

Parcel Editing with COGO Tools in QGIS

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COGO TOOLS IN QGIS

PROBLEM AND ANALYSIS

Transfers of real property typically involve a Metes and Bounds description:

Commencing at Southeast corner of Section 1, Town 2 North, Range 11 West, Martin Township, Allegan County, Michigan; thence North 88 degrees 32 minutes 05 seconds West 1338.44 feet along the south line of said section to the point of beginning; thence North 01 degrees 27 minutes 55 seconds East 388 feet; thence South 88 degrees 32 minutes 05 seconds East 584 feet, more or less, to the centerline of the Gun River; thence southerly along said centerline to the south section line; thence West along said section line to the point of beginning.

Figure 0.1: Description From Deed

Background

In GIS, *Coordinate Geometry* or **COGO** tools convert written descriptions of real property into digital map features.

Users in several county departments use COGO tools in their regular workflow.

In the past ACGIS provided COGO tools from the MapInfo Suite.

Statement of Problem

A tool is needed to convert between written descriptions of real property and digital map data.

MapInfo is no longer supported within the county.

The COGO tools in ArcGIS require an advanced license.

Analysis

QGIS is an open source software that provides a COGO toolset.

The Azimuth and Distance Plugin provides the COGO functionality in QGIS.

QGIS works in shapefiles, a common GIS data type.

Following are instructions for using QGIS for COGO

To use COGO tools in QGIS, follow these steps

Step 1:

Launch and Configure the Azimuth and Distance Plugin



Figure 0.2: COGO Icon

*This tool draws in a temporary layer or in an active map layer.

Select **traverse1** as active layer in the tool.

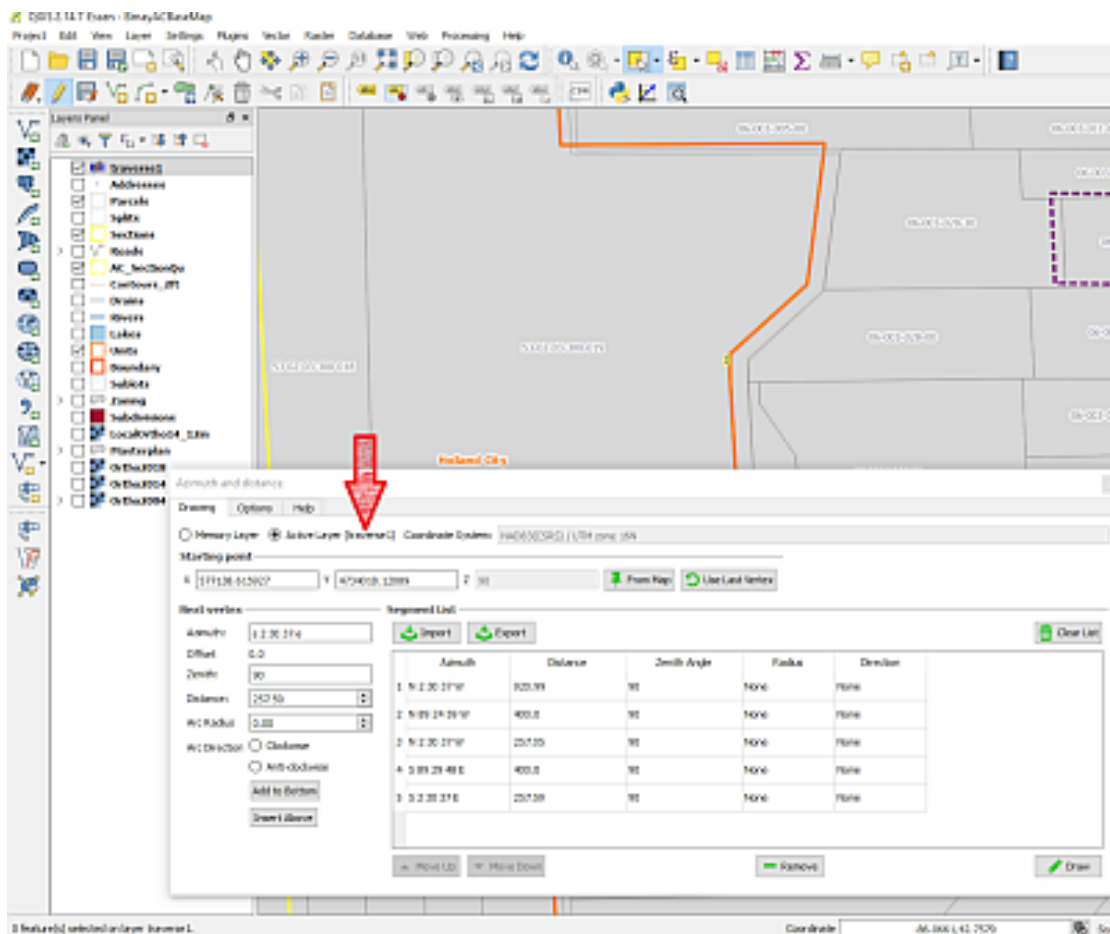


Figure 0.3: Check Active Layer

Configure Options in Plugin

On the **Options Tab**: Select these radio buttons;

- Boundary
- Bearing
- Feet
- Degree

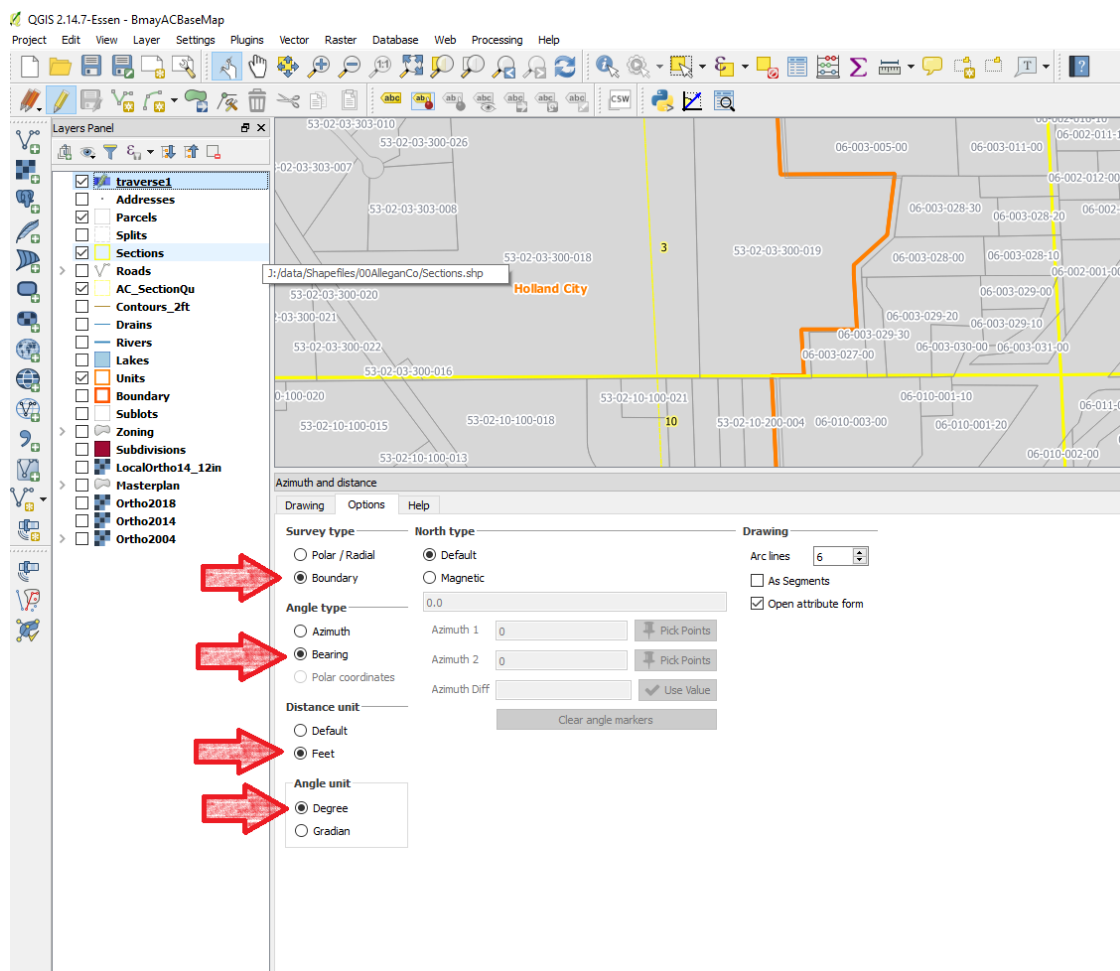


Figure 0.4: Plugin Options

Step 2: Activate traverse layer in map

*For a map layer to be editable, it must be activated in the Layers Panel.

(If necessary) left click the layer *traverse1* in Layer Panel to activate it.

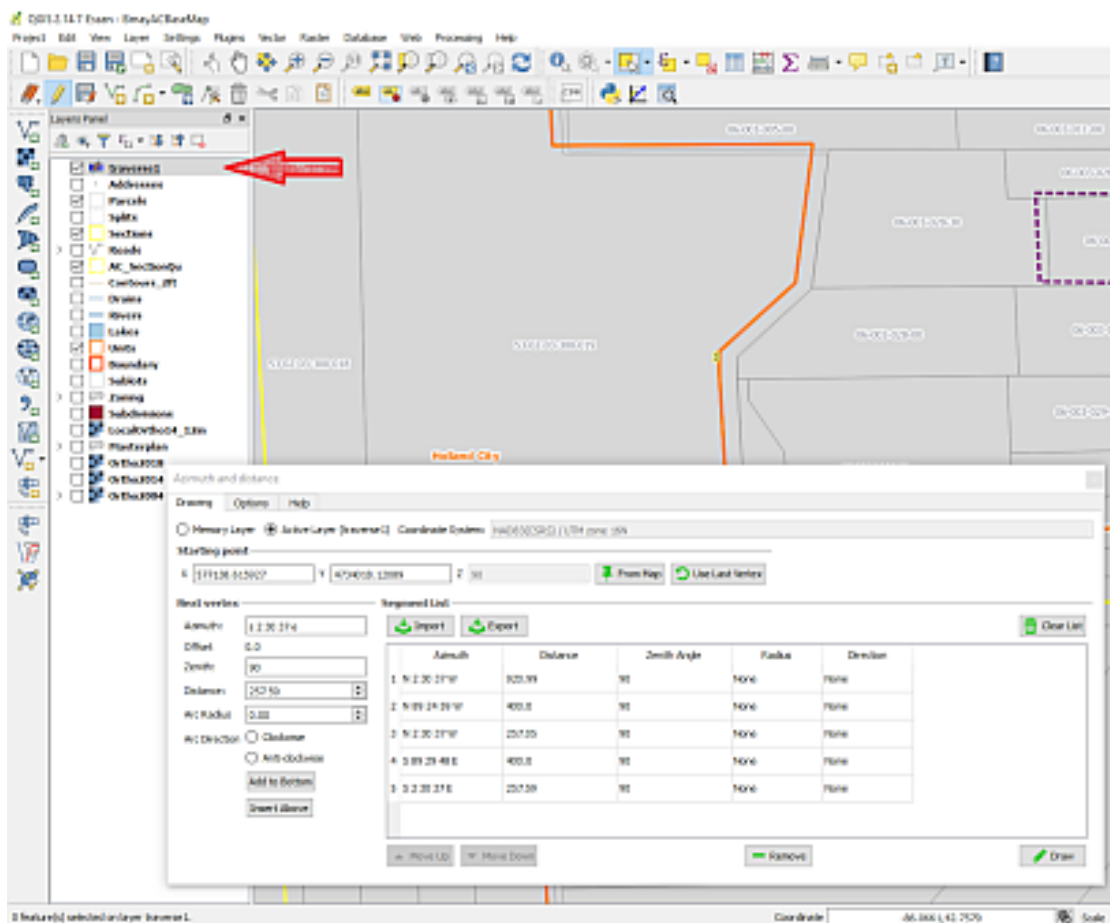


Figure 0.5: activate layer

Step 3: Locate the Point of Commencement

To get to the Point of Commencement,

Use **any combination** of the following methods:

- Use Reference Layers such as; Units, Quarter Sections, Sections, and Parcels.

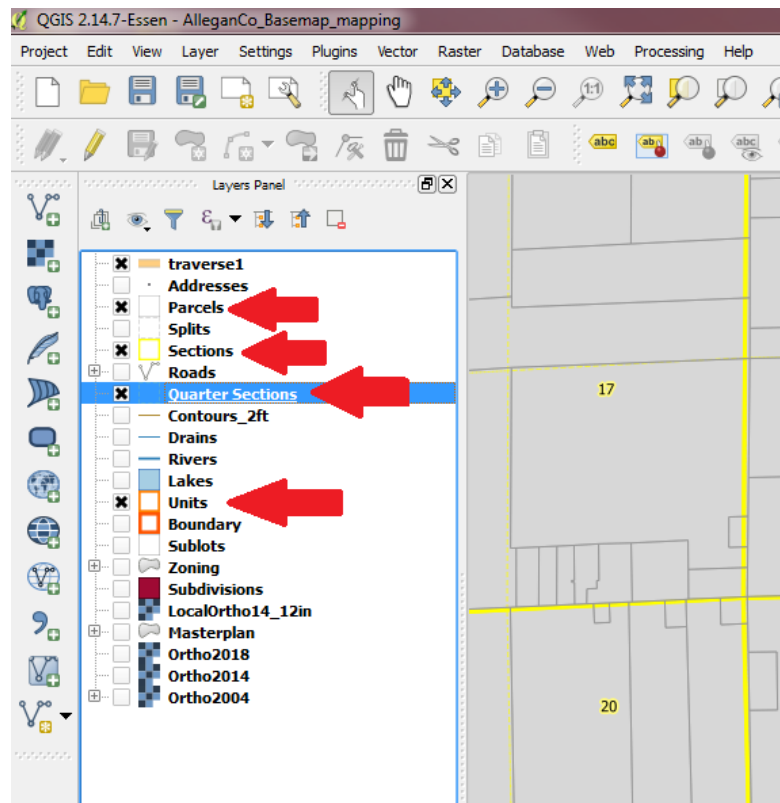


Figure 0.6: Select Reference Layers

- Using Measuring Tool to estimate a point of beginning

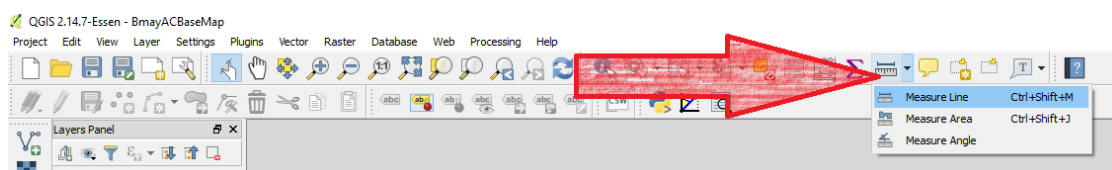


Figure 0.7: Measuring Tool

- Search by Parcel Number (Search Layers Plugin)



Figure 0.8: Search Layer Icon

- Draw COGO lines (Azimuth and Distance Plugin)

Step 4: Draw With Azimuth and Distance

On the **Drawing Tab**:

- Azimuth (bearing): Enter Bearing in format: *N 2 30 37 W*
- Distance: Enter Feet Distance in numbers only
- Offset: Set to *0*
- Zenith: Set to *90*

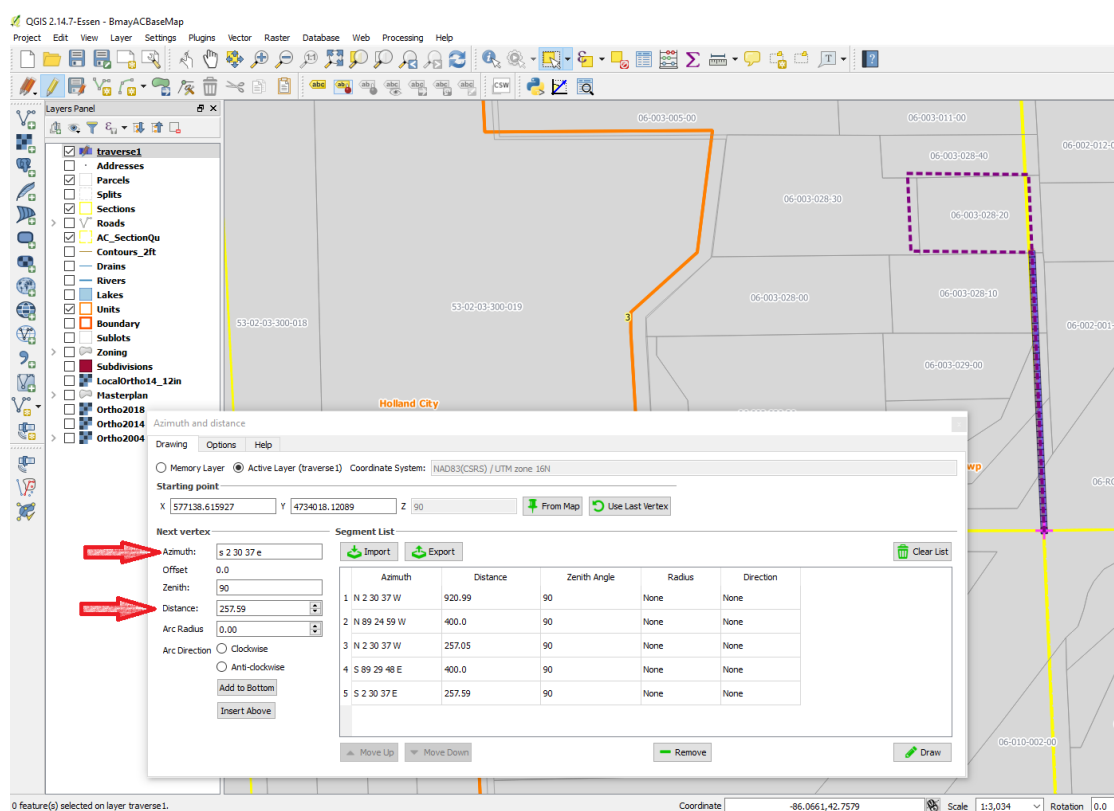


Figure 0.9: Entering Bounds