CDOT Workflow MS 25 – Creating a DGN File for Aerial Imagery

Referencing images into a design file is very similar to referencing other design files. This workflow will introduces the **Raster Manager** tool in MicroStation.

The most common file formats used at CDOT include TIF and JPEG images that are downloaded using the DRAPP and NAIP Imagery. These images have an associated *Geographic Coordinate Systems* (GCS) which enables the images to be reprojected to the project geographic coordinate system attached to the DGN file.

Adding DRAP & NAIP Coordinate Systems to CDOT Favorite Listing

The three coordinate systems need for CDOT imagery have been added to the geocoordinate system favorites list. For these three files to be available, the user must perform the following steps to update the geocoordinate system list.

1. In Windows Explorer, navigate to the C:\Workspace\Workspace-CDOT_SS4\Users\CDOT User\ folder.
2. *Right click* on the GeoCoordFavorites.xml file and select **Copy**.
3. Each user should have a folder with their name under C:\Workspace\Workspace-CDOT_SS4\Users\. Navigate to this folder and paste the file in that location.
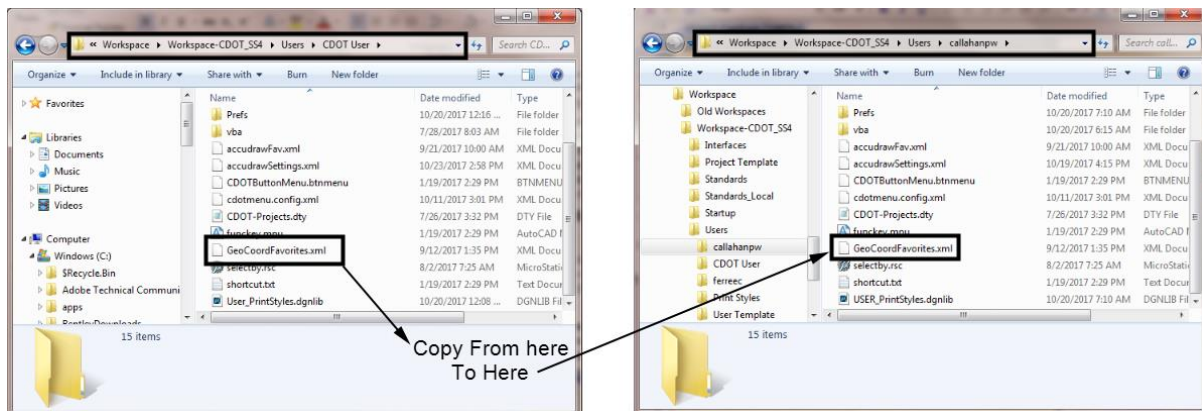
Assigning a Geographic Coordinate System (GCS) to Design File

The key to having design files and imagery properly line up with one another is in the GCS assignments. When referencing imagery, it is important to know the GCS of the file. Without knowing the GCS, there is no guarantee the imagery will line up with the project data.

The *Geographic Coordinate System* dialog box provides the tools for assigning a GCS to the design file. Use these tools to assign a GCS from a list of systems from a library or from another design file, which already has a system assigned.
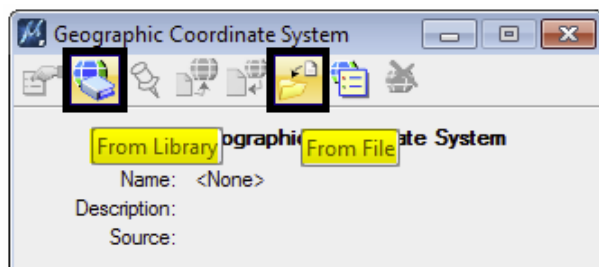

The *Geographic Coordinate System* tools can be accessed by using the MicroStation **Tools > Geographic > Select Geographic Coordinate System** pulldowns.

> *Note:* it is recommended that an individual 2D design file be created for each set of images.

Using the *From Library* command allows you to select a GCS system from a library of known systems and also a list of common systems used in Colorado.

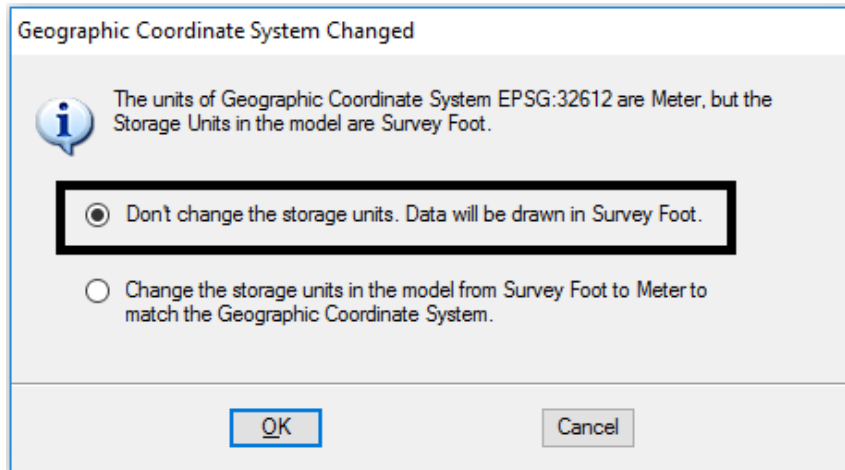1. From the *Geographic Coordinate System* dialog box select **From File**
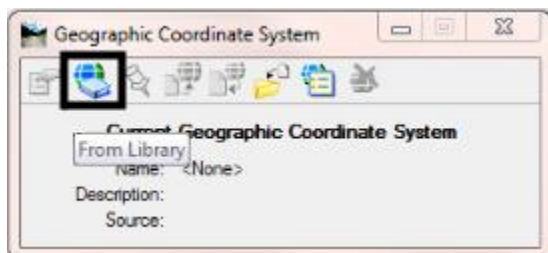
2. Expand the **DRAP & NAIP Systems – Coordinate Systems for CDOT imagery** folder.
3. Select the **CO83/2011-CF** for *DRAP* images and **EPSG-26912 & EPSG-26913** for *NAIP* images.
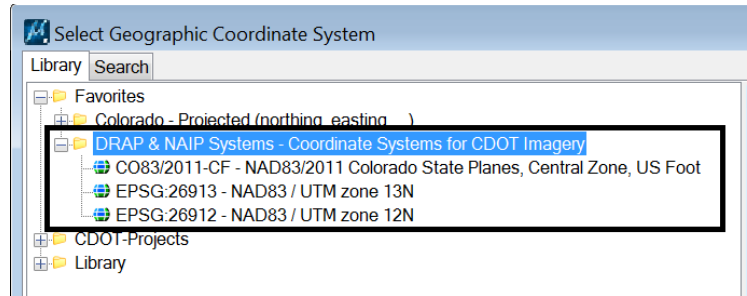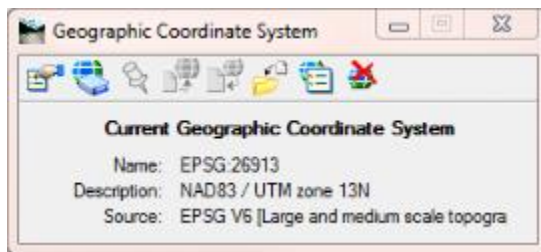
4. Click **OK** after selecting the correct system.

5. It is possible a message dialog box will appear with a warning message.

6. The storage units of the design file should **not** be changed. Click **OK** to continue.

This will assign the selected GCS to the design file.

Opening Raster Manager

The *Raster Manager* dialog box contains tools for attaching, editing, and detaching raster images. *Raster Manager* can be opened by selecting the **Raster Manager** icon from the *Primary Tools* toolbox or by selecting **File > Raster Manager** from the MicroStation menu bar.
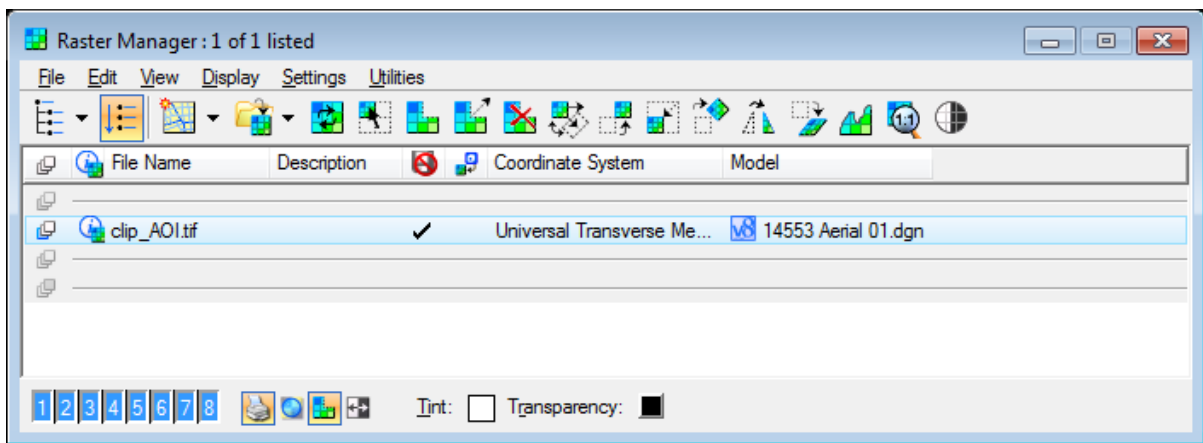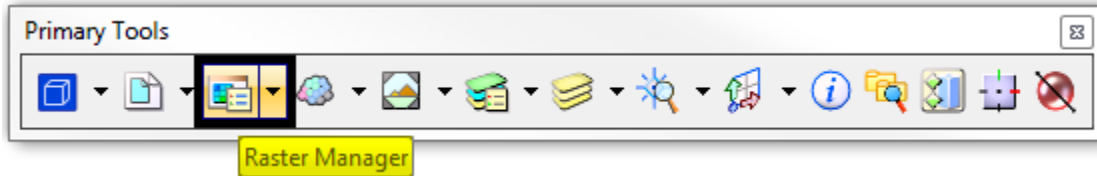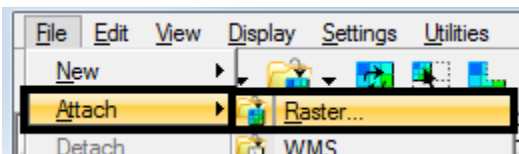
> **Note:** If the Raster Manager icon is not showing in the Primary Tools toolbox, right-click on any icon and turn ON the Raster Manager tool.
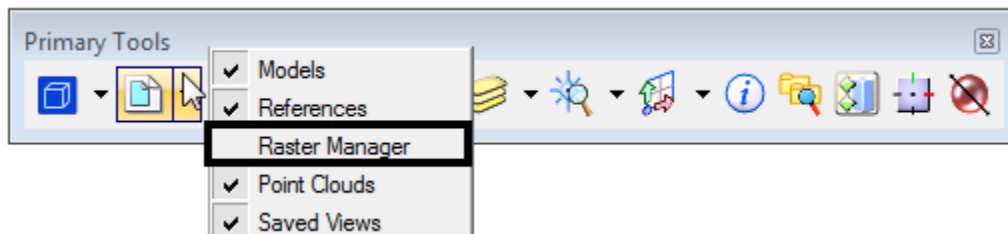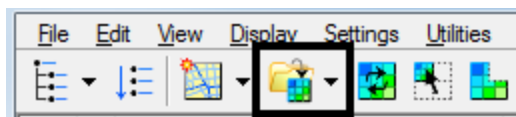
Attaching an Image using Raster Manager

The *Attach* command is used to attach an image file to the design model file. This can be completed by using any of the following methods.
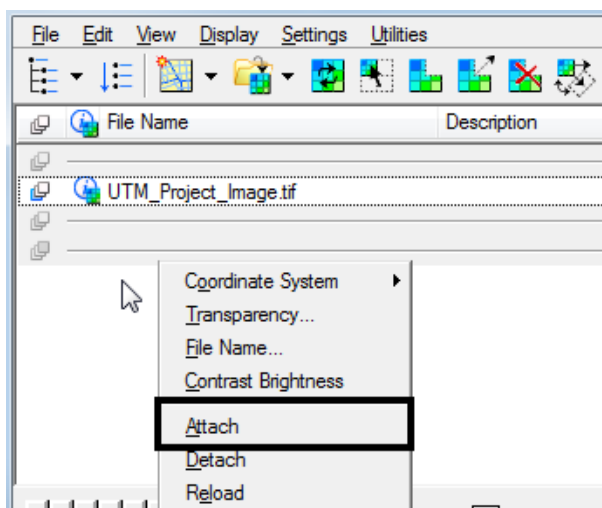
- *Method 1* - From *Raster Manager* select **File > Attach > Raster**.

- *Method 2* - From *Raster Manager* select the **Attach** icon

- *Method 3 - Right-click* in the lower portion of *Raster Manager* and select **Attach.**

After selecting the *Attach* command, the **Attach Raster Reference** dialog box opens

7. In the **Attach Raster Reference** dialog box, navigate to the folder containing the raster image.
8. Highlight the desired image file (JPG or TIF).

Note: sister files associated with the image are not selected.

Note: multiple files can be attached by highlighting a file then left clicking the Add button. This allows images from different folders to be selected.

9. Left click the **OK** button. This displays the *Raster Attachments Options* dialog box.
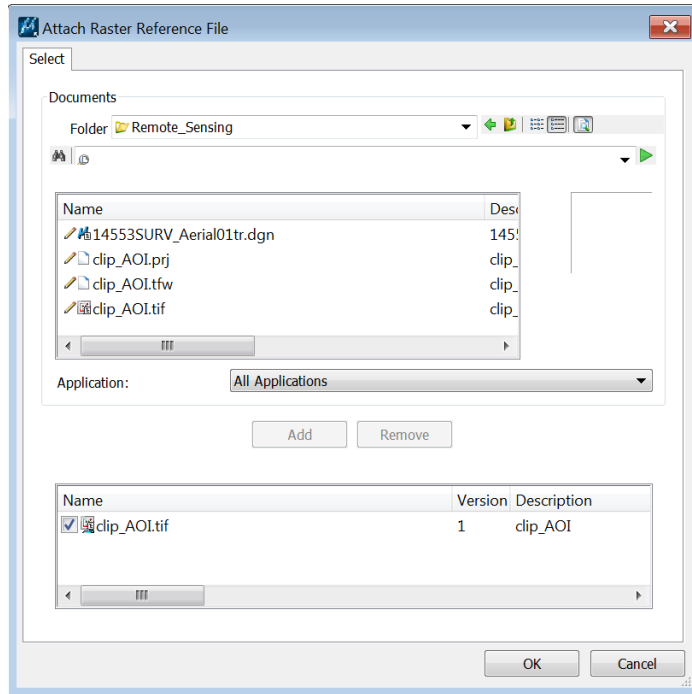
10. In the *Raster Attachments Options* dialog box, set the *Level* to **Draft_Image**.
11. In the *Geo Priority* field, select the desired option, **Sister File** for NAIP images or **Raster Header** for DRAPP images.

12. Left click the **Attach** button to complete the attachment.
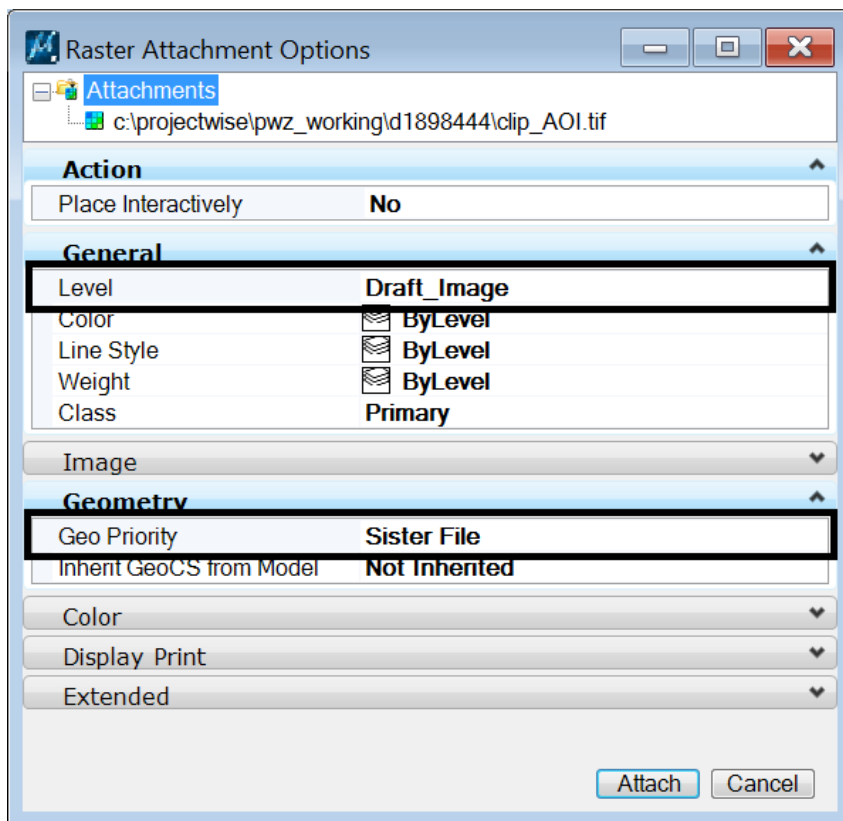
The image is placed into the design file in its proper location.

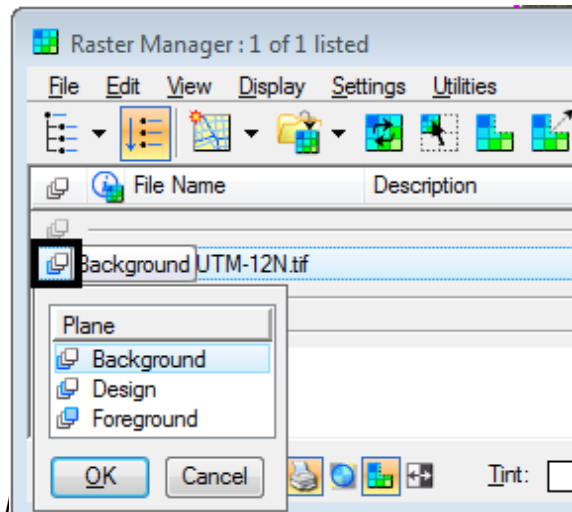13. In *Raster Manager*, select the attached image and click on the **Fit to View** icon.
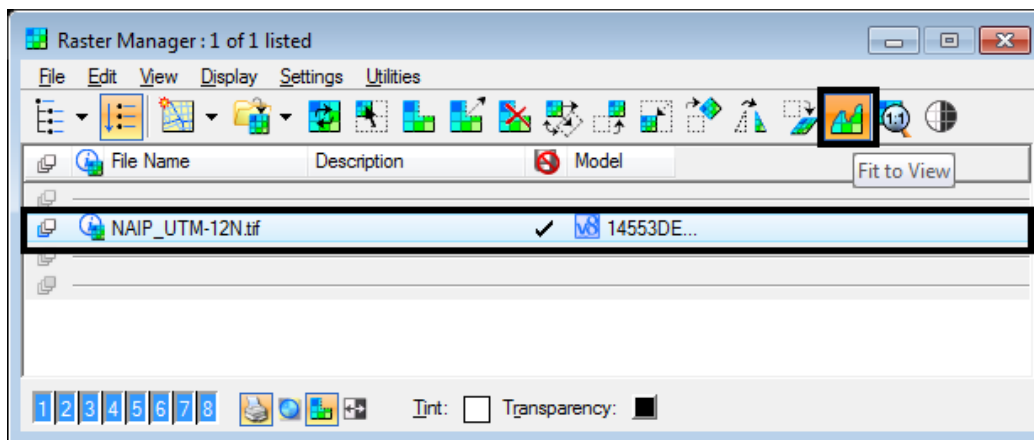
14. Click in the view to see the image.

Raster Manager Column Icons

The *Plane* icon is used to set which plane the image file will be displayed on.

15. Click on the **Plane** icon to the left of the image name.

- ***Background*** sets the image to show behind the design file data.
- ***Design*** sets the image to show with the design file data sometimes causing issues in 3D design files.
- ***Foreground*** should not be used since it displays in front of the design data.

The ***Quick Info*** icon can be used to view a short description of the image.
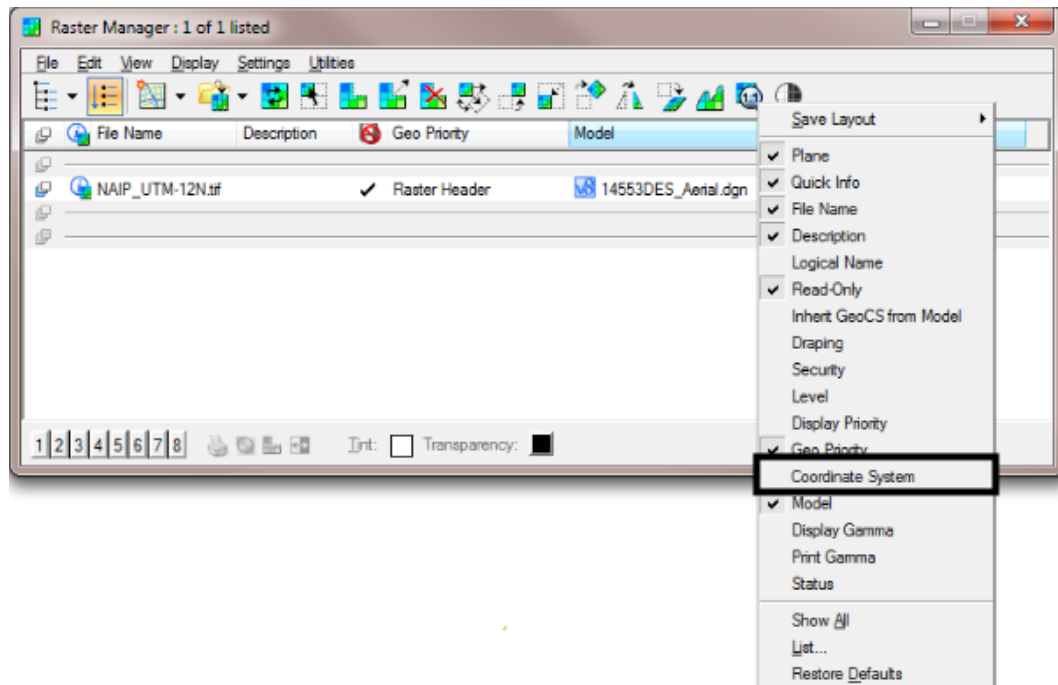
16. Place the cursor over the **Quick Info** icon.
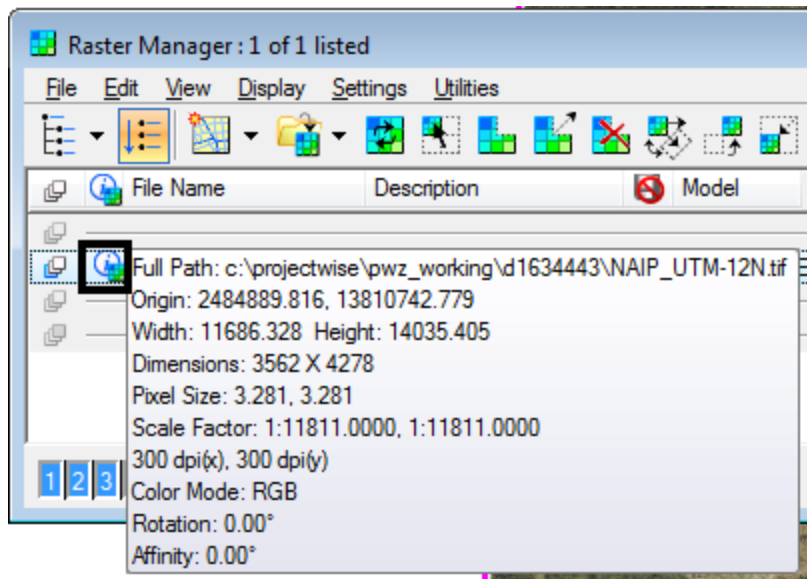
Additional columns can be added to the ***Raster Manager*** to show important information.

17. Right-click anywhere on the column row to display additional columns.

18. Toggle on **Coordinate System** to display the coordinate system assigned to the image.

19. The dialog box now displays the select column, Coordinate System.