Angle Offset, Bearing Deflection, and Distance Unit
SDK sample Add-In

ArcGIS Parcel Editor Development Team
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Overview

This Add-in is used for:
- Entering parcel lines where the angle between parcel lines is known, but the bearing or direction of the lines are not present on the original record.
- Entering distances for a line where the out-of-the-box unit over-rides do not include support for a specific distance unit.

The parcel editor lines grid entry has its distance units defined as part of the plan properties. There are occasions when a different unit is required for one of the entered lines for a new parcel. The released software has a series of overrides that allow you to enter these values directly, overriding the plan's units. By typing the appropriate unit abbreviation after the value, you can convert the entered value into the plan's units.

This add-in provides a way to enter distance values for units that are not supported, and to use a short-cut key to apply a factor that you've defined and stored with the Plan.

Similarly, there are times when you do not have a line's bearing, but you have an interior angle between 2 lines, or else a deflection angle from the previous traverse course. In these cases there is presently no over-ride in the Parcel Editor to enter angles to easily compute the bearing of the next traverse course. This add-in provides a way to enter angles when the Plan's property has been set to one of the bearing formats.

Installation

This Add-In is called AngleDeflectionAndOffset.esriAddIn.esriAddIn. To install this Add-In you can do one of the following:
- Double-click on the file from the *Install* directory to install it for use on your individual machine.
- Copy the file to a shared folder used by your organization and then reference that folder through the Options tab on the Add-In Manager dialog. Deploying the Add-In this way will make it accessible to anyone that can get to the shared folder.
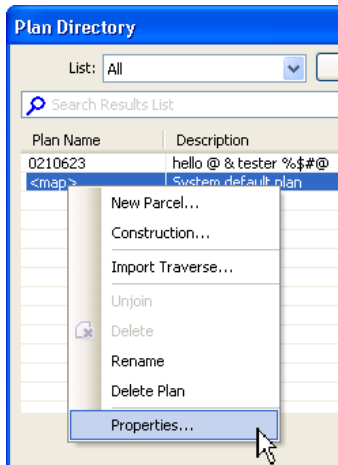
After installing the Add-in, the angle offset and deflection overrides will be available immediately. If you'd like to use the custom distance unit setting, some further setup is required, and is described in the following section.

Using the Distance Unit Over-ride

With this Add-in installed the "z" key can been used as an over-ride key that applies a custom unit that you've entered for a plan. To use this key, you will need to configure the Plans table in your fabric to hold the unit conversion information. Open the properties of the Plans table, and add a field with type [double] and call it "UnitsPerMeter":

| Field Name	Data Type
AngleUnits	Long Integer
AreaUnits	Long Integer
DistanceUnits	Long Integer
DirectionFormat	Long Integer
LineParameters	Long Integer
DistanceAtGround	Long Integer
CombinedGridFactor	Double
TrueMidBrg	Long Integer
Accuracy	Long Integer
InternalAngles	Long Integer
SystemStartDate	Date
UnitsPerMeter	Double

For any plan that you'd like to have a custom value available, you can add the unit conversion factor into this field, by accessing the Plan's properties:

Plan Directory

List: All

Search Results List

Plan Name	Description
0210623	hello @ & tester %$#@
<map>	System default plan

- New Parcel…
- Construction…
- Import Traverse…
- Unjoin
- Delete
- Rename
- Delete Plan
- Properties…

For example, if you'd like to enter values in units of *vara* as used defined in Texas, then based on the information that 1 meter = 1.181 1 vara [Texas], you can enter the following into an existing plan or into new plan:
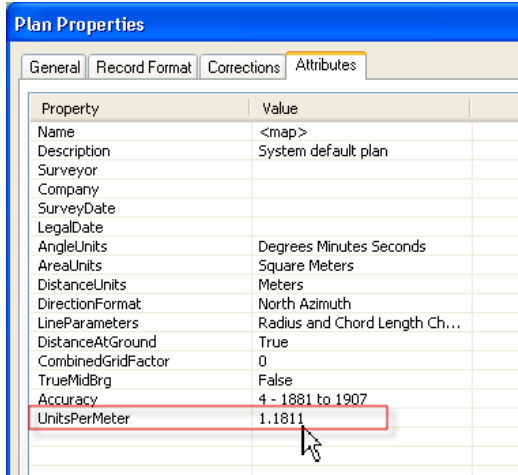
Once this has been configured, then the "z" key can be used as follows:
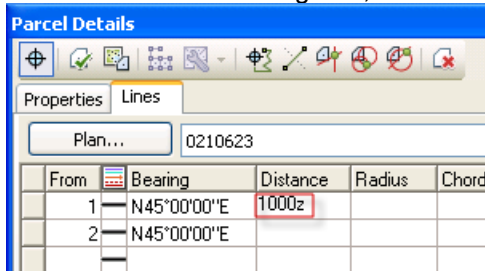
In this example the plan distance units are in US Survey Feet. Entering 1000 vara by typing "1000z", and hitting the Enter key, the 1000 vara is converted on the fly into the US Survey Feet equivalent:
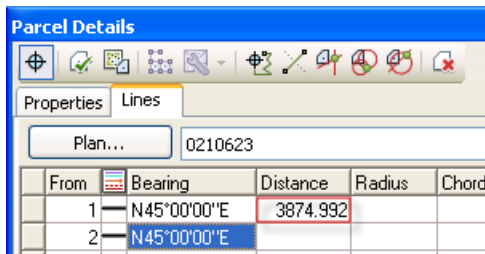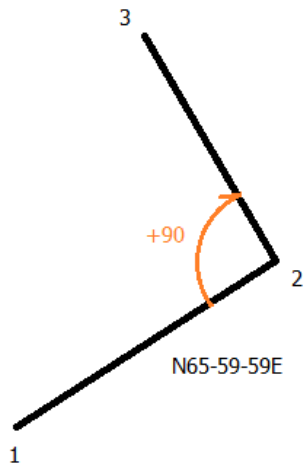

Using the Angle Offset Over-ride

The add-in provides 2 methods for adding an angle to a new line based on the bearing of an existing line:
1. Angle Offset
2. Bearing deflection

This section describes how to use Angle offset. The Angle Offset method uses the previous line as a back-sight and makes use of the "+" and "-" keys. For example, if I need to apply a 90 degree turn from the previous line, you can use a "+90" or "-90". The angles are turned positive clockwise from the back-sight line. The back-sight line is the previous line's bearing +180 degrees.

The following figures show two examples. In these cases the plan's Bearing format is set to Quadrant Bearing, in degrees minutes and seconds.
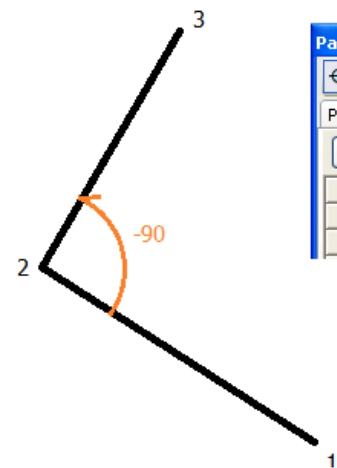
Using the Bearing Deflection Over-ride

The add-in provides 2 methods for adding an angle to a new line based on the bearing of an existing line:
1. Angle Offset
2. Bearing deflection

This section describes how to use the Bearing deflection over-ride. The Bearing deflection calculates a new bearing by adding or subtracting an angle from the last line's forward bearing. Makes use of the "d+" and "d-" key sequence. For example, if you need to add a 10 degree 55 minute and 47 seconds deflection from the previous line, you can use "d+10-55-47" in the bearing field, and the new bearing will be computed by adding the value to the bearing of the previous line.

The following figures show 2 examples where the plan's Bearing format is set to Quadrant Bearing, in degrees minutes and seconds, and where an angle is being added and subtracted from the previous line's bearing.