

# The CEDRA Corporation's COMMAND OF THE MONTH

A monthly information bulletin

August 2012

FEATURED COMMAND

Deed Writing  
Functionality



## Application Description

It was recently suggested to us that it would be good to have some sort of provision for generating a legal description (deed) using the features that our tools create. After all, all of the geometry has been established so why not take it one step further and actually produce the deed document itself.

Those involved with legal descriptions know that the format and syntax for deeds varies from surveyor to surveyor. This fact is one of the reasons why we had not implemented a deed writer to date.

However, after giving the suggestion some thought we came up with a novel idea that could be implemented in a short period of time and would accommodate the condition of varying deed syntax and format.

## The CEDRA Solution

To handle this application, the [Deed Writer] menu item located within the CEDRA-AVland-FormattingMenus Toolbar, see Figure 1 was recently developed.

## Deed Writer Overview

The premise behind the [Deed Writer] command is that the geometry or data for the deed is stored in a Parcel/Traverse Course Report File, which is an ASCII based text file. The actual syntax and format of the deed is stored as point, polyline, polygon and/or annotation features in a personal or file geodatabase.

That is to say, the user creates using the various geometry tools the layout and text that the deed is to contain. The novel idea, which was previously mentioned, is that rather than using specific values for certain deed items such as the Section, Town and Range values, the user inserts Deed Tags. Deed Tags are keywords enclosed with the < and > characters. So that for the example deed items mentioned above, the user would specify <SECTION>, <TOWN> and <RANGE> wherever the actual Section, Town or Range value would appear. In so doing, the user in essence is creating a deed template.

### Command Of The Month bulletin

*This month's issue discusses how to produce a legal description (deed writing) from a parcel/traverse course report file.*

By creating a deed template, the user is able to have one form that can be used to generate any number of legal descriptions. Since there are a number of various deed items, there are a number of Deed Tags supported by the [Deed Writer] command.

In creating a deed template, the user should establish a new data frame in an ArcMap project. The Map and Display Units should be set to inches or appropriate units of measure depending upon the size of paper to be used. The [Deed Writer] command is invoked in the data frame containing the deed template.



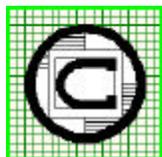
Figure 1  
CEDRA-AVland-FormattingMenus  
Toolbar

Prior to invoking the [Deed Writer] command the user activates or selects in the Table of Contents the layer(s) to be processed. In so doing, the user is able to create multiple deed templates in the same data frame. So that, when time comes to generate a deed the user simply activates the layers associated with the desired deed template.

Upon invocation of the [Deed Writer] command, a multi-input dialog box is presented from which the user specifies the various deed writing parameters. Once the appropriate values have been specified, the user clicks the OK button and the command begins the process of creating graphic elements for the features comprising the deed template.

When processing the annotation features in a deed template, the command searches for the Deed Tags and replaces the Deed Tag with its true value.

The graphic elements that are created are stored in an annotation group which can easily be made invisible or deleted using the {View} [Data Frame Properties...] command. The tab Annotation Groups contains the various commands that can be used to manipulate an annotation group.



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Figure 2  
No Selected Layer(s)  
Warning Message

Once the annotation group has been created, the [Deed Writer] command makes the active layers in the Table of Contents invisible so that only the annotation group can be seen.

### Deed Writer Operation

As stated earlier, the generation of a deed requires a Parcel/Traverse Course Report File and a deed template. These items are addressed later on this publication.

Therefore, assuming that a Parcel/Traverse Course Report File and a deed template are available, the following steps can be performed:

- **1 Activate** the data frame in the Table of Contents that contains the deed template to be processed. This is accomplished by right-clicking on the name of the data frame and selecting the Activate menu item.
- **2 Scroll** down in the **Table of Contents area**, and **select** the **layer(s)** that contain the features representing the deed template. If a layer contains selected features then only the selected features will be processed, otherwise, all features in an active layer are processed.
- **3 Scroll** down in the {CEDRA-AVland-FormattingMenus} menu combo box, and **select** the [Deed Writer] command.

If no layers have been selected when the command is invoked, the warning message shown in Figure 2 will be displayed. At this

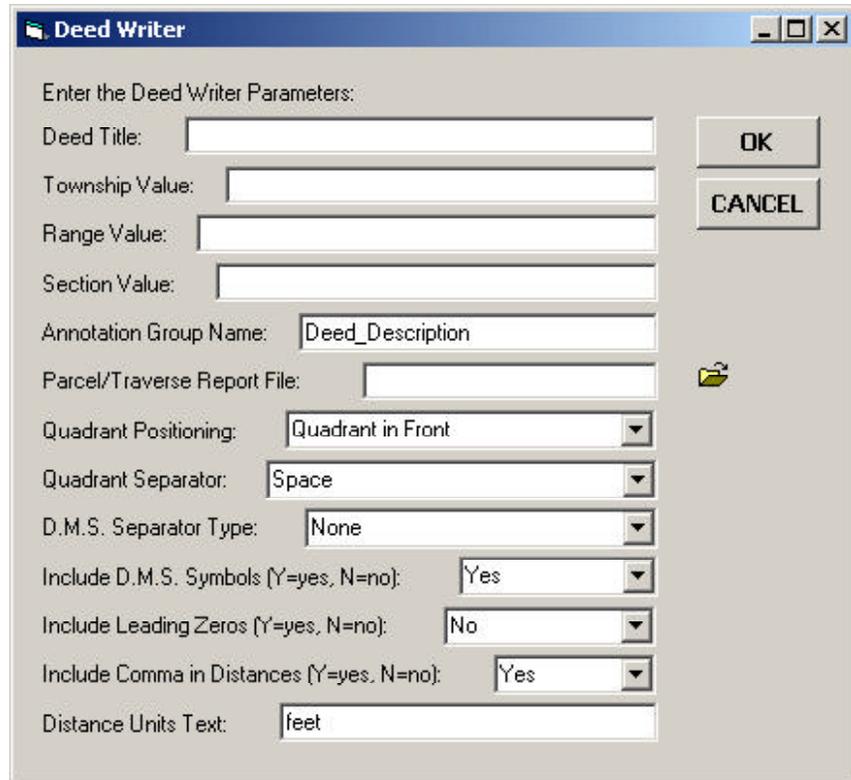


Figure 3  
Deed Writer Multi-Input Dialog Box with Default Values

point, click the OK button, select the appropriate layer(s) and invoke the command again.

If there are selected layers, the multi-input dialog box shown in Figure 3 will be displayed. Depending upon if this is the first time the command has been selected or not, the default values shown in Figure 3 will be replaced with those that were last specified by the user. In so doing, the user is able to try different parameter settings without having to reenter the data that is constant.

- **4 Enter** in the *Deed Title*: data field the text that is to replace the <TITLE> Deed Tag.
- **5 Enter** in the *Township Value*: data field the text that is to replace the <TOWN> Deed Tag.
- **6 Enter** in the *Range Value*: data field the text that is to replace the <RANGE> Deed Tag.
- **7 Enter** in the *Section Value*: data field the text that is to replace the <SECTION> Deed Tag.
- **8 Enter** in the *Annotation Group Name*: data field the name of the annotation group layer that is to be created by the command.
- **9 Enter** in the *Parcel/Traverse Report File*: data field the name of the text file containing the geometry to appear in the deed template. Alternatively, **click** on the folder icon on the right side of the parameter to display the traditional Windows file navigation dialog box where the filename can be entered or an existing file selected.
- **10 Scroll** down in the *Quadrant Positioning*: data field, and **select** the appropriate of the following options:
  - **Quadrant in Front**, to indicate that the quadrant identifier is to appear in front of the bearing such as NE45°32'24''.

- **Quadrant in Back**, to indicate that the quadrant identifier is to appear in the back of the bearing such as 45°32'24"NE.
  - **Split Quadrant**, to indicate that the quadrant identifier is to be split by the bearing for example N45°32'24"E.
- **11 Scroll** down in the *Quadrant Separator*: data field, and **select** the appropriate of the following options:
- **Space**, to indicate that a space will be inserted between the quadrant identifier and the bearing value that follows or precedes the identifier.
  - **Dash**, to indicate that a dash will be inserted between the quadrant identifier and the bearing value that follows or precedes the identifier.
  - **None**, to indicate that no character will be inserted between the quadrant identifier and the bearing value that follows or precedes the identifier.
- **12 Scroll** down in the *D.M.S. Separator Type*: data field, and **select** the appropriate of the following options:
- **Space**, to indicate that a space will be inserted between the degrees and minutes values as well as the minutes and seconds values.
  - **Dash**, to indicate that a dash will be inserted between the degrees and minutes values as well as the minutes and seconds values.
  - **None**, to indicate that no character will be inserted between the degrees and minutes values as well as the minutes and seconds values.
- **13 Scroll** down in the *Include D.M.S. Symbols*: data field, and **select** the appropriate of the following options:
- **No**, to indicate that the °, ' and " characters are not to appear in the text denoting the bearing.
  - **Yes**, to indicate that the °, ' and " characters are to appear in the text denoting the bearing.
- **14 Scroll** down in the *Include Leading Zeros*: data field, and **select** the appropriate of the following options:
- **No**, to indicate that no leading zeros are to be included in the text representing the bearing.
  - **Yes**, to indicate that leading zeros are to be included in the text representing the bearing.
- **15 Scroll** down in the *Include Comma in Distances*: data field, and **select** the appropriate of the following options:
- **No**, to indicate that commas are not to appear in the text representing a distance for example 10000.
  - **Yes**, to indicate that commas are to appear in the text representing a distance for example 10,000.
- **16 Enter** in the *Distance Units Text*: data field the text that should appear following a distance value.
- **17 Click** at the **OK** button to begin the generation of the deed, or **click** at the **Cancel** button to abort the command.
- Once the OK button is selected the command begins processing the features in the active layers. If a Deed Tag is encountered it is replaced with its corresponding actual value.
- Shown in Table 1 is a listing of the supported Deed Tags.
- Shown in Figure 4 is a sample deed template. In this sample only line and annotation features appear although it is possible to include point and polygon features if desired. As such, the deed template can be as detailed as desired.
- In Figure 4, notice how the Deed Tags appear in the annotation features. All of

Table 1  
Supported Deed Tags

<TITLE>	title of the legal description
<SECTION>	section value
<TOWN>	township value
<RANGE>	range value
<TL_BEAR>	first course bearing in the tie-line
<TL_DIST>	first course distance in the tie-line
<LENGTH>	length or perimeter value of the parcel/traverse
<LENGTH_RODS>	length or perimeter value of the parcel/traverse in terms of rods
<COURSE_STYLE_1>	the type of syntax to be used to describe the parcel/traverse courses
<COURSE_STYLE_2>	the type of syntax to be used to describe the parcel/traverse courses

the Deed Tags are used with the exception of the <COURSE\_STYLE\_2> tag. The tags:

<COURSE\_STYLE\_1>  
or  
<COURSE\_STYLE\_2>

are the tags that control the appearance of a parcel/traverse course. These tags are inserted only once in the deed template, regardless of the number of courses comprising the parcel/traverse. Depending upon which tag is used, a different syntax is used to describe a line or curve course.

Shown in Table 2 is the syntax used by each the tags. For each of the styles shown, a course description begins with the word THENCE. Then depending upon the type of course (line or curve) the information that follows will vary.

The text shown in a bold font denotes information extracted from the Parcel/Traverse Report File. For curve descriptions, the text that is italicized is determined by the [Deed Writer] command.

<p>&lt;TITLE&gt;  <u>BIA LEGAL DESCRIPTION</u>  A PORTION OF ALLOTMENT #  SECTION &lt;SECTION&gt;, T-&lt;TOWN&gt;-N, R-&lt;RANGE&gt;-W, N.M.P.M.  SAN JUAN COUNTY, NEW MEXICO</p>
<p><b>Centerline Description</b>  An easement, forty-five feet (45') in width, located in the Southwest Quarter of the Northeast Quarter of Section &lt;SECTION&gt;, Township &lt;TOWN&gt; North, Range &lt;RANGE&gt; West, of the New Mexico Principal Meridian, San Juan County, State of New Mexico, the centerline of which is described as follows:  <b>BEGINNING</b> at a point located in said Southwest Quarter of the Northeast Quarter, which bears &lt;TL_BEAR&gt; a distance of &lt;TL_DIST&gt; feet, from a 2.5" Brass Cap found for the Northeast Corner of said Section &lt;SECTION&gt;,</p>
<p>&lt;COURSE_STYLE_1&gt;</p>
<p>to a point on the South Line of said Southwest Quarter of the Northeast Quarter which is the POINT OF ENDING for this description, from which a 2.5" Brass Cap found for the East Quarter Corner of said Section &lt;SECTION&gt; bears S 89°52'09" E a distance of 1,407.77 feet</p> <p>&lt;BOL&gt;CONTAINING:&lt;/BOL&gt;      &lt;LENGTH&gt; feet, &lt;LENGTH_RODS&gt; rods and 1.37 acres +/-</p>
<p>This is to certify that I am a Licensed Professional Surveyor in the State of New Mexico, that the above description was prepared from field notes of an actual survey made by me or under my direction, and meets the Minimum Standards for Surveying New Mexico.</p>
<p>BASIS OF BEARINGS: AS MEASURED BETWEEN FOUND MONUMENTS AT THE NORTHEAST CORNER AND THE QUARTER CORNER OF SECTION 1 T-27-N, R-9-W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO. LINE BEARS: S 0°32'46" E A DISTANCE OF 2,644.51'</p> <p>Ref. Drawing: R\WM002.blai.mxd  C:\TMP\R\WM002_B IA.doc  3/5/2012 3:21 PM</p>

Figure 4

Example of a Deed Template with the Line and Annotation Featureclasses stored in a Personal GeoDatabase

Table 2

**COURSE\_STYLE\_1 Syntax**

First Course

THENCE NE 45°23'24" a distance of 1,235.00 feet

Subsequent Courses

Line followed by a Line

THENCE a distance of 150.00 feet,

Line followed by a Curve

THENCE a distance of 150.00 feet to a point of curve,

Tangent and Non-Tangent Curves followed by a Line

- a. THENCE along said curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet,
- b. THENCE along said curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet,
- c. THENCE along said *non-tangent* curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet,
- d. THENCE along said *non-tangent* curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet,

Tangent and Non-Tangent Curves followed by a Line

- a. THENCE along said curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet to a point of curve,
- b. THENCE along said curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet to a point of curve,
- c. THENCE along said *non-tangent* curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet to a point of curve,
- d. THENCE along said *non-tangent* curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet being subtended by a chord of NE 45°23'41" for a distance of 278.85 feet to a point of curve,

**COURSE\_STYLE\_2 Syntax**

First Course

THENCE NE 45°23'24" a distance of 1,235.00 feet

Subsequent Courses

Line followed by a Line

THENCE a distance of 150.00 feet,

Line followed by a Curve

THENCE a distance of 150.00 feet to a point of curve,

Tangent and Non-Tangent Curves followed by a Line

- a. THENCE along said curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34"),
- b. THENCE along said curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34"),
- c. THENCE along said *non-tangent* curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34"),
- d. THENCE along said *non-tangent* curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34"),

Tangent and Non-Tangent Curves followed by a Line

- a. THENCE along said curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34") to a point of curve,
- b. THENCE along said curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34") to a point of curve,
- c. THENCE along said *non-tangent* curve to the *left* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34") to a point of curve,
- d. THENCE along said *non-tangent* curve to the *right* having a radius of 300 feet and an arc length of 450.00 feet (the chord of said curve bears NE 45°23'41" a distance of 278.85 feet having a central angle of 135°23'34") to a point of curve,

Last Line in a Tie-Line Definition

to the POINT OF BEGINNING

Last Line in a Parcel/Traverse Definition

to the POINT OF ENDING.

Figure 5  
Deed Writer Multi-Input Dialog Box with User-Specified Values

For the <COURSE\_STYLE\_2> tag the last line in a tie-line description will be **to the POINT OF BEGINNING**, while the last line in a parcel/traverse description will be **to the POINT OF ENDING..** These lines are part the style and as such do not have to appear in the deed template.

### Sample Deed Generation

To illustrate what a [Deed Writer] legal description would look like, using the deed template shown in Figure 4, we will apply the data shown in Figure 5.

Note, if the user happens to specify a Parcel/Traverse Report File that does not exist, the warning message shown in Figure 6 will appear. Click the OK button after which the multi-input dialog box shown in Figure 5 will be re-displayed and a new filename can be specified.

Shown in Figure 7 is the result of using the data shown in Figure 5 with the deed template shown in Figure 4. At this

point, the user can edit the graphic text elements using native ArcMap functionality, after which, the deed can be printed or exported as a PDF using native ArcMap functionality.

Figure 8 contains the Parcel/Traverse Report File that was used to create the deed shown in Figure 7. In this sample there is a tie-line comprised of one course, while the traverse is comprised of six courses. As such, the Parcel/Traverse Report File contains, in total, seven course descriptions.

Given that the number of courses in a parcel or traverse will vary, it is easy to see that some editing of the text will be required. Additionally, the surveyor may wish to add additional verbiage to clarify the legal description. Using native ArcMap functionality, this is possible and since the annotation is graphic text, there is no need to start./stop an edit session which simplifies the editing process.



Figure 6  
File Does Not Exist  
Warning Message

### Parcel/Traverse Report File

As mentioned at the beginning of this publication, the Parcel/Traverse Course Report File is an ASCII based file that is created using the Define Parcel, , or Edit Parcel, , tool. These tools appear in the CEDRA-Deed-Tools toolbar.

The Define Parcel, , tool is used to create a parcel or traverse, while the Edit Parcel, , tool is used to edit a parcel or traverse. The September 2011 issue of Command of the Month discusses the Define Parcel tool in detail.

The Parcel/Traverse Course Report File is created with the Report button which appears in the low right corner of the Parcel and Traverse Course Entry Form, see Figure 9. The course data shown in Figure 9 is a reflection of the data appearing in the Parcel/Traverse Course Report File shown in Figure 8.

### Creating a Parcel/Traverse Report File

Shown in Figure 10 is a single polyline feature that represents a street centerline. Note that we could also process a series of features rather than a single polyline feature.

As an example, let us create a Parcel/Traverse Course Report File using the Edit Parcel, , tool and the polyline feature shown in Figure 10. To do so the following steps can be performed:

- 1 Click at the  |Edit Parcel| tool.
- 2 Click at any **point** on the polyline feature so as to select the polyline.

<p>Sample Deed Description  <u>BIA LEGAL DESCRIPTION</u>                  A PORTION OF ALLOTMENT #                  SECTION 15, T-18-N, R-3-W, N.M.P.M.                  SAN JUAN COUNTY, NEW MEXICO</p>
<p><b>Centerline Description</b>                  An easement, forty-five feet (45') in width, located in the Southwest Quarter of the Northeast Quarter of Section 15, Township 18 North, Range 3 West, of the New Mexico Principal Meridian, San Juan County, State of New Mexico, the centerline of which is described as follows:  <b>BEGINNING</b> at a point located in said Southwest Quarter of the Northeast Quarter, which bears SW 48°14'56" a distance of 2,165.08 feet, from a 2.5" Brass Cap found for the Northeast Corner of said Section 15,</p>
<p>THENCE SE 22°17'20" a distance of 11.58 feet,                  THENCE NE 67°54'0" a distance of 82.54 feet,                  THENCE SE 53°48'27" a distance of 12.66 feet,                  THENCE SE 6°7'52" a distance of 382.22 feet,                  THENCE SE 7°13'26" a distance of 465.55 feet,                  THENCE SE 6°30'5" a distance of 372.85 feet,</p>
<p>to a point on the South Line of said Southwest Quarter of the Northeast Quarter which is the POINT OF ENDING for this description, from which a 2.5" Brass Cap found for the East Quarter Corner of said Section 15 bears S 89°52'09" E a distance of 1,407.77 feet</p> <p><b>CONTAINING:</b>        1,327.40 feet, 80.45 rods and 1.37 acres +/-</p>
<p>This is to certify that I am a Licensed Professional Surveyor in the State of New Mexico, that the above description was prepared from field notes of an actual survey made by me or under my direction, and meets the Minimum Standards for Surveying New Mexico.</p>
<p>BA SIS OF BEARINGS: AS MEASURED BETWEEN FOUND MONUMENTS AT THE NORTHEAST CORNER AND THE QUARTER CORNER OF SECTION 1 T-27-N, R-9-W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO. LINE BEARS: S 0°32'46" E A DISTANCE OF 2,644.51'</p> <p>Plot Drawing: RWM002.blk1.mxd                  C:\TMP\RWM002_BIA.doc                  3/5/2012 3:21 PM</p>

Figure 7  
 Example of the Deed Template when the Deed Tags have been evaluated

Parcel Course Report File

Parcel ID: 1

Course Number	Direction	Distance	Radius	Tangent Curves			Non-Tangent Curves		
				Arc Length	Chord Length	Central Angle	Arc Length	Chord Length	Central Angle
1	SW 48 14 56.0	2165.0800	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	SE 22 17 20.0	11.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	NE 67 54 00.0	82.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	SE 53 48 27.0	12.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SE 06 07 52.0	382.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	SE 07 13 26.0	465.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	SE 06 30 05.0	372.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Distance to Close=1227.42583    DX=1220.95354    DY=125.88335    NW 84 6 48.5

Total Length=1327.40

Error of Closure 1:1

Tie-Line Start Bearing=SW 48 14 56.0  
 Tie-Line Start Distance=2165.0800  
 Tie-Line End Bearing=SW 48 14 56.0  
 Tie-Line End Distance=2165.0800  
 Parcel/Traverse Start Bearing=SE 22 17 20.0  
 Parcel/Traverse Start Distance=11.58  
 Parcel/Traverse End Bearing=SE 06 30 05.0  
 Parcel/Traverse End Distance=372.85  
 Number of Tie-Lines=1

Figure 8  
Sample Parcel/Traverse Course Report File

Course Number	Direction	Distance	Tangent Curves				Non-Tangent Curves				
			Radius	Arc Length	Chord Length	Central Angle	Chord Direction	Arc Length	Chord Length	Central Angle	
1	SW 48 14 56.0	2165.0800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	SE 22 17 20.0	11.58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	NE 67 54 00.0	82.54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	SE 53 48 27.0	12.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SE 06 07 52.0	382.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	SE 07 13 26.0	465.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	SE 06 30 05.0	372.85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Par X (+ Right, - Left): 
 Par Y (+ Up, - Down): 
 Zoom (> 1 In, < 1 Out): 
 # Tie-Line Courses:

Total Length=1327.40000
 Distance to Close=1221.83459
 DX=232.66566
 DY=1199.47757
 NW 10 58 38.9
 Error of Closure 1:1

Figure 9 - Parcel and Traverse Course Entry Form

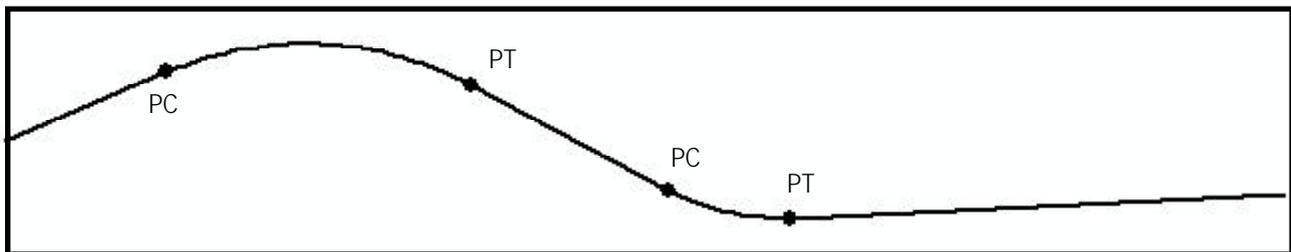


Figure 10 - Sample Polyline Feature with two Curves

Found Record 34 - g-dem02  
 Is this the feature you selected?

Figure 11

Seed Element Confirmation Query

The element confirmation query box shown in Figure 11 will appear.

- 3 Click at the:
  - **Yes**, to confirm the selection of the feature and proceed to the next step.
  - **No**, to indicate that another feature is to be searched for using the coordinates of the pick made in the previous step.
  - **Cancel**, to abort the command.
- 4 Scroll down in the *Editing Mode*: choice list, and **select** the appropriate of the following options:

Select the data type to be edited:

Editing Mode:

Figure 12

Editing Mode of Operation Choice List

- **Polyline Courses with Table**, to indicate that a polyline feature was selected and that the Parcel and Traverse Course Entry Form is to be displayed with each segment in the polyline constituting a record in the table.
- **String Courses with Table**, to indicate that the command is to find all features connected to the seed feature and display the Parcel and Traverse Course Entry Form with each feature

in the string constituting a record in the table.

- 5 Click at the **OK** button to display the Parcel and Traverse Course Entry Form, or **click** at the **Cancel** button to abort the command.

In the case of our example shown in Figure 10, we would select the Polyline Courses with Table option in Step 4.

Lines				Tangent Curves			Non-Tangent Curves			
Course Number	Direction	Distance	Radius	Radius and 1 of the other 3			Chord Direction, Radius and 1 of the other 3			
				Arc Length	Chord Length	Central Angle	Chord Direction	Arc Length	Chord Length	Central Angle
1	NE 66 45 59.2	150.26554	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	300.000	0.0	0.0	0.0	SE 87 34 5.8	0.0	0.0	51.331
3	SE 61 54 10.8	191.41718	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	-200.000	0.0	0.0	0.0	SE 77 18 21.8	0.0	0.0	30.806
5	NE 87 17 27.1	423.40448	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Par X (+ Right, - Left):  Par Y (+ Up, - Down):  Zoom (> 1 In, < 1 Out):  # Tie-Line Courses:

Total Length: 1141.38713 Closure Distance: 0.00000 Error of Closure: 0.00000

Figure 13 - Parcel and Traverse Course Entry Form with Populated Data

Shown in Figure 13 is the Parcel and Traverse Course Entry Form containing the data that was computed using the polyline feature shown in Figure 10. At this point, the user is able to manipulate the data as desired.

Selecting the Draw button will result in the command, drawing in the color red, the parcel or traverse as defined within the form.

To create the Parcel/Traverse Course Report File, simply click on the Report button. The traditional Windows navigation dialog box will appear enabling the user to specify the name of the file to be created.

## Notes

- All Deed Tags must appear in uppercase characters. Lowercase or a mix of lower and uppercase characters are not supported.
- The conversion 1 rod = 16.5 feet is used when creating the text for the length or perimeter value of the parcel/traverse in terms of rods.
- It is possible to copy the text of a graphic text element to the Windows buffer and paste it in another Windows application, such as Word. To do so, simply right-click on the appropriate graphic text ele-

ment and select the Properties... menu item. The Properties window will then appear with the text highlighted. The <Ctrl>-C keystroke will copy the highlighted text to the Windows buffer. The <Ctrl>-V keystroke will paste the text in Word or most any other Windows based application.

- The graphic text element created as a result of using the tags:
 

```
<COURSE_STYLE_1>
<COURSE_STYLE_2>
```

 is a single entity. That is to say, it is a single text element that happens to contain several lines of text, a multi-line text string if you will.

## Summary

Although not a common GIS application, this issue demonstrates how GIS can be extended to produce a legal description. The use of tags is a good way of generalizing a deed template. In so doing, the user is able to customize the deed template to meet their own specific requirements.

Although only two different styles of course descriptions are offered at this time. We encourage suggestions on other course description styles.

The implementation of the [Deed Writer] command is a recent addition to the soft-

ware. Users with a software support agreement should check with The CEDRA Corporation on how to obtain a software update so as to be able to utilize this new functionality.

As always, users who have a need for functionality that is not presently available in CEDRA software should feel free to forward these requests to CEDRA, as well as, any other comments or suggestions you may have.

*If you have a request for Command Of The Month, feel free to phone, fax or e-mail your request to The CEDRA Corporation.*