2," spell out north. If making topo calls, such as "Barbed wire fence, 4 strand, bears N. and S.," or "Wash, 10 ft. wide, 1 ft. deep, drains E.," use abbreviations.
6. The surveyor might consider reporting monuments within 1 lk. of line to be on line, unless conditions exist that warrant the need for higher precision, such as an urban environment, minor subdivisional lines, etc.
7. Report bearings to the minute and distances to the link except for situations that dictate otherwise.

#### **Procedure items:**

1. As per the "Manual" p. 187 & 188, all corners of a resurvey are completely described again in your field notes, unless a concurrent survey exists. A concurrent survey will have the same Group Number.
2. When describing existing corners found in the field on a resurvey, the section numbers of the corner are written in ascending numerical order, but the brass cap markings are reported as if one were reading a paragraph; i.e. from top to bottom, and from left to right. Example: "The cor. of secs. 9, 10, 15 and 16, monumented with an iron post, 2 ins. diam., firmly set, projecting 6 ins. above ground, with brass cap mkd. T26N R20E S9 S10 S16 S15 1910."
3. Generally, the phrase, "hereinbefore" is only used if the corner is previously described under a separate "heading" in the notes. Do not use the "hereinbefore" statement in the section subdivision portion of the notes.
4. Use the phrase, "At the corner point," not "At the cor. point"
5. Found an iron pipe, 1 in. diam.; not: Found an iron pipe, 1 ins. diam. Anything 1 inch diam. or below use "in." Any diam. larger than an inch is "ins."
6. Add the marks 2003 to the brass cap. Not, add the mks. (use the abbreviations that are on page 186 of the Manual; if they are not there, then generally do not use other abbreviations.) Also, note that for years ASO has used "to" the brass cap. Although using the term "on" the brass cap is more consistent with the Manual., it was felt that it was better to keep the current policy than to change it.
7. When beginning at a corner on a township boundary, the description should read: "From the cor. of secs. 1, 2, 35 and 36, on the S. bdy. of the Tp..."



8. The phrase, "Point accepted for....occupied with" is only used if something occupies the position and the monument is not of record. Some typical examples would be a proportioned position or a minor aliquot corner.
9. Bearings and distances with their linear identifier should be on the same line. Whenever they are separated, insert a hard space, i.e. 20 and lks. should be together, not on separate lines; the same as N. 20° E. should be on the same line. In Word, this is called a "non breaking space." The shortcut on the key board is "ctrl+shift+spacebar." Or it is found in the pull down menus: Insert, Symbol, click on the Special Characters tab, and choose non breaking space.
10. Use full sized fractions, (1/4 1/16 1/2) rather than ( $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{3}{8}$ ,  $\frac{5}{8}$ ) for everything.
11. Bearings are described as N. 0°01' E., not N. 00°01' E., or N. 0°1' E.
12. Corners of minimum control are written in the field notes as shown on Page 309 of the Manual. Example: "The point for the 1/4 sec. cor. of sec. 7 only, T. 41 S., R. 100 W., is at midpoint on the W. bdy. of sec. 7."
13. A control line statement needs to be used on all control lines where intervening corners were not recovered. This statement is found on page 307 of the Manual and in the macros. Example in the macros: "These control lines were fully retraced, and careful search was made for evidence of intervening cors., none of which was recovered."
14. Full legal names and titles are to be used on the Field Assistants page. A "Surveying Technician" should be described as such, not as a "Surveying Tech", or a "Survey Technician." "Survey Aid" is the correct term.
15. Write the field notes in the order specified in the guide, "Typical Field Notes and Classified Excerpts," page 1-5 or 2-7, both are identical. This applies even if the original surveyor did not follow these guidelines. There could be exceptions to this rule, especially when dealing with standard parallels.
16. It would be helpful when you are checking your final draft set of field notes to write true point numbers next to the description on the left hand side of the page.
17. Report magnetic declination to the nearest 1/4 degree.
18. Cardinal directions, such as N., S., E. and W. get a period, also as in N. 1/16 sec. cor. or S. 1/16 sec. cor. The directions NE, SE, SW and NW do not.
19. Use all caps on the cover page until below the "EXECUTED BY" statement.
20. Do not use abbreviations on page 3 except for those portions in the geographic reporting areas that are necessary. (NAD 83)
21. Report sizes of stones in descending order; such as "monumented with a granite stone, 15 x 8 x 6 ins."
22. If the record hits the bearing tree anywhere, use record. If it does not hit using record, report the change. For instance: A pine, 12 ins. diam., bears S. 60° W., 1.355 chs. dist., with healed blaze. (Record: 1.39 chs.)
23. If the tree is dead and downed, say whether you found the stump hole or not. Record and report the diameter of the stump hole.
23. Bearing trees are not capitalized. (pine, oak, cedar, etc.) Proper names of specific trees would be capitalized, such as "Pacific yew" or "Emerson oak." Names such as alligator juniper or red oak, would not be.

24. If 3/4 or more of the monument is in the ground, it is “encircled with a collar of stone.” If less than 3/4 is in the ground, it is “in a mound of stone.” Surveyor should also note whether the mound is a “supporting mound of stone.” Do not forget to note the dimensions of the mound, such as “3 ft. base, 1 ft. high.”
25. Spell out entire headings unless abbreviations are needed to reduce it to less than 3 lines, except for township and range, which can be abbreviated. For instance, “Dependent Resurvey of a Portion of the Subdivisional Lines, T. 1 N., R. 1 E., Gila and Salt River Meridian, Arizona” versus “Dep. Res. of a Portion of the Sub. Lines, T. 1 N., R. 1 E., Gila and Salt River Mer., AZ.” Up to 4 lines can be used in unusual situations.
26. When running the N-S center line of a section, the first time the center 1/4 section cor. is called, it is at intersection with the E-W center line. When the E-W center line is run, it is merely the center 1/4 sec. cor.; there is no need to call it at intersection with the N-S center line.
27. When subdividing a section, all lines must all be written up down to the 1/16 sec. cor. level. Any aliquot lines below this level can be written up by the method of “stair stepping”. Make calls to all aliquot corners along these lines, whether monumented or not.
28. General terrain descriptions are only needed on the first half mile in most cases.
29. No colon is needed after “from which”, it should not read “from which:”
30. Use the term center line, not centerline.
31. On range lines, the preferred method of stamping the cap of 1/4 sec. cors. and 1/16 sec. cors. is shown on page 112 of the Manual, where the 1/4 is above the ranges and below the township.

	T ## N	
	1/4	
R ## E		R ## E
S 36		S 31

2005

32. To make “pinon” read “piñon” in Word, go to Insert, Symbol, then pick the ñ character and create a hot key.
33. Use hyphens on the terms “metes-and-bounds” and “right-of-way.”
34. Unless a concurrent survey exists, add the marks of the year to the cap, unless it is in the same year as another survey.
35. In general, use the term “from which” when you are tying in corner accessories. Use the term “from this cor. point” when the tie is informational.

**True Line Plats:**

1. For review purposes, a plat, (hand drawn or drafted in AutoCad) with all true point names, and appropriate corner symbol and closures would be of great help.
2. For ease in reading the plat, when areas are congested with angle points, and if they are consecutively numbered; labeling every 5 or 10 of them is preferred.

3. Note on closures: They are supposed to be shown on all surveys. The policy still stands that an area of larger than 10 acres needs to close based on the standards of the Manual in place at the time of survey.

### Field Books

1. Should have true point names written on the page of the corner description. This is also true for all bearing objects that are collected or shot in.
2. Should have an accurate and legible index.
3. If done in the book, should have legible impressions of the cap markings as well as a hand drawing. If done in a deck pad, please staple the impression in the page where the cor. is described. Navajo Project Office is currently using a system of organizing impressions that is acceptable for that project office.
4. Always note in the field book if a bearing object of record is not found, or it is assumed that it wasn't searched for. (There is no need to mention this in the field notes in most cases, as in the field notes, it is assumed that it was looked for.)
5. Write the Group Number as well as the township and range on the outside of the field tablet. Also, make sure that the reviewer knows how many field tablets there are by writing "Book 1 of 1" or "Book 2 of 3", etc. on the outside of the book.
6. Use diagrams in the book when appropriate, especially in areas that a great deal of detail is needed. Diagrams help a great deal when reviewing or writing notes.

### Field Folders

1. When organized into separate folders, it makes finding information much easier. The state office is currently putting together field folders that should already have folders and also will include blank floppy disks.
2. The disks need only contain the latest and greatest of the files, especially the DC file.
3. Make sure that the CMM, Trimble, and Word files are in different folders, preferably on separate disks. Place them in a disk mailer or other material to protect them.
3. An ".CSR" report, generated by clicking F4 in CMM, prior to doing computations, would be of great help in determining what control and record was used in your computations. Or, an Inverse Report generated in RH CMM is equally helpful. If both files were included on the floppy, they could be easily searched, for corners.
4. The surveyor should keep a backup of all data files. and also give one to the Field Chief at PFO or NCSPPO.

### Private Monument Descriptions

1. If the surveyor re-monuments a private surveyor that recovered original evidence and then set his own monument to perpetuate the original evidence, use the language **careful and faithful perpetuation**.
2. If you do not have a record of the monument being accepted, or are accepting other local control without a pedigree, it should read **point accepted for the cor. of ###, occupied with ###. This is accepted as the best available evidence of .....**

3. If the private surveyor has proportioned the position correctly and used proper controlling corners, then it is accepted as **careful and faithful reestablishment** of the original corner.
4. On 1/16 section corners and smaller that are accepted, it is a **careful and faithful determination** of the corner point. (If the monument is of unknown origin at the correct position, see number 2 above.)
5. Use adequate rejection statements as necessary.

**General Rules on Index Diagram of Field Notes**

1. Place the page number above the section number and to the right of the section number. (There are exceptions, such as the south and west boundaries of the township. See sample notes.)
2. If the entire section line is run, place the page number opposite the one quarter section corner. If only one half mile is run, place the page number opposite a sixteenth section corner.
3. The page number refers to the page that begins the course, such as "North, bet. secs. 2 and 3."

**Formatting Paragraph - Microsoft Word**

While typing field notes in Word it is important that "Indents and Spacing" and "Tabs" are set correctly. CRAM5 will set these correctly when you begin your field notes, but if they somehow get changed during the session CRAM5 will automatically reset them for the next paragraph if any macro is run completely\*. The format for each paragraph can be checked or corrected by selecting Format and Paragraph on the tool bar. The cursor should be on the paragraph you intend to check or correct.

**"Indents and Spacing" should be set as follows:**

**For all paragraphs except bearing objects and reference monuments:**

General

Alignment: Justified      Outline Level: Body Text

Indentation

Left: 0"  
 Right: 0"                      Special: Hanging                      By: 0.9"

Spacing

Before: 0 pt  
 After: 0 pt                      Line spacing: Single                      At: leave blank

**For bearing objects and reference monuments:**

General

Alignment: Justified      Outline Level: Body Text

Indentation

Left: 1.4"  
 Right: 0"                      Special: Hanging                      By: 0.2"

Spacing

Before: 0 pt  
After: 0 pt      Line spacing: Single      At: leave blank

**"Tabs" should be set as follows:**

**For all paragraphs except bearing objects and reference monuments:**

Tab stop positions:                      Default Tab Stops: 0.5"

0.3" decimal  
0.9" left  
1.4" left  
1.6" left  
3.6" center

**For bearing objects and reference monuments:**

Tab stop positions:                      Default Tab Stops: 0.5"

0.3" decimal  
1.0" left  
1.4" left  
1.6" left  
3.6" center

It is important to run macros all the way through, even if you make a mistake. You can go back and edit them later or delete them and run them again. If you go back and edit a paragraph you must arrow down or use the mouse to return to the correctly formatted blank line before proceeding.

Field notes should be written in **Courier New**.

### **Topography Calls**

Here is a list of topos that come out of the macros with bearings and distances attached.

Cor. is located 20 lks. westerly of bladed road.

Creek, 5 ft. wide, course N. 20° E.

Birch Creek, 5 ft. wide, course N. 20° E.

Black Canyon River, 50 ft. wide, course N. 20° E.

Wash, 30 ft. wide, 10 ft. deep, drains N. 10° E.

Ravine, drains N. 10° E.

Bottom of descent, slopes N. 20° E.

Head of ravine, drains N. 10° W.

Right bank of the Rio Salada River, bears S. 30° E. and N. 40° W.

Left bank of the Ford River, bears S. 10° E. and N. 10° W.

Left bank of the Lucy Wash, 10 ft. high, bears N. 20° E. and S. 20° W.

Right bank of the Sandy Wash, 10 ft. high, bears S. 20° E. and N. 20° W.

Trail road, bears N. 20° E. and S. 20° W.

Graded road, 30 ft. wide, bears N. 20° E. and S. 20° W.



### **A note on macros.**

Oregon's macros can be fairly easily modified. The Alaska macros are more complex. There are some inconsistencies even between the OR and AK versions. For instance, AK macros use "Deposit a magnet, in a white plastic case, at the base of the stainless steel post." The OR version does not include commas. The ASO preferred method is to use the commas.

If the surveyor would like to add some simple macros for things such as a specific wash or road in their township, it is fairly straight forward, although there are a lot of different ways it can be done. We will try and get something out in the near future on how to write and edit macros.

### **Conclusion**

These guidelines are a work in progress. If there are suggestions you would like to make, please send them to the Office Chief at the Arizona State Office. They will be looked at and incorporated into future guidelines and procedures if the recommendations are meritorious.

Attached is a sample set of field notes that shows ASO's preferences for field notes. It is by no means complete. When special situations arise, please contact the state office staff for assistance.

If you find errors in these guidelines, please let us know so that we can make the corrections in the next edition.

**ORIGINAL**

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

**FIELD NOTES**

**OF THE DEPENDENT RESURVEY OF  
A PORTION OF THE FIFTH STANDARD PARALLEL NORTH (SOUTH BOUNDARY)**

**A PORTION OF THE THIRD GUIDE MERIDIAN EAST (EAST BOUNDARY)**

**A PORTION OF THE WEST BOUNDARY**

**A PORTION OF THE SUBDIVISIONAL LINES**

**AND THE SUBDIVISION OF SECTION 36**

**TOWNSHIP ## NORTH, RANGE ## EAST**

**OF THE GILA AND SALT RIVER MERIDIAN**

**IN THE STATE OF ARIZONA**

**EXECUTED BY**

**Dirk A. Pitt, Cadastral Surveyor**

Under Special Instructions dated July 5, 2005, approved July 5, 2005, which provided for the surveys included under Group No. 950, and assignment instructions dated July 5, 2005.

**Survey commenced August 1, 2005**

**Survey completed November 17, 2005**

# INDEX DIAGRAM

TOWNSHIP ?? NORTH                  RANGE ?? EAST  
 GILA AND SALT RIVER MERIDIAN, ARIZONA

6	5	4	3	2	1
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19	20	21	22	23	24
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8 31	32	33	34	35 9	10 36 6 4

## T. ## N. R. ## E, Gila and Salt River Meridian, Arizona

## CHAINS

The following field notes describe the dependent resurvey of a portion of the Fifth Standard Parallel North (south boundary), a portion of the Third Guide Meridian East (east boundary), a portion of the west boundary, a portion of the subdivisional lines, and the subdivision of section 36, Township ## North, Range ## East, Gila and Salt River Meridian, Arizona.

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

Clay S. Tallman surveyed the Fifth Standard Parallel North through Range ## East, in 1898. Binger D. Herman surveyed the Third Guide Meridian East, in 1908. Alexander C. Benson surveyed the west and north boundaries and the subdivisional lines, in 1912. Richard D. Clark resurveyed a portion of the west boundary, in 1967.

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 July 5, 2005, for Group Number 950, Arizona.

The true meridian direction and length of all lines were determined by real time kinematic global positioning system observations using Trimble Navigation 4700 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 Station (CORS) "HORSE". The NAD 83 (1996), geographic position of the standard corner of Township ## North, Ranges ## and ## East, is as follows:

Latitude: 23°52'45.55" N.                      Longitude: 110°34'45.22" W.

The mean magnetic declination is 12 1/4° E.

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**Dependent Resurvey of a  
Portion of the Fifth Standard Parallel North (South Boundary),  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona**

CHAINS

Restoring the survey executed by  
Clay S. Tallman, in 1898

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Beginning at the stan. cor. of Tps. ## N., Rs. ## and ## E.,  
monumented with a sandstone, 25 x 8 x 6 ins., firmly set,  
projecting 4 ins. above ground, mkd. SC T##N on N. face.

At the corner point

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

SC	
T ## N	
R ## E	R ## E
S 36	S 31

2005

from which

A juniper, 10 ins. diam., bears N. 45 1/2° E., 50 lks.  
dist., mkd. T##N R##E S31 BT.

A juniper, 15 ins. diam., bears N. 30 1/4° W., 1.325 chs.  
dist., mkd. T##N R##E S36 BT.

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

Bury the orig. stone alongside the stainless steel post.

Cor. is located 20 lks. N. of a trail road, bears E. and W.

N. 89°59' W., on the S. bdy. of sec. 36.

Over rolling grassland through scattering juniper.

40.01

The stan. 1/4 sec. cor. of sec. 36, determined from the remains  
of the orig. bearing trees

A juniper stump, 12 ins. diam., projecting 8 ins. above  
ground, bears N. 12 1/4° E., 33 lks. dist.

A rotted pine stump, 16 ins. diam., bears N. 67 3/4° W.,  
17.5 lks. dist., with healed blaze. (Record: N. 60 W.)

At the corner point

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



Dependent Resurvey of a  
Portion of the Fifth Standard Parallel North (South Boundary),  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona

CHAINS	<p style="text-align: center;">SC T ## N R ## E <u>1/4 S 36</u></p> <p style="text-align: center;">2005</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <hr style="width: 20%; margin: 10px auto;"/> <p>N. 89°58' W., beginning new measurement.</p> <p>20.08 Barbed wire fence, bears N. 5° E. and S. 5° W.</p> <p>30.10 Wash, 20 ft. wide, 5 ft. deep, drains S. 30° W.</p> <p>40.03 The stan. cor. of secs. 35 and 36, perpetuated by Gil Morgan, Arizona R.L.S. No. 420, monumented with a rebar, 18 ins. long, 3/4 in. diam., firmly set, projecting 4 ins. above ground, with affixed aluminum cap mkd. AZ LS 420 1946. This is accepted as a careful and faithful perpetuation of the orig. cor. position.</p> <p>from which the orig. bearing trees</p> <p style="padding-left: 40px;">A pine, 18 ins. diam., bears S. 30° E., 20 lks. dist., with healed blaze.</p> <p style="padding-left: 40px;">A pine, 12 ins. diam., bears N. 45 1/4° W., 75.5 lks. dist., with rotted blaze. (Record: 57.5 lks.)</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;">SC T ## N R ## E <u>S 35   S 36</u></p> <p style="text-align: center;">2005</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <p>Deposit the rebar inside the stainless steel post.</p> <hr style="width: 20%; margin: 10px auto;"/>
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**Dependent Resurvey of a Portion of  
the Third Guide Meridian East (East Boundary),  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona**

CHAINS	Restoring the survey executed by Binger D. Herman, in 1908
	<p>From the stan. cor. of Tps. ## N., Rs. ## and ## E., hereinbefore described.</p> <p>N. 0°01' E., bet. secs. 31 and 36, on the E. bdy. of the Tp.</p> <p>Over gently rolling grassland.</p>
19.50	Left bank of the Tooley River, bears N. 25° E. and S. 25° W.
20.01	<p>True point for the S. 1/16 sec. cor. of secs. 31 and 36; falls in the Tooley River, 60 ft. wide, 1 ft. deep, course S. 25° W., where it is impracticable to establish a permanent monument.</p> <p>From this true point, the point selected for a witness cor. to the S. 1/16 sec. cor. of secs. 31 and 36, bears N. 45°00' W., 75.5 lks. dist.</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> <div style="text-align: center;"> <p>WC T ## N 1/4 R ## E   R ## E S 36   S 31</p> <p>2005 ↘</p> </div> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p>
20.50	Right bank of the Tooley River, bears N. 25° E. and S. 25° W.
40.02	<p>The 1/4 sec. cor. of secs. 31 and 36, reestablished by Bunger G. Hiller, Arizona R.L.S. No. 1565, in 1965, according to an unrecorded plat obtained from his offices in Seely, AZ., monumented with an axle, 36 ins. long, 1 1/2 ins. diam., firmly set, projecting 6 ins. above ground. This is accepted as a careful and faithful reestablishment of the orig. cor. position.</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>

**Dependent Resurvey of a Portion of  
the Third Guide Meridian East (East Boundary),  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona**

CHAINS	
	T ## N 1/4 R ## E   R ## E S 36   S 31  2005
	Deposit a magnet, in a white plastic case, at the base of the stainless steel post.  Raise a mound of stone, 3 ft. base, 1 ft. high, N. of cor.  Remove the axle from the area, impracticable to bury.  <hr style="width: 20%; margin: auto;"/> N. 0°01' E., beginning new measurement.
5.50	High voltage transmission line, bears N. 85° E. and S. 85° W.
20.00	The N. 1/16 sec. cor. of secs. 31 and 36, established by Milt H. Friedman, Arizona R.L.S. No. 26900, in 1989, according to Plat No. 989, filed at the Belvoir County Courthouse, dated January 31, 1989, monumented with a rebar, 12 ins. long, 5/8 in. diam., firmly set, projecting 4 ins. above ground, with affixed plastic cap mkd. RLS 26900. This is accepted as a careful and faithful establishment of the cor. position.  At the corner point  Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 25 ins. in the ground, with brass cap mkd.
	T ## N N 1 /16 R ## E   R ## E S 36   S 31  2005
	Deposit a magnet, in a white plastic case, at the base of the stainless steel post.  Deposit the rebar inside the stainless steel post.  <hr style="width: 20%; margin: auto;"/> N. 0°01' E., beginning new measurement.
10.03	A rebar, 5/8 in. diam., firmly set projecting 3 ins. above ground, with affixed brass tag stamped RLS 15510, bears N. 65° E., 5 lks. dist.
13.30	Balder Road, asphalt, 25 ft. wide, bears S. 85° E. and N. 85° W.

**Dependent Resurvey of a Portion of  
the Third Guide Meridian East (East Boundary),  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona**

CHAINS	
20.00	<p>The cor. of secs. 25, 30, 31 and 36, monumented with an iron post, 2 ins. diam., firmly set, projecting 6 ins. above ground, with brass cap mkd. T##N R##E R##E S25 S30 S36 S31 1908. Add the marks 2005 to the brass cap.</p> <hr/> <p style="text-align: center;">Dependent Resurvey of a Portion of the West Boundary, T. ## N., R. ## E., Gila and Salt River Meridian, Arizona</p> <hr/> <p style="text-align: center;">Restoring the survey executed by Alexander C. Benson, in 1918 and the resurvey executed by Richard D. Clark, in 1967</p> <hr/> <p>From the stan. cor. of Tps. ## N., Rs. ## and ## E., hereinbefore described.</p> <p>N. 0°05' W., bet. secs. 31 and 36, on the W. bdy. of the Tp.</p> <p>Desc. gradually over gently rolling land.</p>
12.30	Graveled road, 15 ft. wide, bears S. 65° E. and N. 65° W.
40.35	<p>Point for the 1/4 sec. cor. of secs. 31 and 36, at proportionate dist., by the method of irregular boundary adjustment, there is no remaining evidence of the 1967 monument or accessories.</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> <div style="text-align: center;"> <p>T ## N 1/4 R ## E   R ## E S 36   S 31</p> <p>2005</p> </div> <p>from which</p> <p style="text-align: center;">A rock outcrop, 15 x 8 x 5 ft. high, bears N. 45 1/4° E., 10.5 lks. dist., with XBO chiseled on SE face.</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <hr/> <p>N. 0°02' E., beginning new measurement.</p>
39.78	The cor. of secs. 25, 30, 31, and 36, monumented with an iron post, 2 1/2 ins. diam., firmly set, projecting 3 ins. above ground, with brass cap mkd. T##N R##E R##E S25 S30 S36 S31 1967. Add the marks 2005 to the brass cap.

Dependent Resurvey of a Portion of the West Boundary  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona

CHAINS	
	<p>from which the 1967 bearing trees</p> <p>An oak stump hole, 12 ins. diam., bears N. 45 1/2° E., 31 lks. dist., with a fallen oak, 12 ins. diam., with rotted blaze, lying alongside. (Record: 38 lks.)</p> <p>A pine, 10 ins. diam., bears S. 45 1/4° E., 20.5 lks. dist., with healed blaze.</p> <p>and from which a new bearing tree</p> <p>A piñon, 12 ins. diam., bears N. 50 1/2° E., 63.5 lks. dist., mkd. T##N R##E S30 BT.</p>
	<hr/> <p>Dependent Resurvey of a Portion of the Subdivisional Lines, T. ## N., R. ## E., Gila and Salt River Meridian, Arizona</p> <hr/>
	<hr/> <p>Restoring the survey executed by Alexander C. Benson, in 1912</p> <hr/>
	<p>From the stan. cor. of secs. 35 and 36, hereinbefore described.</p> <p>North, bet. secs. 35 and 36.</p> <p>Over a level, cultivated field.</p>
40.00	<p>Point for the 1/4 sec. cor. of secs. 35 and 36, at proportionate dist., falls in the west bound lane of Balder Road, asphalt, 25 ft. wide, bears E. and W., there is no remaining evidence of the orig. cor.</p> <p>Set a railroad spike, flush with the surface of asphalt.</p> <p>from which</p>
	<p>A brass tablet, 3 1/4 ins. diam., 3 1/2 ins. stem, cemented in a drill hole, in solid rock, for a reference monument, bears N. 45°00' E., 100 ft. dist., with top mkd. RM T##N R##E S36 1/4 100 FT TO COR 2005, and an arrow pointing to the cor.</p> <p>A stainless steel post, 28 ins. long, 2 1/2 ins. diam., set 26 ins. in the ground, for a reference monument, bears N. 45°00' W., 75 ft. dist., with brass cap mkd. RM T##N R##E S35 1/4 75 FT TO COR 2005, and an arrow pointing to the cor. Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p>
41.53	<p>Cor. of woven wire fences, with fence lines extending N. and E.</p>



Dependent Resurvey of a Portion of the Subdivisional Lines,  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona

CHAINS							
80.00	<p>The cor. of secs. 25, 26, 35 and 36, monumented with an iron post, 20 ins. long, 2 ins. diam., firmly set, 3 ins. below the surface of ground, filled with concrete, with no brass cap.</p> <p>At the corner point</p> <p>Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 24 ins. in the ground, with brass cap mkd.</p> <table border="1" data-bbox="857 615 1081 716"> <tr> <td>T ## N</td> <td>R ## E</td> </tr> <tr> <td>S 26</td> <td>S 25</td> </tr> <tr> <td>S 35</td> <td>S 36</td> </tr> </table> <p>2005</p> <p>from which</p> <p>A piñon, 12 ins. diam., bears N. 37° E., 36 lks. dist., mkd. T##N R##E S25 BT.</p> <p>A piñon, 4 ins. diam., bears N. 23° W., 50.5 lks. dist., mkd. X BT.</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <p>Bury the iron post alongside the stainless steel post.</p> <p>From this cor. point, an iron post, 2 1/2 ins. diam., firmly set, projecting 3 ins. above ground, with brass cap mkd. S26 S25 S35 S36 RLS 15320, established by Arthur Anderson, Arizona R.L.S. No. 666, in 1990, bears N. 56°09' W., 10 lks. dist. Because orig. cor. was not recovered in 1990, this position was established incorrectly by proportionate dist., and is not utilized in the course of this resurvey.</p> <hr/> <p>From the cor. of secs. 25, 30, 31 and 36, on the E. bdy. of the Tp., hereinbefore described.</p> <p>N. 89°54' W., bet. secs. 25 and 36.</p> <p>Over sandy rolling land through scattering piñon.</p>	T ## N	R ## E	S 26	S 25	S 35	S 36
T ## N	R ## E						
S 26	S 25						
S 35	S 36						
40.02	<p>Point for the 1/4 sec. cor. of secs. 25 and 36, at proportionate dist., there is no remaining evidence of the orig. cor.</p> <p>Set a stainless steel post, 28 ins. long, 2 1/2 ins. diam., 18 ins. in the ground, to bedrock, in a mound of stone, 3 ft. base, to top, with brass cap mkd.</p>						

Dependent Resurvey of a Portion of the Subdivisional Lines,  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona

CHAINS	
	<p style="text-align: center;">T ## N R ## E S 25 1/4 ——— S 36  2005</p>
	<p>from which</p> <p style="padding-left: 40px;">A piñon, 10 ins. diam., bears S. 67 1/4° E., 51.5 lks. dist., mkd. T##N R##E S36 BT.</p> <p style="padding-left: 40px;">A juniper, 12 ins. diam., bears N. 45 1/2° W., 45 lks. dist., mkd. T##N R##E S25 BT.</p> <p>Deposit a magnet, in a white plastic case, at the base of the stainless steel post.</p> <p>From this cor. point, an iron post, 2 1/2 ins. diam., firmly set, projecting 3 ins. above ground, with brass cap mkd. 1/4 S25 S36 RLS 15320, established by Arthur Anderson, Arizona R.L.S. NO. 666, in 1990, bears N. 50°10' W., 5 lks. dist. Cor. was established using improper control and is not utilized in the course of this resurvey.</p>
80.04	<p>The cor. of secs. 25, 26, 35 and 36.</p> <hr/> <p style="text-align: center;">Subdivision of Section 36, T. ## N., R. ## E., Gila and Salt River Meridian, Arizona</p> <hr/> <p>From the stan. 1/4 sec. cor. of sec. 36.</p> <p>N. 0°03' E., on the N. and S. center line of sec. 36.</p> <p>Over rolling grassland.</p>
23.50	<p>Wash, 30 ft. wide, 5 ft. deep, drains S. 80° W.</p>
40.01	<p>Point for the center 1/4 sec. cor. of sec. 36, at intersection with the E. and W. center line.</p> <p>Set a brass tablet, 3 1/4 ins. diam., 3 1/2 ins. stem, cemented in a drill hole, in solid rock, with top mkd.</p> <p style="text-align: center;">T ## N R ## E C 1/4 S 36  2005</p>

Subdivision of Section 36,  
T. ## N., R. ## E., Gila and Salt River Meridian, Arizona

CHAINS	<p>From this cor. point, a rebar, 3/4 in. diam., firmly set, projecting 2 ins. above ground, with affixed plastic cap mkd. C1/4 RLS 15320, established by Arthur Anderson, Arizona R.L.S. No. 666, in 1990, bears N. 25°45' W., 3 lks. dist. Cor. was established using improper control and is not utilized in the course of this resurvey.</p>
80.02	<p>The 1/4 sec. cor. of secs. 25 and 36.</p> <hr/> <p>From the 1/4 sec. cor. of secs. 31 and 36.</p> <p>N. 89°58' W., on the E. and W. center line of sec. 36.</p>
40.01	<p>The center 1/4 sec. cor. of sec. 36.</p>
80.02	<p>The 1/4 sec. cor. of secs. 35 and 36.</p> <hr/> <p style="text-align: center;">GENERAL DESCRIPTION</p> <hr/> <p>The survey is located about 12 miles northerly of Badger Gulch, Arizona. Access is by way of Arizona Highway Number 57A and Balder Road.</p> <p>The terrain is generally gently rolling with sparse juniper and piñon trees being the predominant species. The mean elevation is about 4500 feet above sea level.</p> <p>The Tooley River runs through the southeasterly portion of the township and drains to the southwest. There are several irrigation diversions on the river.</p> <p>The soil is generally third rate although sandy loam of good quality is found in the riparian areas along the Tooley River. Cattle and sheep grazing is the predominant agricultural activity, but there is a large irrigated farm in the southeast portion of section 36 that produces wheat, corn, beans and melons.</p> <p>No mineral deposits or activity was noted during the course of the survey.</p> <p>The mean magnetic declination of 12 1/4° E. was derived from the United States Geological Survey computer program GEOMAG, utilizing the World Magnetic Model for Epoch 2000 for the dates of survey.</p>



## CERTIFICATE OF SURVEY

I, Dirk A. Pitt, Cadastral Surveyor, HEREBY CERTIFY upon honor, that in pursuance of special instructions bearing date of 5th day of July, 2005, I have dependently resurveyed the Fifth Standard Parallel North through Range ## East (south boundary), a portion of the Third Guide Meridian East (east boundary), a portion of the west boundary, a portion of the subdivisional lines, and the subdivision of section 36, T. ## N., R. ## 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 Instructions for the Survey of the Public Lands of the United States, 1973, and in specific manner described in the foregoing field notes.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Cadastral Surveyor)

## CERTIFICATE OF APPROVAL

BUREAU OF LAND MANAGEMENT  
Phoenix, Arizona

The foregoing field notes of the dependent resurvey of the Fifth Standard Parallel North through Range ## East (south boundary), a portion of the Third Guide Meridian East (east boundary), a portion of the west boundary, a portion of the subdivisional lines, and the subdivision of section 36, T. ## N., R. ## E., Gila and Salt River Meridian, in the State of Arizona, executed by Dirk A. Pitt, Cadastral Surveyor, having been critically examined and found correct, are hereby approved.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(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. ## N., R. ## E., Gila and Salt River Meridian, Arizona, is a true copy of the original field notes.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Chief Cadastral Surveyor of Arizona)



# APPENDIX

Miscellaneous  
Helpful Guides  
and  
Old Memos

## Find and replace text or other items

Use Microsoft Word to find and replace text, formatting, paragraph marks, page breaks, and other items. You can extend your search by using wildcards and codes.

- ▶ Find text
- ▶ Replace text
- ▶ Find and replace specific formatting
- ▼ Find and replace paragraph marks, page breaks, and other items

You can easily search for and replace special characters and document elements such as page breaks and tabs.

1. On the **Edit** menu, click **Find** or **Replace**.
2. If you don't see the **Special** button, click **More**.
3. In the **Find what** box, do one of the following:
  - To choose the item from a list, click **Special**, and then click the item you want.
  - Type a code for the item directly in the **Find what** box.
4. If you want to replace the item, enter what you want to use as a replacement in the **Replace with** box.
5. Click **Find Next**, **Replace**, or **Replace All**.
  - To cancel a search in progress, press ESC.
  - ▶ Tip
- ▶ Find and replace noun or adjective forms or verb tenses

### Search by using wildcards

- ▶ Use wildcards to find and replace
- ▶ Wildcards for items you want to find and replace

### Search by using codes

- ▶ Use codes to find and replace
- ▶ Codes for items you want to find and replace

★ To Turn off making  
SMALL FRACTIONS:

Tools, AutoCorrect Options,  
 ← UNCHECK Fractions (1/2)  
with fraction character.

IN BOTH: AutoFormat as  
you TYPE TAB  
AND: AUTOFORMAT TAB.

★ To Globally replace a  $\frac{1}{2}$  with  $\frac{1}{2}$ :

Edit, Replace, Find what: alt+0189 (inserts small  $\frac{1}{2}$ )  
Replace with:  $\frac{1}{2}$ .

To Globally replace a  $\frac{1}{4}$  with  $\frac{1}{4}$ :

Find what: Alt+0188 (inserts small  $\frac{1}{4}$ )  
Replace with:  $\frac{1}{4}$ .

**Lester Fischer**  
04/14/2003 03:12 PM

To: Cheryl Hansen/AZSO/AZ/BLM/DOI@BLM  
cc:  
Subject: Witness Corner Policy

----- Forwarded by Lester Fischer/AZSO/AZ/BLM/DOI on 04/14/03 03:12 PM -----

**Lester Fischer**  
02/11/03 08:30 AM

To: Dale Wilson/AZSO/AZ/BLM/DOI@BLM, Rich Salazar/PFO/AZ/BLM/DOI@BLM, Gordy Bube/PFO/AZ/BLM/DOI@BLM, Bob Lyle/PFO/AZ/BLM/DOI@BLM, Adrien Rodriguez/PFO/AZ/BLM/DOI@BLM, Mark Searles/PFO/AZ/BLM/DOI@BLM, Bill Foster/AZSO/AZ/BLM/DOI@BLM, Geoff Graham/PFO/AZ/BLM/DOI@BLM, Bill Olver/AZSO/AZ/BLM/DOI@BLM  
cc:  
Subject: Witness Corner Policy

There has been some questions regarding the witness cor. policy, therefore I am refreshing your memory.

----- Forwarded by Lester Fischer/AZSO/AZ/BLM/DOI on 02/11/03 09:33 AM -----

**Lester Fischer**  
11/26/01 10:41 AM

To: Dale Wilson/AZSO/AZ/BLM/DOI@BLM, Rich Salazar/PFO/AZ/BLM/DOI@BLM, Gordy Bube/PFO/AZ/BLM/DOI@BLM, Bob Lyle/PFO/AZ/BLM/DOI@BLM, Adrien Rodriguez/PFO/AZ/BLM/DOI@BLM, Mark Searles/PFO/AZ/BLM/DOI@BLM, Bill Foster/AZSO/AZ/BLM/DOI@BLM, ncspo@cnetco.com, Jim Werdel/AZSO/AZ/BLM/DOI@BLM  
cc: Kenny Ravnika/AZSO/AZ/BLM/DOI@BLM  
Subject: Witness Corner Policy

For reestablishing the true points from recovered witness corners, the Washington Witness Corner Policy will be followed, not the Kelly Policy dated February 24, 1984.

#### **Witness Corner Policy**

"Last year one of the Work Commissions suggested some options for establishing true points from recovered witness corners. After considering the responses from the States, the policy of the Washington Office remains as it has been since at least the early 1970's. It is consistent to use two methods of determining the true points, since 1/4 section and section corners are reestablished using two methods of proportionate measurement. The continued policy for reestablishing the true point for a section corner will be by extending the line through the witness corner at the stated record distance. One-quarter corners are reestablished from witness corners by the single proportionate method, the same as line trees, closing corners, meander corners, or any other marks of the original surveyor. The witness corner then becomes an angle point just as any other mark or monument from the original survey.

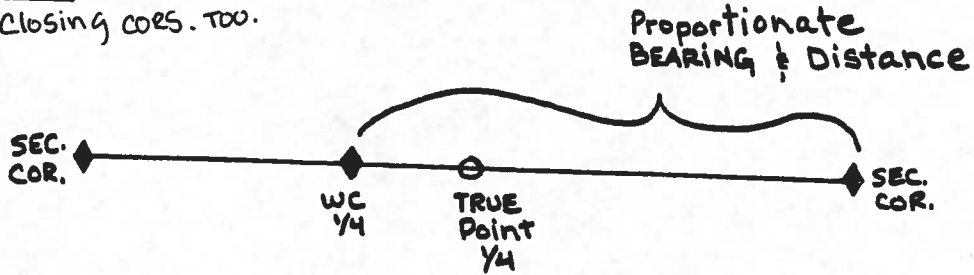
This policy is stated in the Manual of Surveying Instructions and the Case Book and will be the stated policy given to the Interior Board of Land Appeals on their request.

The policy outlined above is the general policy and exceptions are left to the professional judgment of the surveyor on the ground."

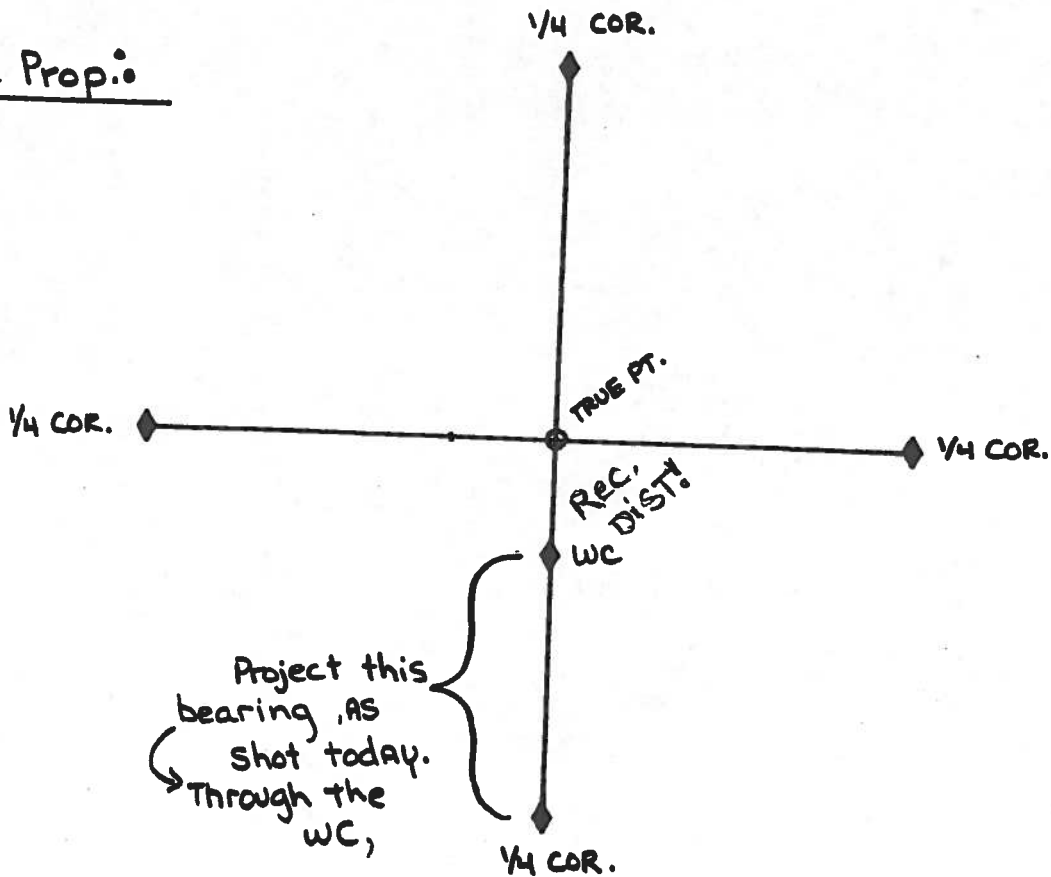
Reference Memo  
Witness CORNER Policy Diagram

1. Single Prop.:

USE FOR CLOSING CORNERS TOO.



2. Double Prop.:



**NOTE:** If there is more than one WC for a section corner position, USE THE WC ESTABLISHED FIRST.

BUREAU OF LAND MANAGEMENT  
ARIZONA STATE OFFICE

October 6, 1992

randum

Party Chiefs, PDO

Field Supervisor, PDO, Cadastral Survey (942)

ect: Past Manual Requirements

following limits of closure specified in previous Manuals is for  
rmation purposes only. When closing against previous surveys the  
evor must exercise professional judgement as to whether or not a  
er degree of closure warrants the extra time and cost involved. As in  
situation, the Surveyor must pay close attention to their Special  
ructions for any special provisions.

The 1881 Manual	1/400
The 1890 Manual	1/400
The 1894 Manual	1/640
The 1902 Manual	1/640
The 1930 Manual	1/640
The 1947 Manual	1/640

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
ARIZONA STATE OFFICE

In reply refer to:  
9600 (952)

November 3, 1997

Memorandum

To: Cadastral Survey Staff  
From: Chief Cadastral Surveyor  
Subject: Arizona Cadastral Survey Policy Issues

As a follow-up to the quarterly Cadastral Survey meeting the week of August 25, 1997, certain issues were discussed for which written policy decisions were determined to be necessary. The issues and related decisions are as follows:

- **Use of aluminum drive rod monuments.**

Arizona Special Instructions provide that the Chief of Party may exercise a certain amount of discretion when selecting the type of monument to be used in a particular situation. This allows the surveyor to exercise professional judgment when special circumstances are encountered in the field without requiring the issuance of Supplemental Special Instructions. In the past, it has been the policy of this office to allow the use of aluminum drive rods to define wilderness area boundaries due to the rugged nature of the terrain and the potential density of monumentation along those boundaries. As a general rule, aluminum drive rods will only be used to monument Angle Points on wilderness boundaries and only where both sides of the boundary are in federal ownership. Any use of aluminum drive rods on surveys other than wilderness area boundary surveys will be limited to those circumstances under which their use can be properly justified in writing and prior written permission of a field supervisor is obtained.

- **Numbering of Angle Points on Wilderness Area Boundaries.**

Angle points on wilderness area boundaries through surveyed townships will be numbered consecutively by section, in a counterclockwise direction in relation to the entire wilderness boundary, beginning and ending with angle points at intersection with section lines. Angle points through unsurveyed townships will be numbered in the same manner, except on a township rather than section basis. Monuments will be designated WP (witness point) only if they fulfill the purpose of that monument as described in the Manual of Surveying Instructions, 1973 (see Sections 4-17 and 7-16).

- **Written correspondence related to a survey.**

In the past, field surveyors may have communicated in writing directly with private surveyors, landowners, or other parties who they may have encountered while conducting a particular survey. Until such time as the field survey returns have been prepared and reviewed, the field work is considered preliminary and subject to correction prior to approval. Written correspondence which has not been examined or approved by the office can seriously complicate the process in the event of a survey protest. For this reason, requests for information involving written responses should be referred to the Office section, through the field supervisors. Conversations with landowners and private surveyors should be noted on the weekly reports, along with a synopsis of the content of the discussion.

- **Calculation and Reporting of Magnetic Declination.**

A computer program known as MAGPOINT is currently available from U.S. Geological Survey that will compute the magnetic declination reported in the official field note record. A field note example of the statement reporting magnetic declination determined by this software is as follows:

*The mean magnetic declination of xx° E. was derived from the U.S. Geological Survey computer program MAGPOINT, utilizing the Regional Magnetic Field Model for Epoch 1995 for the dates of survey.*

This program should be used unless observations of the magnetic declination are actually made on the lines of survey.

*Kenny D. Ravnikar*

Kenny D. Ravnikar

**CIRCULAR CURVE DATA**

**FIELD NOTES:**

S. 63°59' E., on line 1-2, along the center line of State Highway No. 70.

5.00 Point for AP2, identical with the Point of Curvature, monumented with .....

Thence, on line 2-3, along a circular curve to the left, having a central angle of 88°36', a radius of 481.71 ft., on the center line of State Highway No. 70, the chord of said arc bears N. 71°43' E., 10.195 chs. dist.

11.286 Point for AP3, identical with the Point of Tangency, not monumented.

---

N. 27°25' E., on line 3-4, along the center line of State Highway No. 70.

3.74 Point for AP4, identical with the Point of Curvature, not monumented.

---

Thence, on line 4-5, along a circular curve to the right, having a central angle of 30°57', a radius of 955.43 ft., on the center line of State Highway No. 70, the chord of said arc bears N. 42°53'30" E., 7.725 chs. dist.

7.820 Intersect the N. and S. center line of the NE 1/4 of sec. 8.

From this point, the E. 1/16 sec. cor. of secs. 5 and 8, bears North, 5.78 chs. dist., hereinbefore described.

Thence, continuing on line 4-5, along a circular curve to the right, having a central angle of 22°12', a radius of 955.43 ft., on the center line of State Highway No. 70, the chord of said arc bears N. 69°28' E., 5.574 chs. dist.

13.429 Point for AP5, identical with the Point of Tangency, monumented with .....

---

N. 80°34' E., on line 5-6, along the center line of State Highway No. 70.

**PLAT:**

C1	C2
Δ=88°36'	Δ=53°09'
R=481.71 Ft.	R=955.43 Ft.
L=11.286 Chs.	L=13.429 Chs.
C=10.195 Chs.	C=12.952 Chs.



Note: When the tangents to a curve are reported to the nearest minute in bearing, then your central angle will also be to the minute. The curve data will need to be recalculated to match the central angle and chord dist. reported in the field notes. By calculating the curve data in this manner, the tangent bearing coming into the curve plus the central angle will equal the tangent bearing out of the curve.

**SPIRAL CURVE DATA**

**FIELD NOTES:**

From the point for AP1, on the line bet. secs. 4 and 9, hereinbefore described.

From this cor point, the point of Tangent to Spiral, bears N. 66°35'18" W., 1.177 chs. dist., monumented with.....  
 The tangent bearing at the Tangent to Spiral is S. 66°40' E.

Thence, on line 1-2, along a 300 ft. spiral curve to the right, having a delta of 3°30' and a rate of change of degree of curvature of 2/3°, on the center line of State Highway No. 70, the chord of said arc bears S. 65°07'25" E., 3.378 chs. dist.

3.379 Point for AP2, at the point of Spiral to Curve, not monumented.

Thence, on line 2-3, along a circular curve to the right, having a central angle of 15°30', a radius of 1000 ft., on the center line of State Highway No. 70, the chord of said arc bears S. 55°25' E., 4.086 chs. dist.

4.099 Point for AP3, at the point of Curve to Spiral, not monumented.

---

Thence, on line 3-4, along a 300 ft. spiral curve to the right, having a delta of 3°30' and a rate of change of degree of curvature of 2/3°, on the center line of State Highway No. 70, the chord of said arc bears S. 45°20' E., 4.544 chs. dist.

4.545 Point for AP4, identical with the point of Spiral to Tangent, monumented with.....

---

S. 44°10' E., on line 4-5, along the center line of State Highway No. 70.



MAY 07 1984

**Memorandum**

**To:** All Cadastral Surveyors  
**From:** Chief Cadastral Surveyor of Arizona  
**Subject:** Identification of Corner Point

In field notes of older resurveys doubt exists as to which of two monuments is at the corner point. This situation is when the resurveyor indicates that he finds the original monument and then sets an iron post alongside it. The question arises as to whether the stone or the iron post marks the corner point.

Unless conditions indicate otherwise, you must take the field notes literally and assume the resurveyor did not move the original stone but did, in fact, set the iron pipe alongside it. In that situation the stone still marks the corner point. In order to avoid future confusion the following action will be followed:

1. Tie in both monuments.
2. Reference the true corner position.
3. Remove both monuments.
4. If the iron post is in good condition reset it at the corner point and add correct date. If not, set a new metal monument at the corner point.
5. Dispose of the old monuments according to Manual Section 4-3 and page 291 of the Appendix.
6. The field notes should reflect the conditions as found including the relative position of the two monuments.

If any questions arise they may be directed to this office through the Field Section Chief or the Leader, Navajo Project Office.



SKnight/RS/05/07/84

