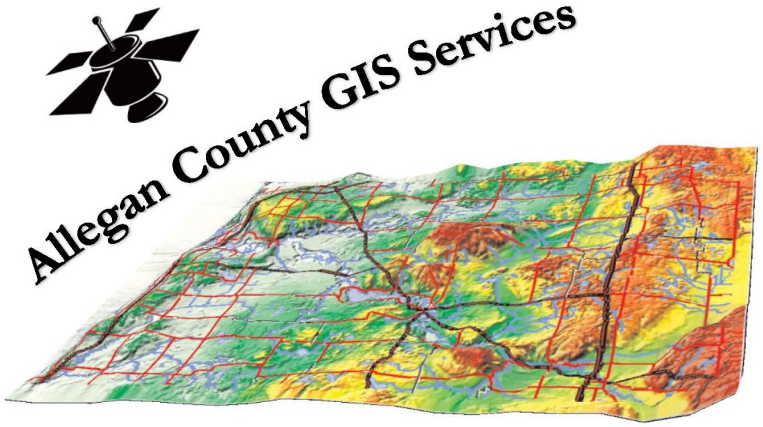

Tools

Allegan County GIS
www.allegancounty.org/gis

September 25, 2018

Contents

Chapter 1

Tools

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1.1 Core Data

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1.1.1 Control Points

Maintaining Cadastral Control Points

Steps

```
Identify position of new control point
Place Taarget Point
Update Target Point attributes to associated fabric point OID
Push move point button
Zoom to Control point
Open maintain control point tool
Select control Point
edit button
copy x and y value from
identify tool x and y of points
update button
```

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1.3 GIS Administration

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1.3.1 Enterprise Geodatabase Maintenance

Enterprise Geodatabase Compression Routine

Disconnect All Users Stop the GIS Server to disconnect it.

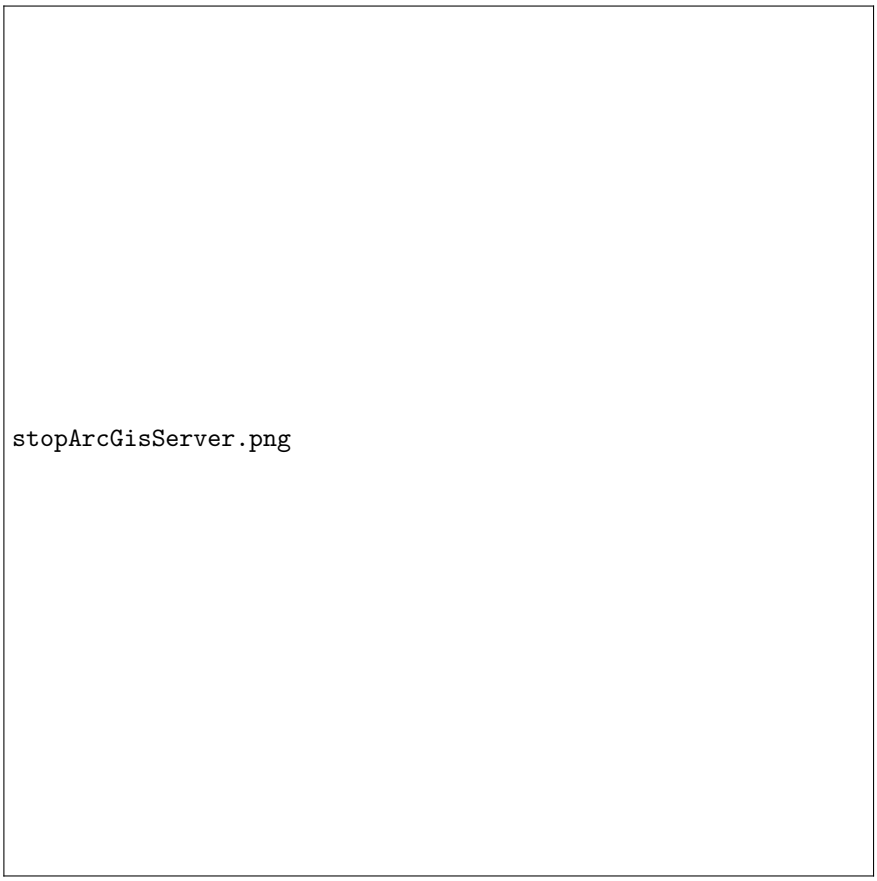

Figure 1.1: Stop ArcGIS Server

Note

Note

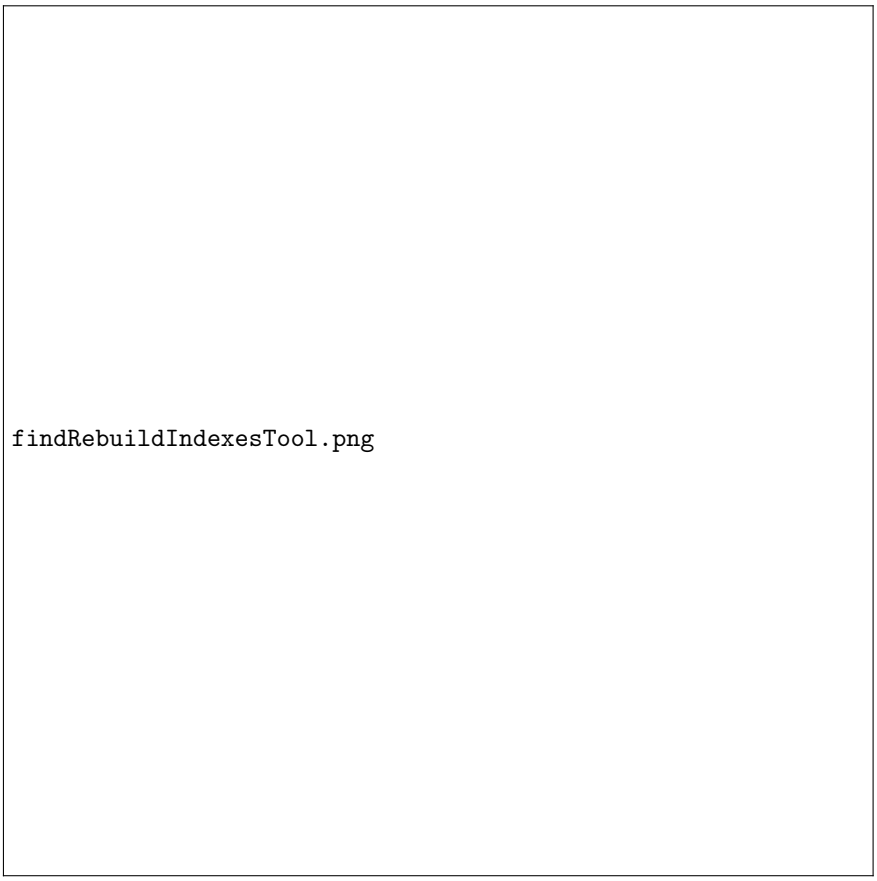

Figure 1.2: Find Rebuild Indexes Tool

Note

Rebuild Indexes Execute the geoprocessing tool

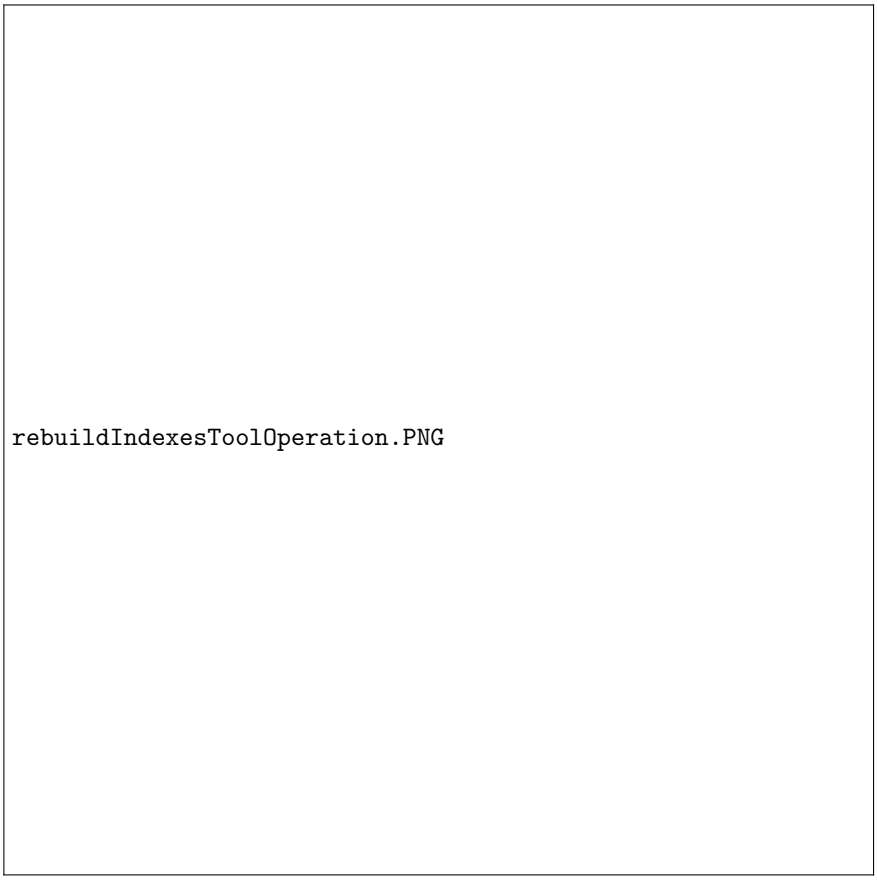

Figure 1.3: Rebuild Indexes Tool Operation

Note

Recalculate Statistics Note

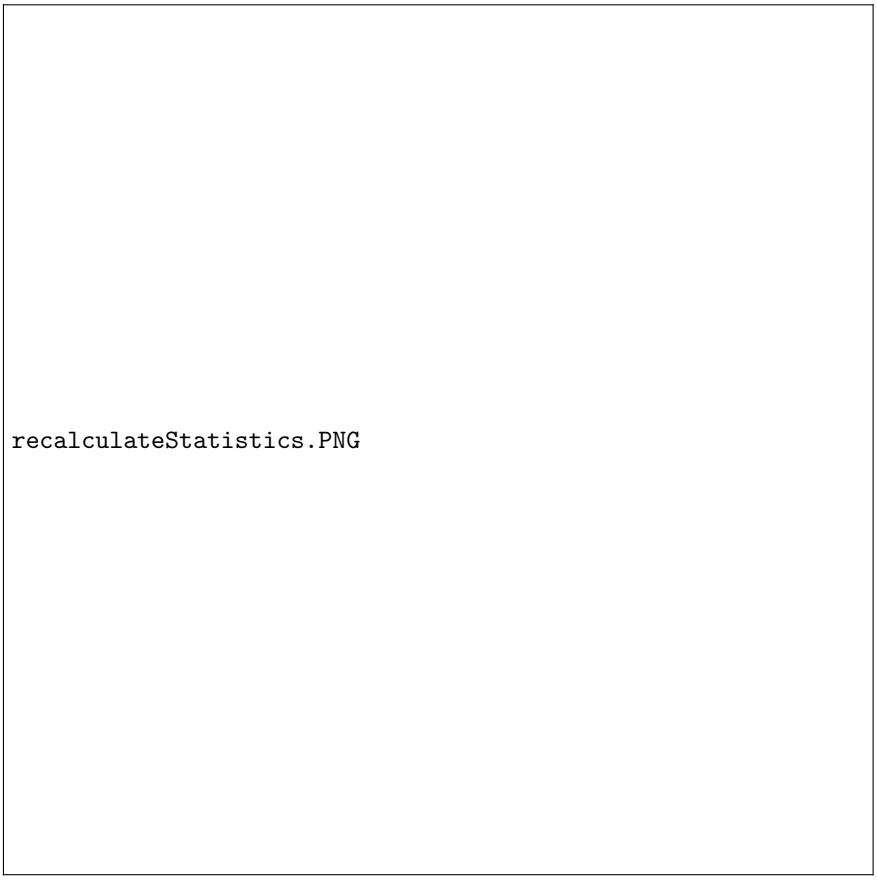

Figure 1.4: Recalculate Statistics

Note

Compress

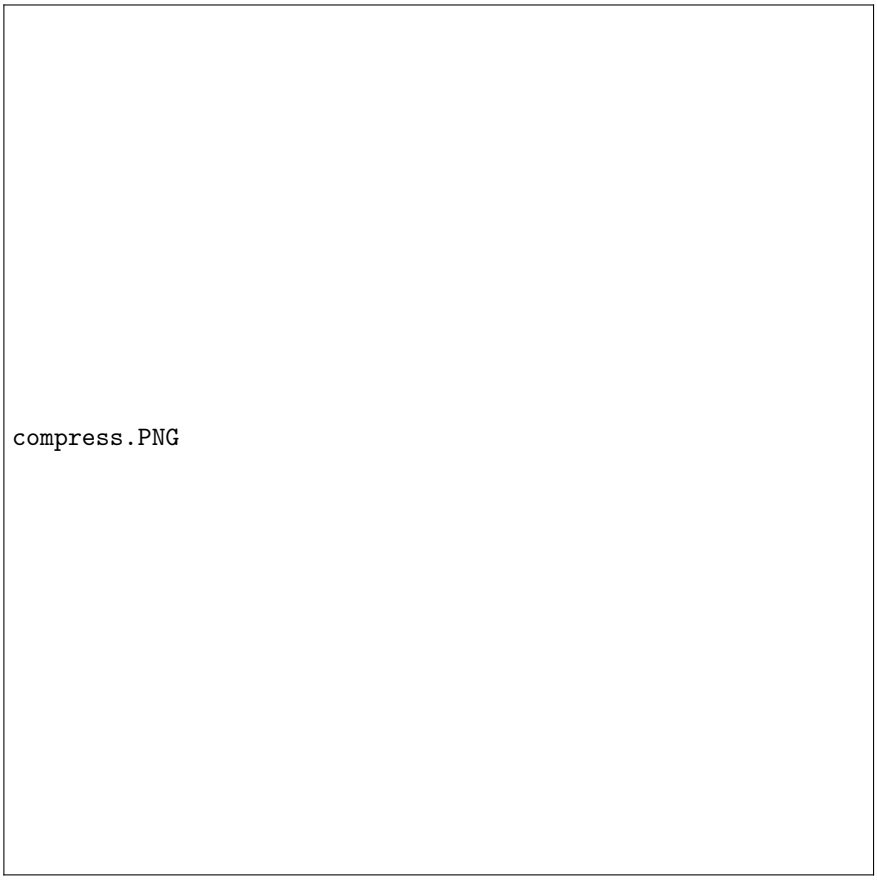

Figure 1.5: Compress

Note

Rebuild Indexes Execute the geoprocessing tool

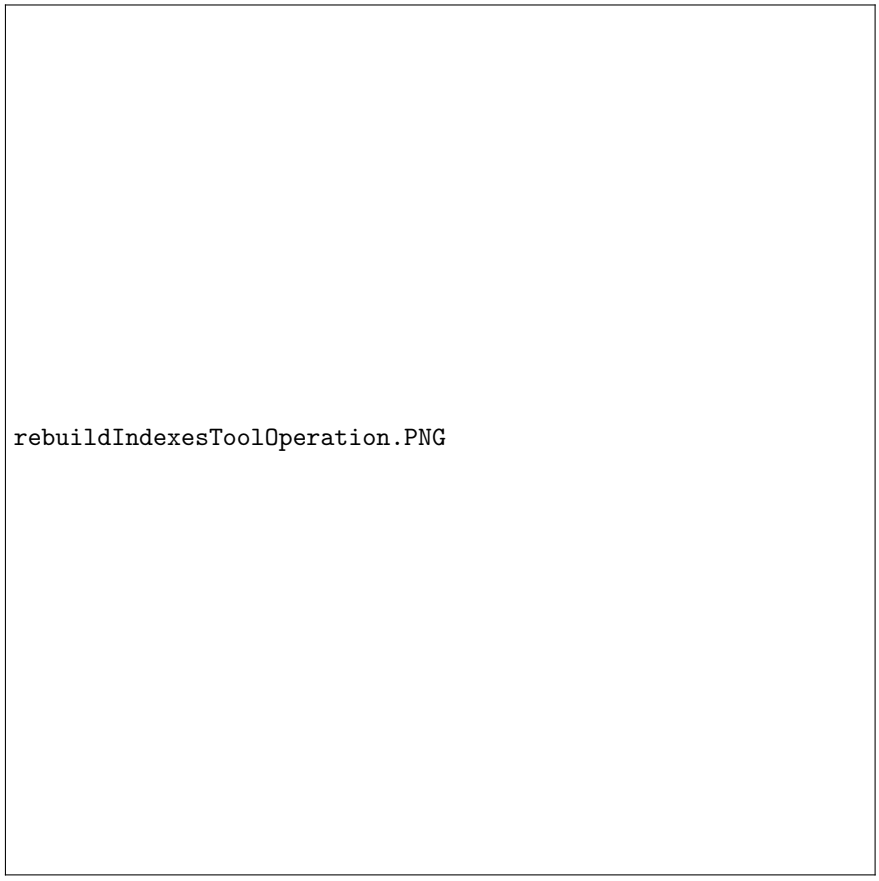

Figure 1.6: Rebuild Indexes Tool Operation

Note

Recalculate Statistics Note

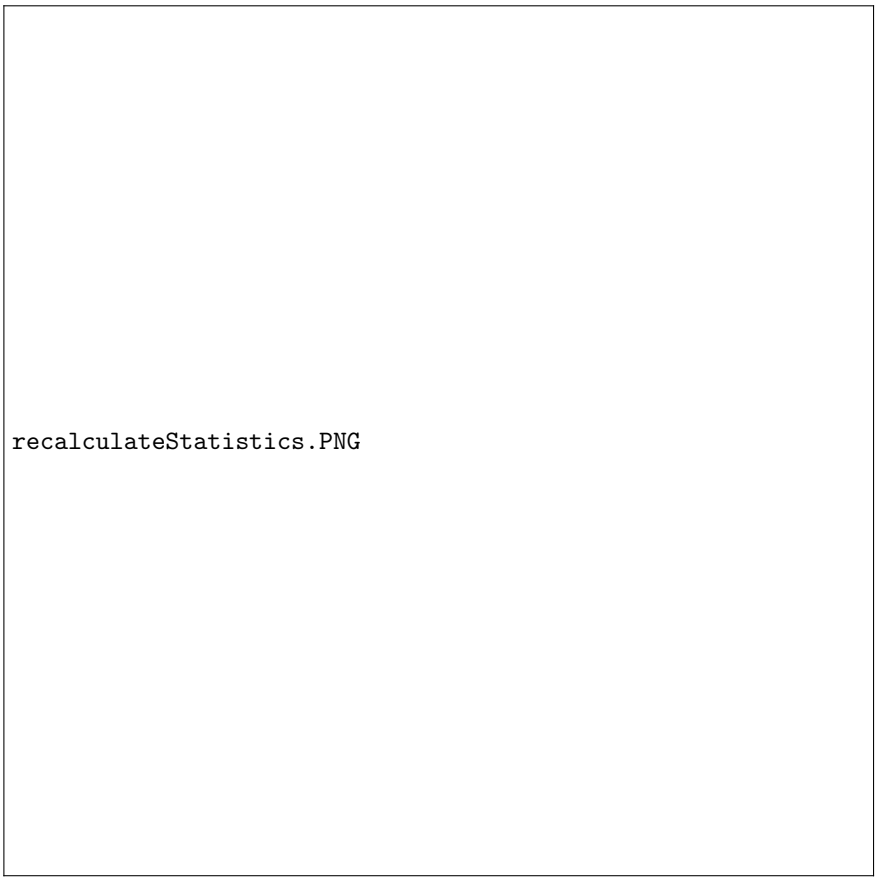

Figure 1.7: Recalculate Statistics

Note

Contents

1.3.2 Managing Map Services

To stop ArcGIS Server

Launch ArcGIS Server Manager

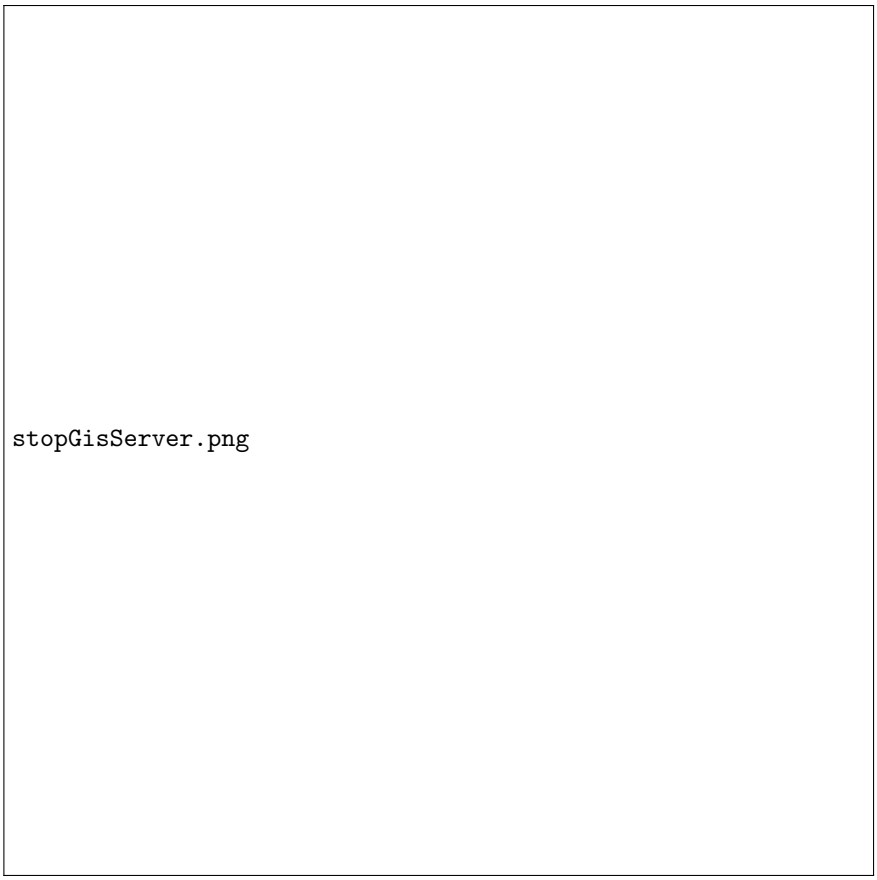

Figure 1.8: Stop the GIS Server

Fixing Damaged Services

Removing Lock Files

A blog about it https://community.esri.com/thread/103710

```
on juniper
C:\arcgisserver\config-store\services\ParcelViewer2\
PV2Adresses.MapServer\startup\JUNIPER.ALLEGANCOUNTY.ORG

This method works.
```

Steps:

1)stop arcgis server services.

2)delete the lock files(*.glock and *.rlock)
    in arcgisserver\config-store.

3) restart arcgis server service.

4)stop the pending stopping service and then start it.

Contents

1.3.3 Managing Geodatabase Replicas

Adding A New Feature Class To A Replica

Source: https://support.esri.com/en/technical-article/000010345

Summary

Currently, there is no out-of-the-box tool to add a feature class to an existing replica. With ArcGIS Desktop, one must either recreate the replica or if the workflow allows, replicate the new feature class as a separate replica.

A feature class or table can only be added to an existing replica (without recreating the replica) using ArcObjects code.

Steps:

The steps below outline how the recreate the replica using the Register Existing Data option in Desktop. These steps can be applied to both one-way and two-way replicas.

Synchronize the changes between parent and child replica geodatabases using the existing replica so that the data is identical in each database, then Unregister the replica in both geodatabases. For two-way replicas, ensure that changes are synchronized in both directions and there are no outstanding edits before unregistering the replica. Create/import the new feature class into the parent geodatabase, and add the GlobalID. Register the newly added data as versioned. Copy and paste the new feature class to the child geodatabase using ArcCatalog. Note: that the GlobalIDs must have already been added to the feature class.

For two-way replica or one-way full model, register the newly added data in child geodatabase as versioned. Using the parent geodatabase, add all the data that is to be replicated to a map in ArcMap. Click the 'Create Replica' tool on the Distributed Geodatabase toolbar. Select 'One way replica' or 'Two way replica' and click Next. Select 'Register existing data only'. Select the child geodatabase and specify a replica name. Click Next and click Finish. A new replica is created that includes the new data.

Contents

1.3.4 Managing Geodatabase Versions

Version Queries

SQL Queries

Four queries of SDEversions, SDEstates, sdestatelineages, and SDEcompress-log

```
use AC_Pub
select name, owner, version_id, state_id, parent_name
, parent_owner from
 [AC_Pub].[dbo].[SDE_versions]
select * from [AC_Pub].[dbo].[SDE_states] order by state_id
select * from [AC_Pub].[dbo].[sde_state_lineages] order
 by lineage_name,
 lineage_id
select TOP(5) * from [AC_Pub].[dbo].[SDE_compress_log] order by
 compress_end DESC
```

Query of SDEversions and SDEstates

```
 use AC_Pub
SELECT v.version_id,v.creation_time,v.creation_time,
 s.state_id, s.creation_time
FROM SDE_versions v
INNER JOIN SDE_states s ON v.state_id = s.state_id
```

Finding Orphaned Versions

ID and delete orphaned geodatabase versions

Follow the procedure: Link to source

Use SQL Server Management Studio to execute two queries and compare the results.

Step 1:

Execute the query:

```
use AC_Pub
SELECT ObjectID, name from dbo.GDB_ITEMS where
 TYPE='4ED4A58E-621F-4043-95ED-850FBA45FCBC';
```

Step 2:

Execute the query:

```
use AC_Pub
SELECT name from [dbo].[SDE_versions]
order by name
```

Compare the tables

This graphic summarizes elements of the queries.

Figure 1.9: Find Orphan Versions

Note the items from step two that have no match in step one.

Orphaned versions can be removed by name in ArcGIS

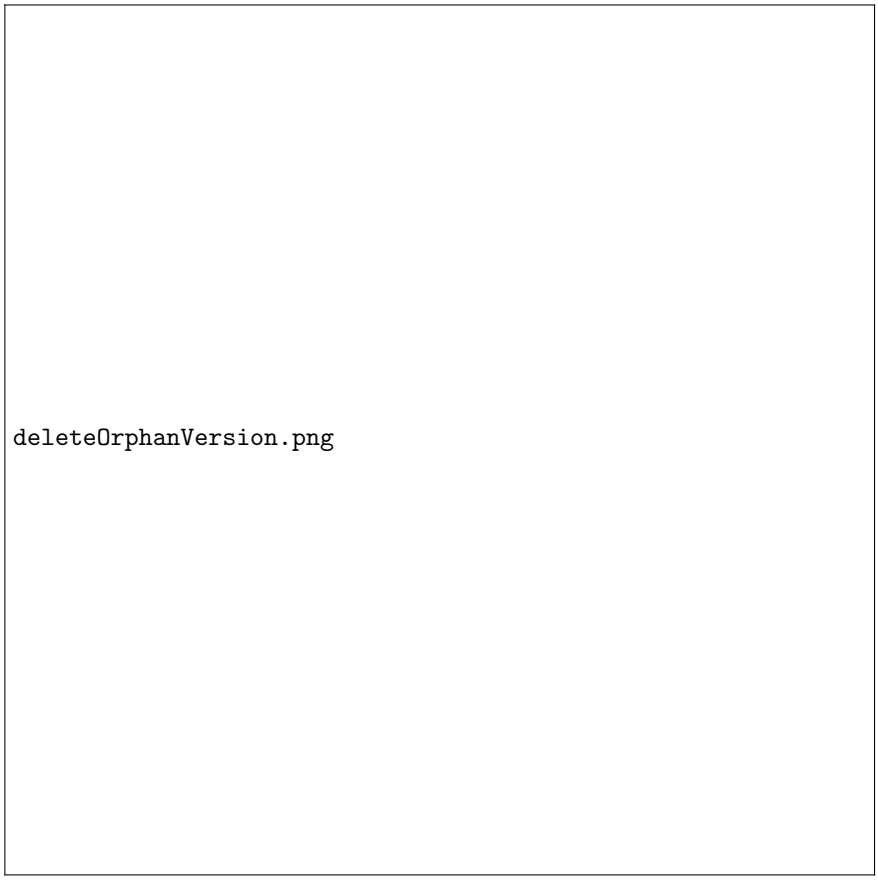

Figure 1.10: Delete Orphan Versions

Contents

1.3.5 Managing Geodatabase Versions

Version Queries

SQL Queries

Four queries of SDEversions, SDEstates, sdestatelineages, and SDEcompress-log

```
use AC_Pub
select name, owner, version_id, state_id, parent_name
, parent_owner from
 [AC_Pub].[dbo].[SDE_versions]
select * from [AC_Pub].[dbo].[SDE_states] order by state_id
select * from [AC_Pub].[dbo].[sde_state_lineages] order
 by lineage_name,
 lineage_id
select TOP(5) * from [AC_Pub].[dbo].[SDE_compress_log] order by
 compress_end DESC
```

Query of SDEversions and SDEstates

```
 use AC_Pub
SELECT v.version_id,v.creation_time,v.creation_time,
 s.state_id, s.creation_time
FROM SDE_versions v
INNER JOIN SDE_states s ON v.state_id = s.state_id
```

Finding Orphaned Versions

ID and delete orphaned geodatabase versions

Follow the procedure: Link to source

Use SQL Server Management Studio to execute two queries and compare the results.

Step 1:

Execute the query:

```
use AC_Pub
SELECT ObjectID, name from dbo.GDB_ITEMS where
 TYPE='4ED4A58E-621F-4043-95ED-850FBA45FCBC';
```

Step 2:

Execute the query:

```
use AC_Pub
SELECT name from [dbo].[SDE_versions]
order by name
```

Compare the tables

This graphic summarizes elements of the queries.

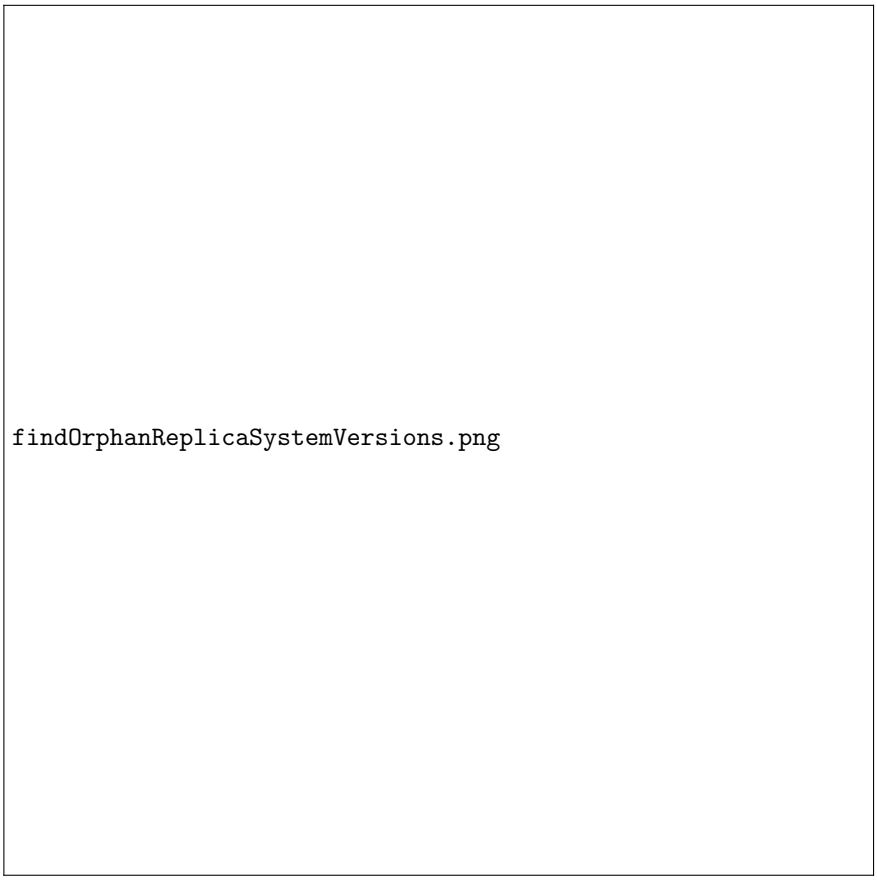

Figure 1.11: Find Orphan Versions

Note the items from step two that have no match in step one.

Orphaned versions can be removed by name in ArcGIS

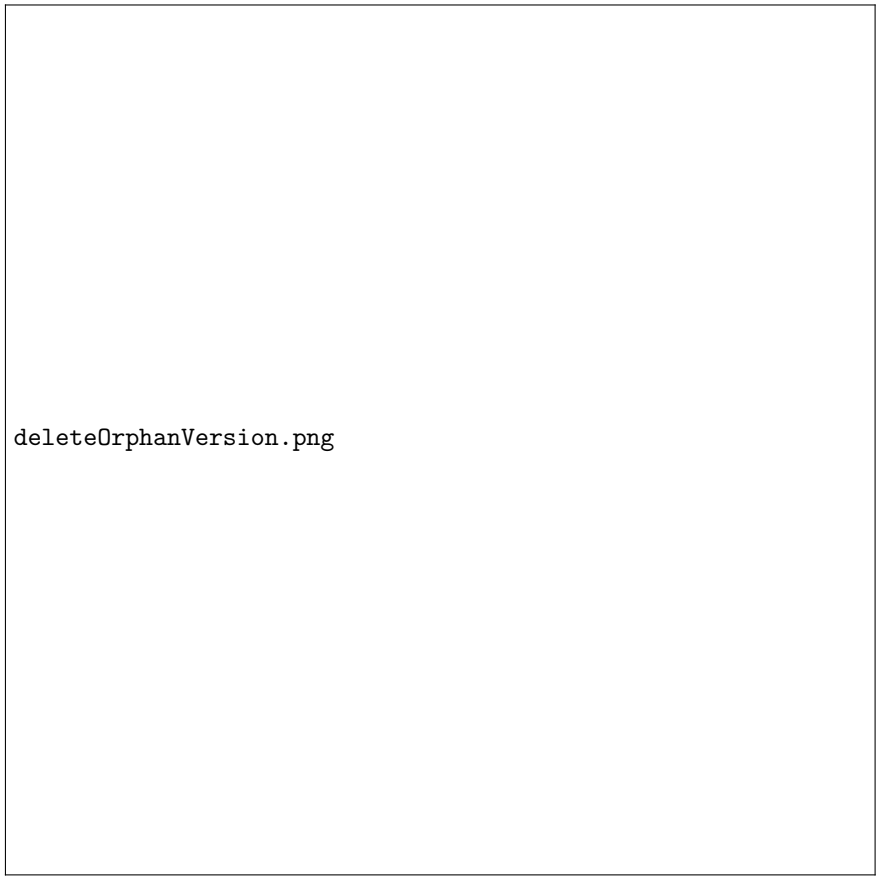

Figure 1.12: Delete Orphan Versions

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1.4 LaTeX Packages used by AC GIS

Contents

1.4.1 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

Contents

1.4.2 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

Contents

1.4.3 hyperref Package

Introduction

Official hyperref package documentation

Notes:

- Add the *hyperref package* to the preamble **last** [**?**]
- To use Tex in a pdf bookmark: use

  ```
  \texorpdfstring{\\}{}
  ```

  ```
  ie. \paragraph{Sample Text\texorpdfstring{\\}{}}
  ```

  Creates a new line without an error.

```
\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.
```

Contents

1.4.4 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

Contents

1.4.5 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 [**?**, 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
    ```

Contents

1.4.6 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

Contents

Contents

1.5.1 LaTeX Section Template

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

Contents

1.5.2 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
```

Contents

1.6 PDF Tools used by AC GIS

Contents

1.6.1 Introduction

Pupose and Summary **Workflow Purpose:** Optimization of a large number of pdf docs.
Workflow Summary: Uses Python to create a list of .pdf docs in a folder and creates a batch file to optimize the pdfs in the list to another location. The batch process calls ghost script for the optimization.

requirements Opensource software:

- ghostscript
- python 2.7 and a Python IDE
- A text editor

1.6.2 Python(2.7)

Note: The output of this script is bdoc.txt, Save as a .bat to execute the optimize.

Script that creates a batch file

```
import os, sys

project = os.path.dirname(os.path.dirname(__file__))
processing = os.path.join(project, 'processing')
#source = os.path.join(project,'source')
build = os.path.join(project,'build')
sourcepdf = os.path.join(build, '20180716')

inString1 = "gswin32 -sDEVICE=pdfwrite -dCompatibilityLevel=1.4
-dPDFSETTINGS=/ebook -dNOPAUSE -dQUIET -dBATCH
-sOutputFile=J:\\Projects\\2018ParcelAtlas\\build\\optimized\\"

inString2 = " J:\\Projects\\2018ParcelAtlas\\build\\20180716\\"

batchdoc = os.path.join(processing,"bDoc.txt")

#   Main
##############################################################################

if __name__ == "__main__":

    list1 = os.listdir(sourcepdf)
    l = open(batchdoc,'w')
    for i in list1:
```

```
        newi = i[1:]
        print newi
        t = inString1 + newi + inString2 + i + "\n"
        print t
        l.write(t)

    l.close()
```

1.6.3 ghostscript

About ghostscript is used for the optimization. ghostscript is an interpreter for the PostScript language and for PDF [**?**].

Licensing ghostscript is available opensource under AGPL conditions. more information can be found here.

Download ghostscript can be downloladed here.

1.6.4 Windows batch files

A line from the batch file looks like:

```
gswin32 -sDEVICE=pdfwrite -dCompatibilityLevel=1.4
 -dPDFSETTINGS=/ebook -dNOPAUSE -dQUIET -dBATCH
 -sOutputFile=J:\Project\2018ParcelAtlas\build\optimized\
 02-001-001-00.pdf J:\Projects\2018ParcelAtlas\build\20180716
 \_02-001-001-00.pdf
```

Contents

1.7 QGIS Tools

Contents

1.7.1 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.).

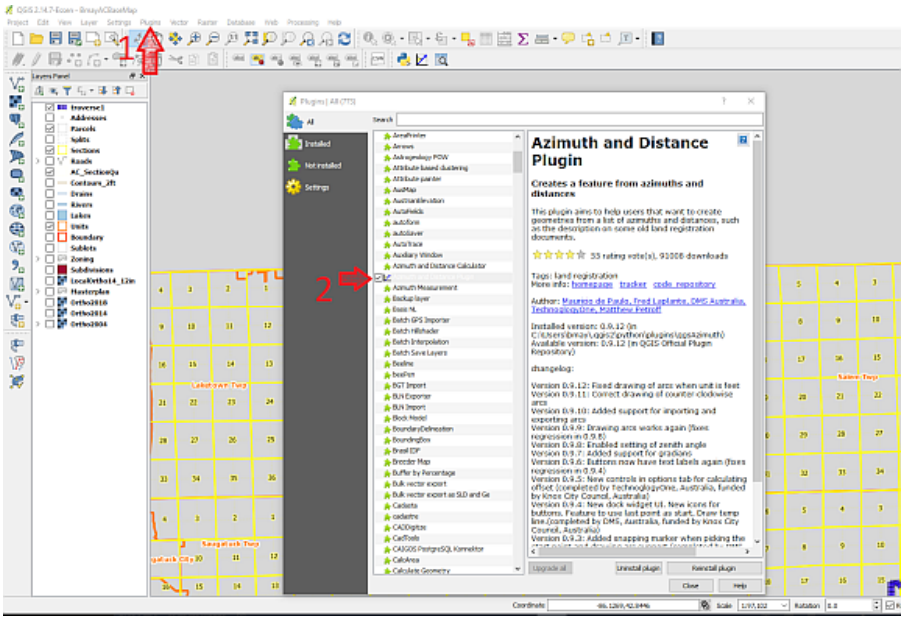

Figure 1.13: launch plugin

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

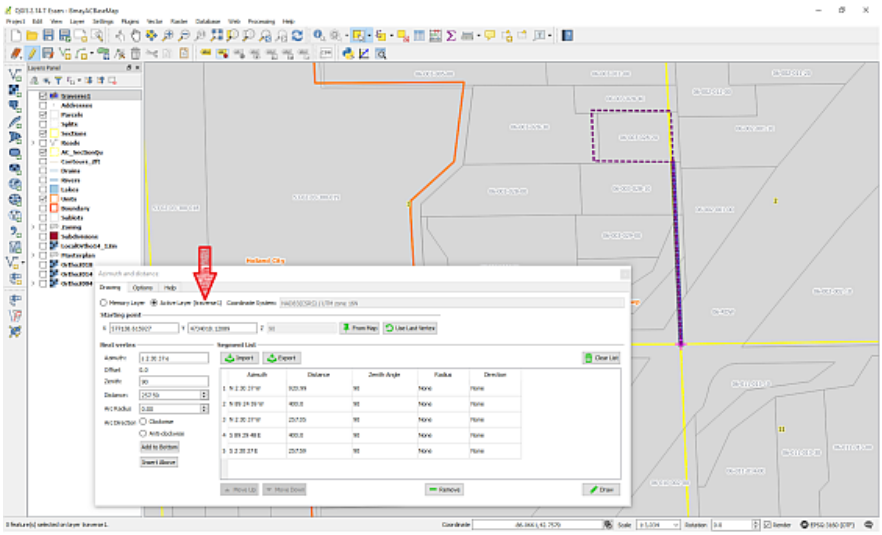

Figure 1.14: check active layer

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

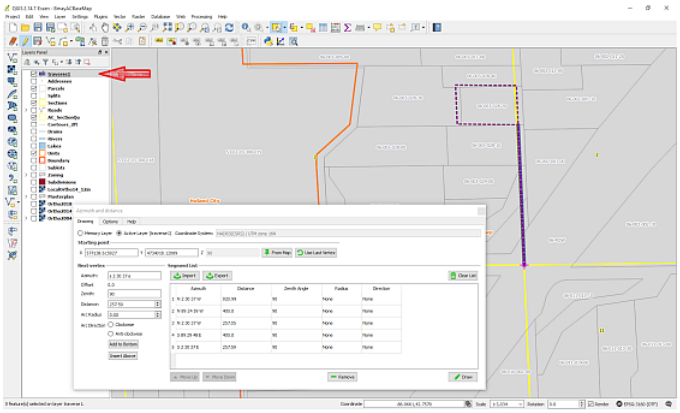

Figure 1.15: activate layer

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

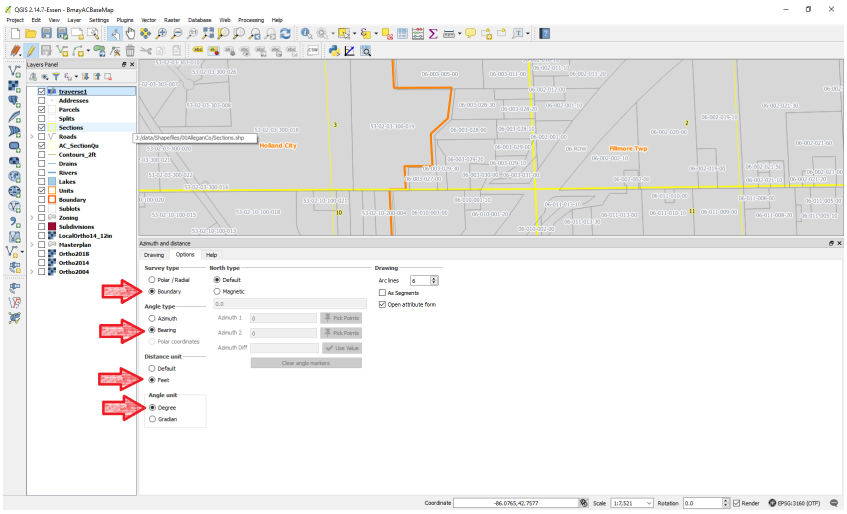

Figure 1.16: Plugin Options

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).

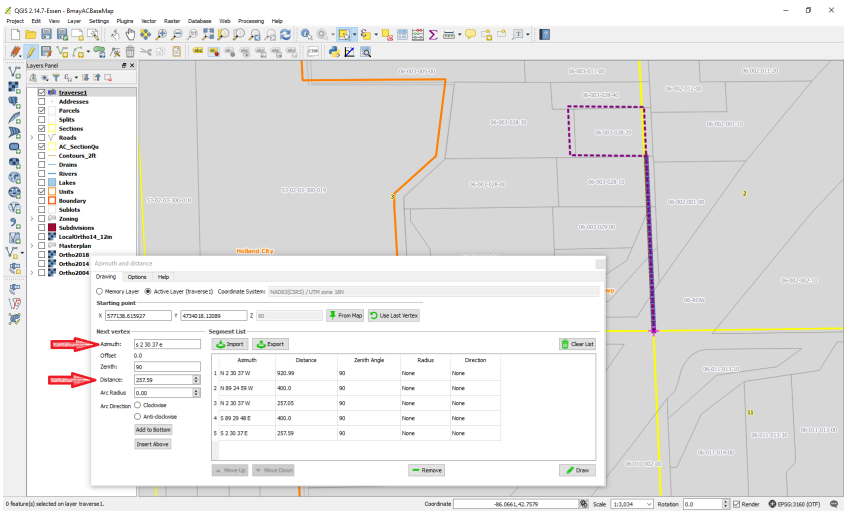

Figure 1.17: Entering Bounds

Configure editing environment

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

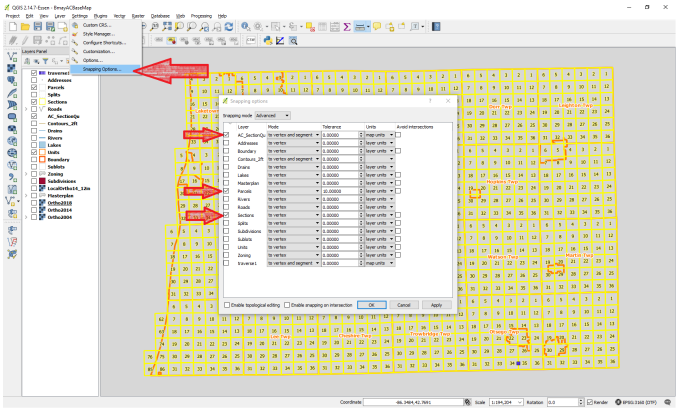

Figure 1.18: Configure editing environment

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.).

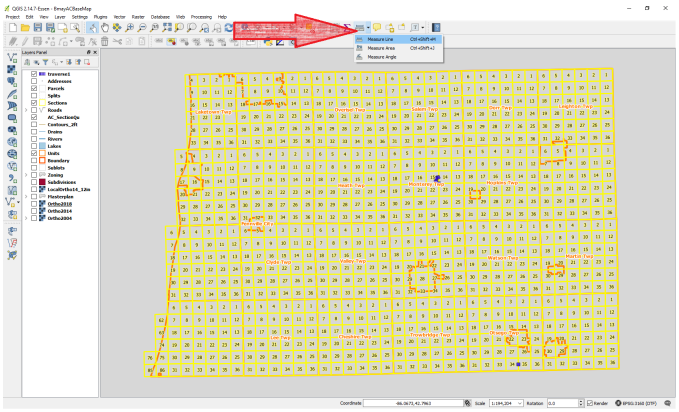

Figure 1.19: Measuring Tool

Search by Parcel Number (Search Layers Plugin.)

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

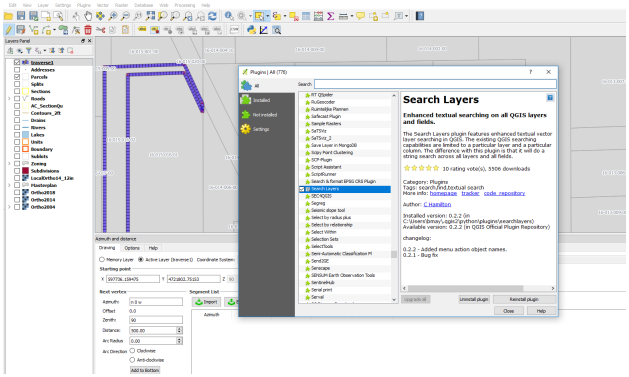

Figure 1.20: Search Layers Plugin

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

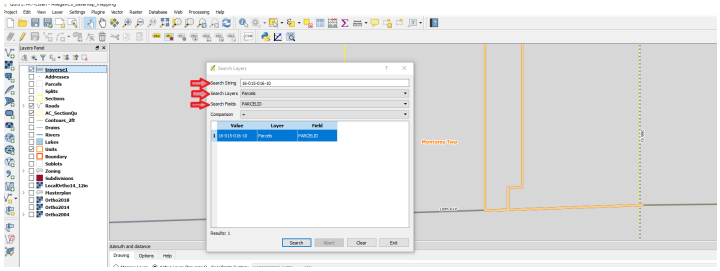

Figure 1.21: Search Layers Setup