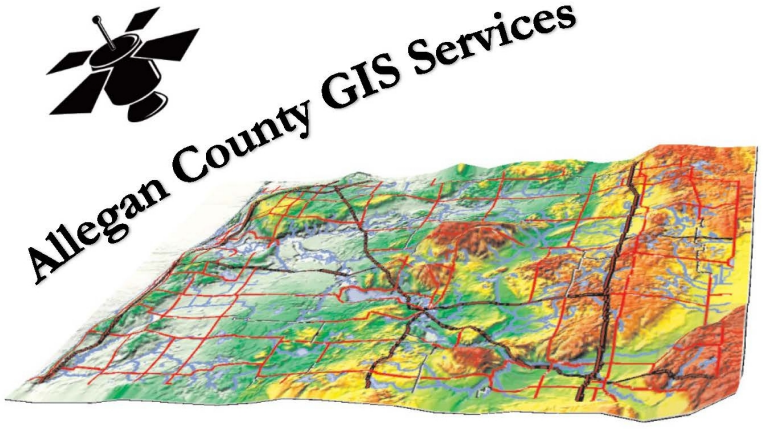

What We Do

Allegan County GIS
www.allegancounty.org/gis

July 26, 2018

Contents

Part I

Brand

Chapter 1

Awards

1.1 The GIS Champion Award

1.1.1 GIS Champion Award Code

```
\documentclass[landscape]{article}
\usepackage{wallpaper}
\usepackage{niceframe}
\usepackage{xcolor}
\usepackage{ulem}
\usepackage{graphicx}
\usepackage{geometry}
\geometry{tmargin=.75cm,bmargin=.25cm,lmargin=.8cm,rmargin=.2cm}
\usepackage{multicol}
\setlength{\columnseprule}{0.4pt}
\columnwidth=0.3\textwidth

\begin{document}

%\TileWallPaper{4cm}{2cm}{CoLogo133x200.png}

\centering
\scalebox{3}{\color{green!30!black!60}
\begin{minipage}{.33\textwidth}
\font\border=umrandb
\generalframe
{\border \char113} % up left
{\border \char109} % up
{\border \char112} % up right
{\border \char108} % left
{\border \char110} % right
```

```
{\border \char114} % lower left
{\border \char111} % bottom
{\border \char115} % lower right
{\centering

\includegraphics[height=1.25cm]{GIS_Logo_better.jpg}
%\end{minipage}
\vspace{-8mm}

\curlyframe[.9\columnwidth]{

\textcolor{red!10!black!90}
{\small Allegan County GIS Services}\\
\textcolor{green!10!black!90}{
\tiny recognizes}

\\
\uline{\textcolor{black}
{Ian Hanes}}
\\
\smallskip
\tiny Chief Equalization Technician
\smallskip

\textcolor{green!10!black!90}
{
\tiny as a
}
\smallskip
\tiny
\\
\textcolor{black}{\large \textsc{GIS Champion}}
\\
\vspace{1mm}
\textcolor{green!10!black!90}
{
\tiny for outstanding dedication and service to the community
\\while using GIS technology on this day
\itshape June 29, 2018
}
\vspace{3mm}

{\color{blue!40!black}
\scalebox{.6}{

\begin{tabular}{ccc}
```

```
\cline{1-1}
%\cline{2-2}
\cline{3-3}
%\cline{4-4}
%\cline{5-5}
\\
Neil Besteman  & &  Bryan May \\
GIS Manager & & GIS Analyst \\
\end{tabular}
}}}}
\end{minipage}

}
\end{document}
```

Part II

Methods

Chapter 2

Documentation

2.1 About Documentation

2.1.1 How This Book Works

Project General Notes:

- Book folder can be renamed an moved.
- This project is coded with relative paths from processing folder down.

Project file structure:

`J:\LIS\GIS_Doc\book\build`

pdf docs created by the underlying .tex docs and copied here manually.

`J:\LIS\GIS_Doc\Book\source`

images that appear in

`\GIS_Documentation.tex`

`J:\LIS\GIS_Doc\Book\processing`

the Tex workspace.

`\GIS_Documentation.tex`

top level of documentation of type "book" in LaTeX. Where book properties and book parts are managed and chapters are imported.

`\archive`

archive copies of entire processing folder.

`\brandPart`

LaTeX "book part" about the brand.

`\methodsPart`

LaTeX "book part" about the methods.

`\servicePart`

LaTeX "book part" about services.

`\build`

folder for temp docs when created by compiling of:

```
GIS_Documentation.tex
```

*** Note: each level from here down has a build folder for temp Latex files like this.**

Service Book Part Detail

relative path:

`\processing\servicePart\toolsChapter.tex`

intermediate level of "book" in LaTeX. Where (service part, tool) chapter properties are managed and sections are imported.

toolsChapter

relative path:

`\processing\servicePart\toolsChapter`

intermed level of "book" in LaTeX. Where book section properties are managed and subsections are imported.

2.2 Document Storage Concepts

2.2.1 GIS File Standard

Folders inside the project folder

- archive
- build
- delivered
- documentation
- processing
- source

2.3 Team Concept

2.3.1 Paired Programming

some point about pp

Part III

Service

Chapter 3

Tools

3.1 ESRI Tools

3.1.1 COGO Tools in ArcGIS

TEXT

3.1.2 Forfeiture Data Collection

Problem and Analysis

Design

Hard Copy Record

User Manual

Software

3.2 LaTeX Packages used by AC GIS

3.2.1 float Package

usepackage

```
text
```

Simple Use

```
text
```

Options

```
text
```

Add optional arguments to the usepackage line:
Useful options:

- **OPTION NAME**
  OPTION NOTE
- **OPTION NAME**
  OPTION NOTE

Use with options

```
text
```

Commands

3.2.2 graphicx Package

usepackage

```
text
```

Simple Use

```
text
```

Options

```
text
```

Add optional arguments to the usepackage line:
Useful options:

- **OPTION NAME**
  OPTION NOTE
- **OPTION NAME**
  OPTION NOTE

Use with options

```
text
```

Commands

3.2.3 hyperref Package

Introduction

Official hyperref package documentation
Note: Add the *hyperref package* to the preamble **last**.

```
\usepackage[options]{hyperref}
```

Simple Use

```
Use \href{URL}{DESCRIPTION} to add a link with description

\href{https://www.latex-tutorial.com}{Website with tutorials}
produces:
```

Website with tutorials

Options

Add optional arguments to the usepackage line:
Useful options:

- **pdftex**
  enables other options like breaklines
- **breaklinks**
  allow links to be broken across several lines
  eg. https://lists.gnu.org/archive/html/emacs-orgmode/2013-06/msg00776.html
- **colorlinks**
  Colors the text of links and anchors.(default is false)
- **linkcolor**
  Color for normal internal links(default is red).
- **anchorcolor**
  Color for anchor text.
- **citecolor**
  Color for bibliographic citations in text.
- **urlcolor**
  Color for linked URLs

Use with options

```
\usepackage[breaklinks,colorlinks,citecolor=blue,
urlcolor=green]{hyperref}
```

Commands

`\href{URL}{text}` Makes text a link to URL.

To put a file path in text:

eg:

Official hyperref package documentation

(documentation Pt.4 pg.15)

`\href[options}{URL}{text}`

Options:

- absolute

```
\href{C:/AC/jalapeno/documentation/packageDocs/hyperref2017.pdf}
    {Official hyperref doc}
```

- relative **Note: relative path must be from final pdf location**

```
\href{../../../../../documentation/packageDocs/hyperref2017.pdf}
    {Official hyperref package doc}
```

*This path works from main document

```
\href{../../documentation/packageDocs/hyperref2017.pdf}
    {Official hyperref package documentation}
```

*This path works from subsection document

```
\hyperref[label]{text}
    Makes text a link to where \ref{label} would point.

\hypertarget{name}{text}
    Sets an anchor on text with the label name.

\hyperlink{name}{text}
    Makes text a link that takes you to the anchor labeled name.
    *Pair with \hypertarget.

\phantomsection
    Used in conjunction with

\addcontentsline
    to make the correct link in the Table of Contents.
```

3.2.4 import Package

usepackage

```
text
```

Simple Use

```
text
```

Options

```
text
```

Add optional arguments to the usepackage line:
Useful options:

- **OPTION NAME**
  OPTION NOTE
- **OPTION NAME**
  OPTION NOTE

Use with options

```
text
```

Commands

3.2.5 standalone Package

Introduction

Link to official standalone documentation
standalone provides a **package** and a **class**

- The *standalone* **package** is used for:
  - Main documents that will input or import sub documents.
  - For example:

    ```
    \usepackage[subpreambles=false]{standalone}
    ```

    * Ignores preambles of imported sub documents [1, pg.4]
- the *standalone* **class**:
  - Is a document class
  - Provides standalone / subdocument switches and options
  - For example:

    ```
    \documentclass[class=article]{standalone}
    ```

    * behaves as an article when standalone
    * makes document available for import into a master document

Simple Use

- The *standalone* **package**
  - In the main document:

    ```
    \documentclass[openany]{book}

    \preamble...

    \usepackage{standalone}
    ```
- the *standalone* **class**:
  - In any subdocument:

    ```
    \documentclass[class=article]{standalone}

    \preamble...
    ```

Options

- The *standalone* **package**
  - **subpreamble**
    - default value of subpreambles is *false*
- the *standalone* **class**:
  - **crop**
  - **titlepage**
  - **twoside**
    - Makes pagination style match book
    - default value is *false*
  - **multi**
    - `multi=true|false`
    - `multi={<environment name>, ...>}`
  - **float**

Use with options

- the *standalone* **package**:
  - `\usepackage[subpreambles=false]{standalone}`
- the *standalone* **class**:
  - ```
    \documentclass[class=article , crop=false,
        titlepage, twoside,
        multi={itemize, figure, verbatim},
        float=false]{standalone}
    ```

Commands
    ```

3.2.6 wrapfig Package

usepackage

text

Simple Use

text

Options

text

Add optional arguments to the usepackage line:
Useful options:

- **OPTION NAME**
  OPTION NOTE
- **OPTION NAME**
  OPTION NOTE

Use with options

text

Commands

3.3 LaTeX Templates

3.3.1 LaTeX Section Template

```
%\documentclass[class=report , crop=false, multi={itemize, figure}, float=false]{standa
\documentclass[class=book , crop=false]{standalone}

\input{../../../preamble}

\def\titlename{Section Template}

\title{\input{../../../commonTitle}}  % closing brace for title

\begin{document}% Document Begins

\input{../../../commonFront} % provides standalone options
```

```
\section{SECTION NAME HERE}

\subimport{RELATIVE PATH TO NEW Section/}{NEW SUBSECTION Subsection.tex}

%eg.
%\subimport{latexTemplatesSection/}{subsectionTemplateSubsection.tex}
% etc...

\end{document}
```

3.3.2 LaTeX Subsection Template

```
\documentclass[class=book , crop=false]{standalone}

\input{../../../preamble}

\def\titlename{Subsection Template}

\title{\input{../../../commonTitle}}  % closing brace for title

\begin{document}% Document Begins

\input{../../../commonFront} % provides standalone options

% NEW INFO GOs HERE.
\subsection{Subsection Template}
\medskip
```

3.4 QGIS Tools

3.4.1 Using COGO Tools in QGIS

Set up the Azimuth and Distance Plugin
(Azd Plugin).

In the Plugins drop down(1), under the topography group select the **Azd Plugin(2)**(see fig.).

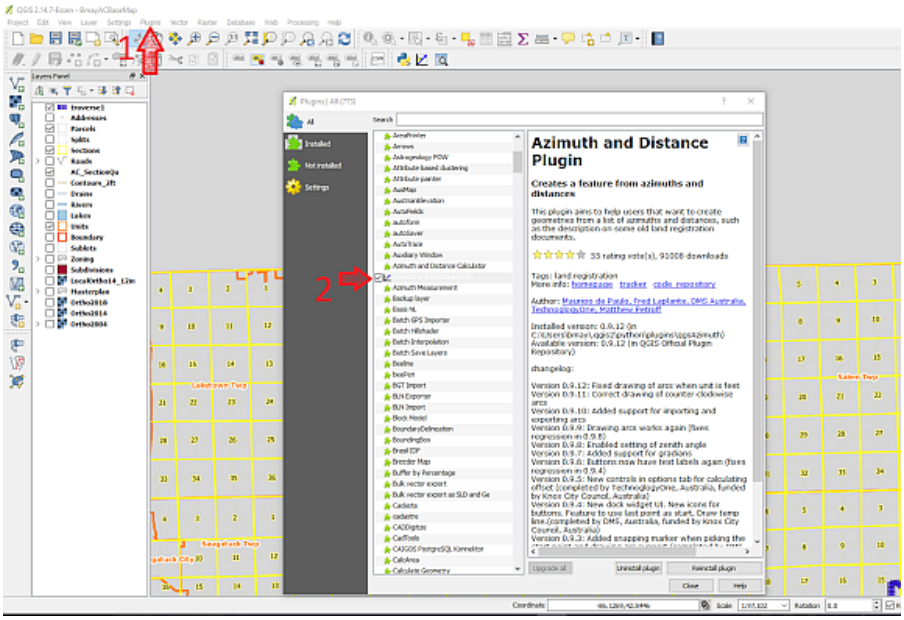

Figure 3.1: launch plugin

Note here which layer is active (see fig.).

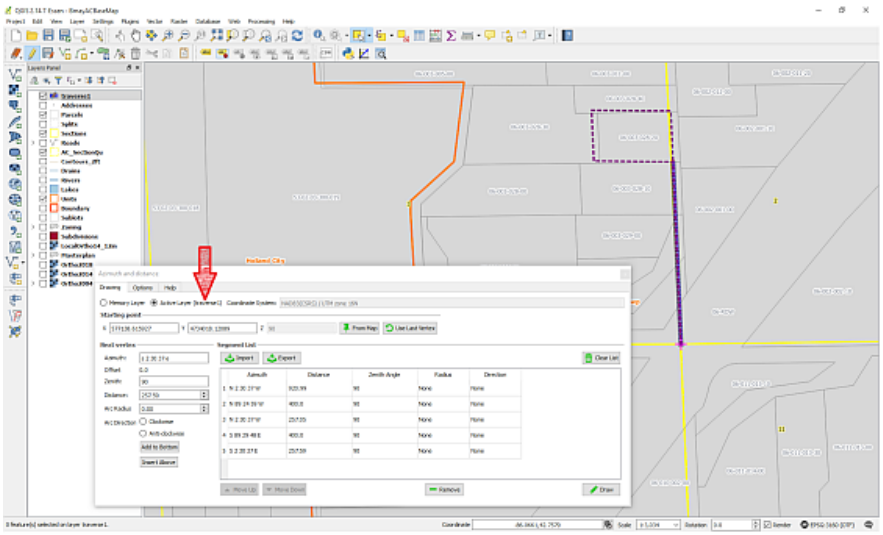

Figure 3.2: check active layer

If necessary, left click the layer ***traverse 1*** in Layer Panel to activate it(see fig.).

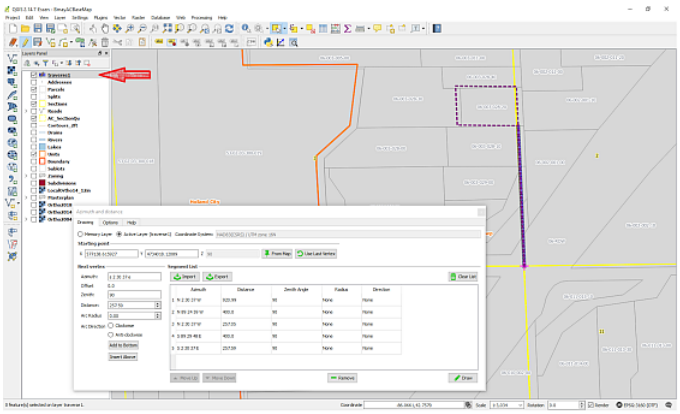

Figure 3.3: activate layer

Configure Options On Options Tab: Select Boundary, Bearing, Feet, and Degree radio buttons.

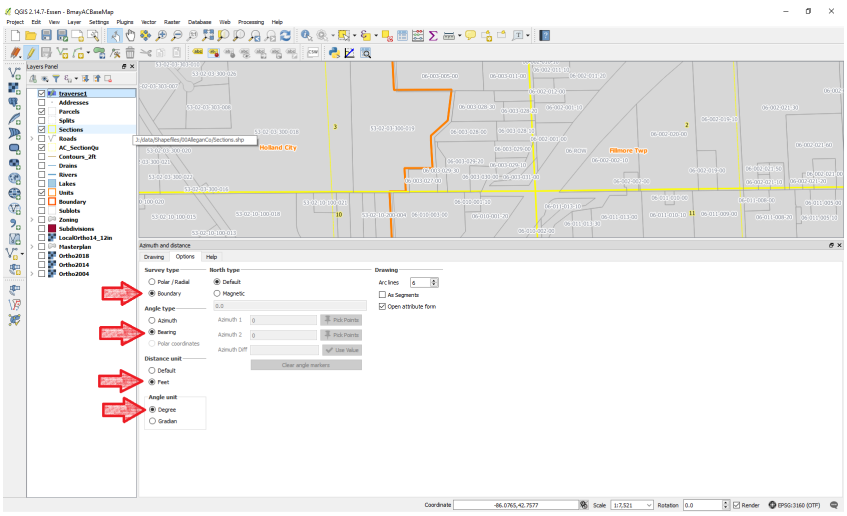

Figure 3.4: Plugin Options

Using the tool Boundary descriptions are entered into the Drawing Tab. Azimuth (bearing) and Distance are the important boxes (Set Offset = 0 and Zenith = 90 and ignore)(see below).

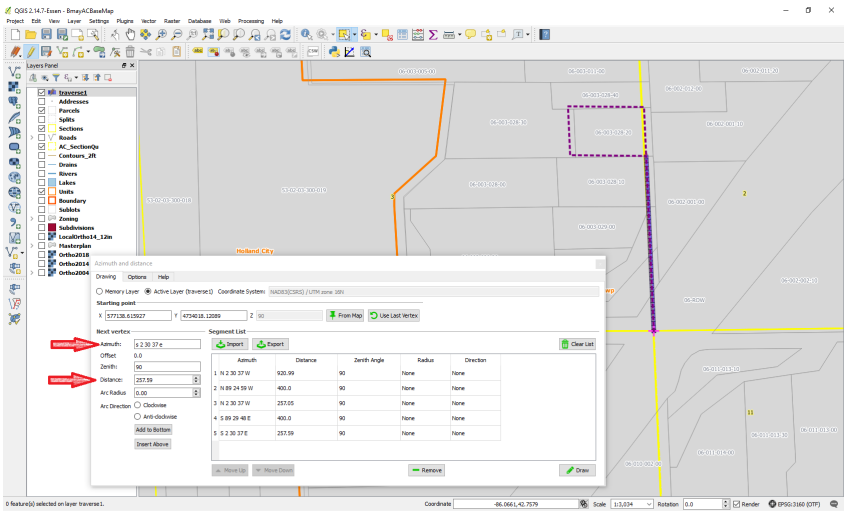

Figure 3.5: Entering Bounds

Configure editing environment

Use Settings Dropdown and Snapping Options to enable snapping to Sections, Quarter Sections, and or Parcels if desired (see fig.).

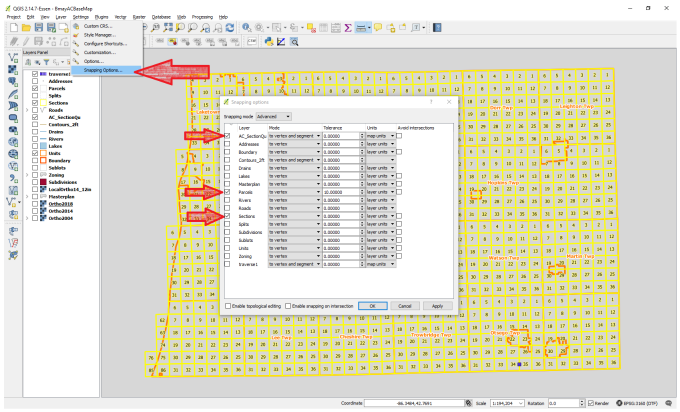

Figure 3.6: Configure editing environment

Locate Point of Commencement

To get to the Point of Commencement,

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

- Using Reference Layer
- Using Measuring Tool
- Search by Parcel Number (Search Layers Plugin)
- Draw COGO lines (Azd Plugin)(as described earlier)

Using Reference Layer Use reference layers; Units, AC_SectionsQu, Sections, and Parcels. Toggle layers on and off in Layers Panel and zoom in and out with mouse wheel.

Using Measuring Tool Use the measuring tool, make sure to set units to feet. To exit current measurement right click (see fig.).

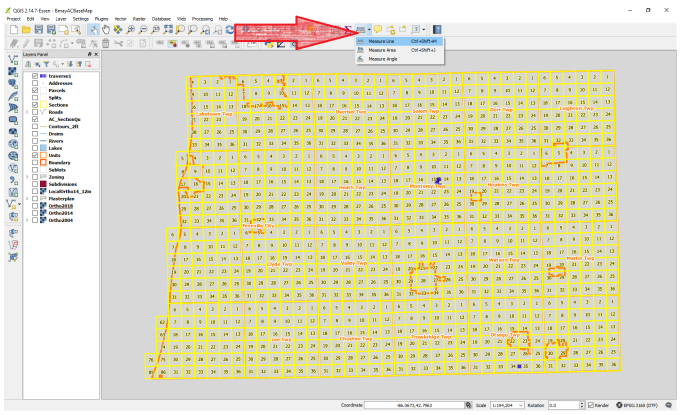

Figure 3.7: Measuring Tool

Search by Parcel Number (Search Layers Plugin.)

To Launch Search Layers Plugin:
In Plugins dropdown:
Enable the **Search Layers** Plugin. (see fig.)

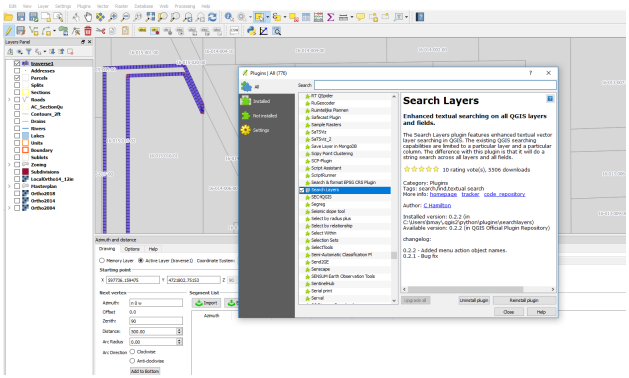

Figure 3.8: Search Layers Plugin

Enter parcel number (with dashes), Set layers, and set search field.(see fig.)

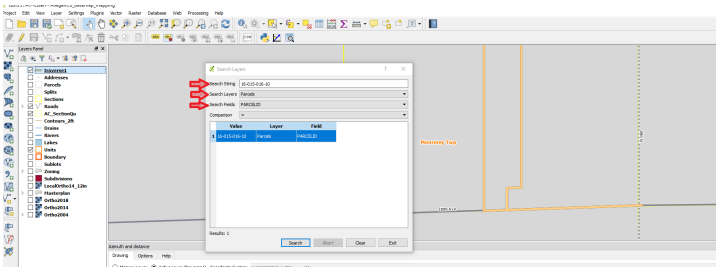

Figure 3.9: Search Layers Setup

References

[1] Martin Scharrer, *The standalone package*, CTAN, 1.3a ed., 03 2018.