

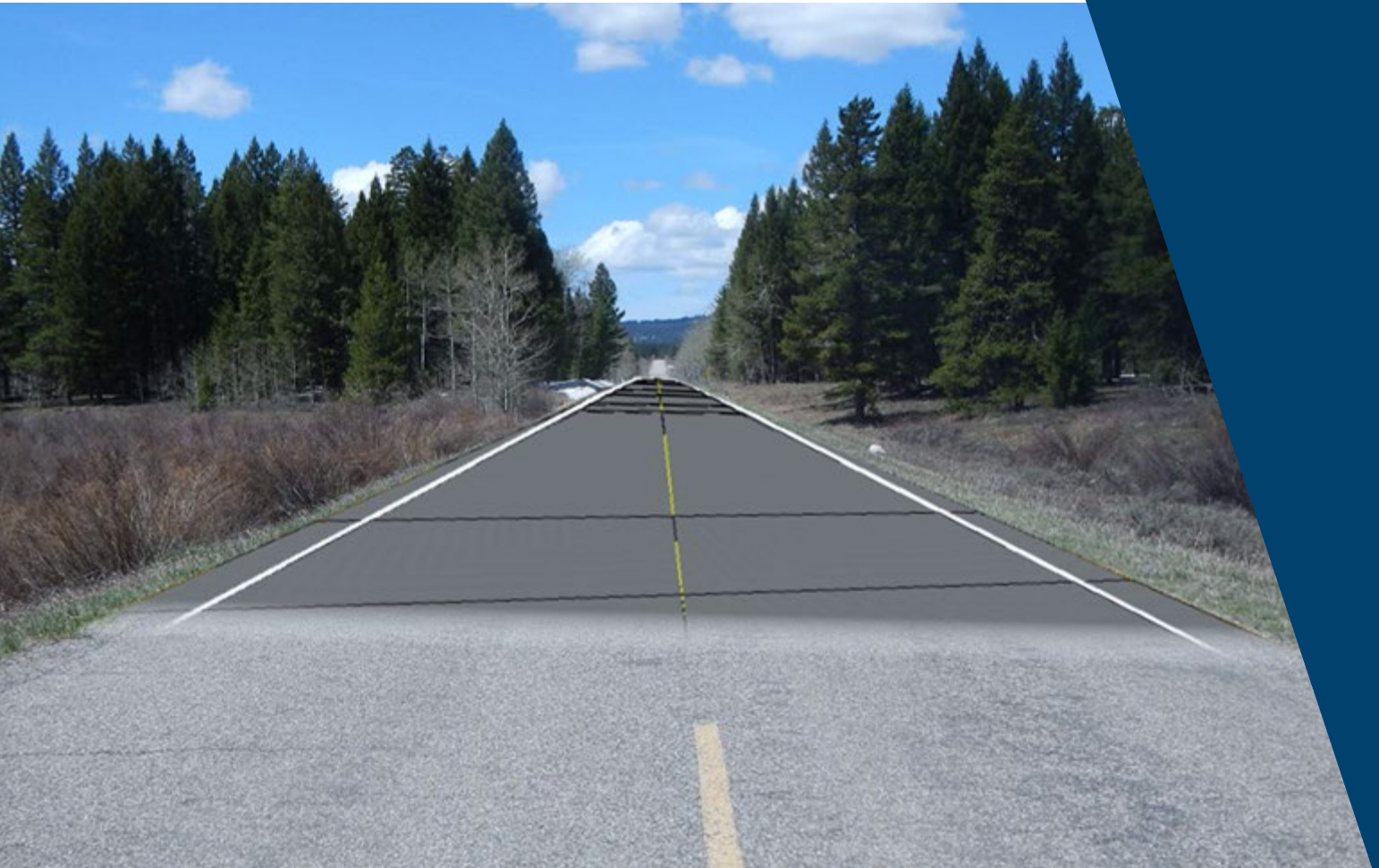
OpenRoads Designer User Manual



U.S. Department
of Transportation
**Federal Highway
Administration**

Chapter 24

OTHER WORKFLOWS




Chapter 24 Other Workflows

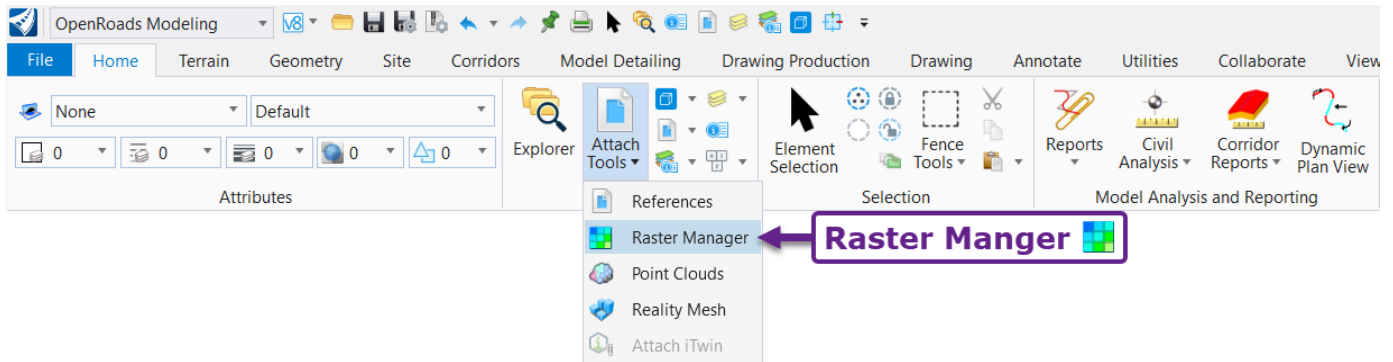
This chapter contains miscellaneous workflows for modeling, aerial placement, and sheet production.

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24A – IMPORT GEOREFERENCED AERIALS (RASTERS AND .ECW FILES)

Aerials and raster files are imported into an ORD File in the **Raster Manager** .



BEST PRACTICE: Create a new ORD File for the importation of the aerial or raster file. Do NOT place any elements in the new ORD File besides the aerial or raster. After this procedure, reference the new Aerial ORD File into other Design and Plan Sheet ORD Files as necessary.

- 1 Create a new ORD File. See [3B – Create a New ORD File](#).
- 2 Set the **Coordinate System** for the new ORD File. See [3D.1 Set the Coordinate System](#).
- 3 Select the **Auxiliary Coordinates** tool:
[*OpenRoads Modeling* → *Home* → *Primary* → ].
- 4 In the Auxiliary Coordinates Menu, double-click on the **ORD File Coordinate System** to set it as the **Auxiliary Coordinate System**.
NOTE: Setting the Auxiliary Coordinate System (ACS) is NOT always necessary for attaching a Raster. Some Raster types require the ACS to be set for the Raster to be displayed. Whether or not it is required, setting the ACS will not affect placement of the Raster.

Auxiliary Coordinate System menu

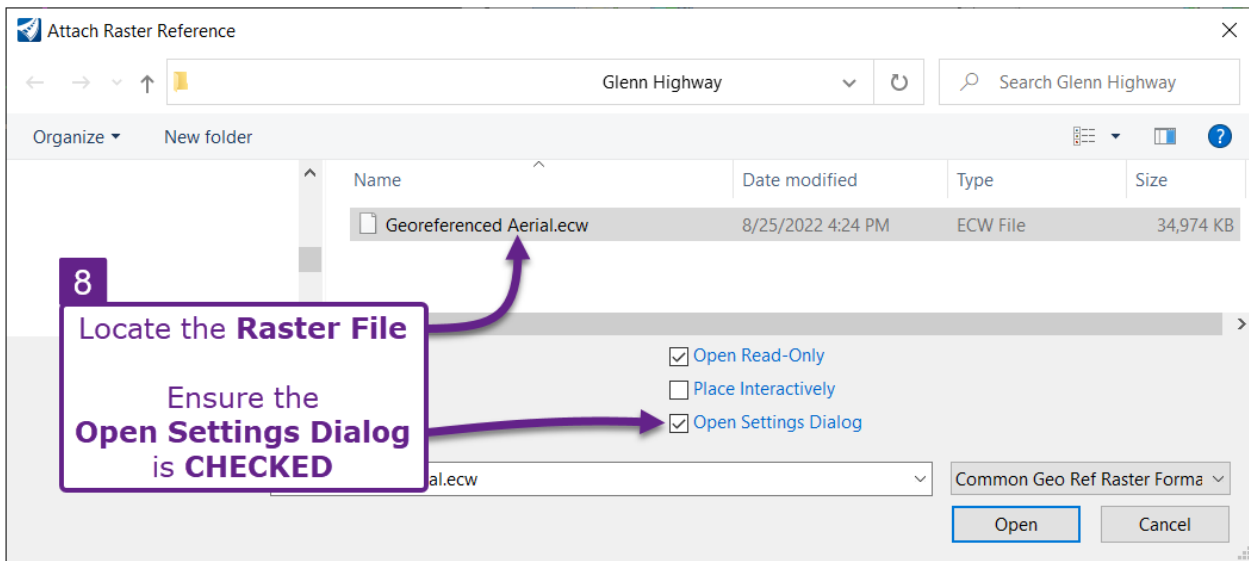
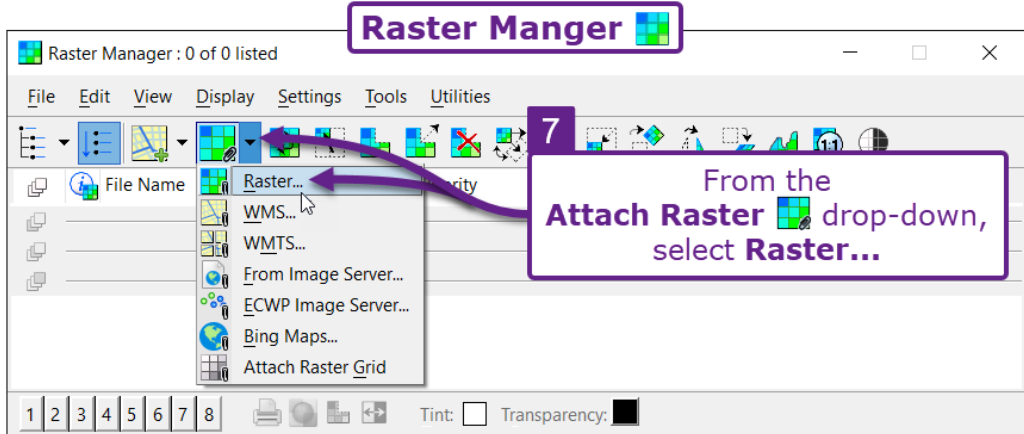
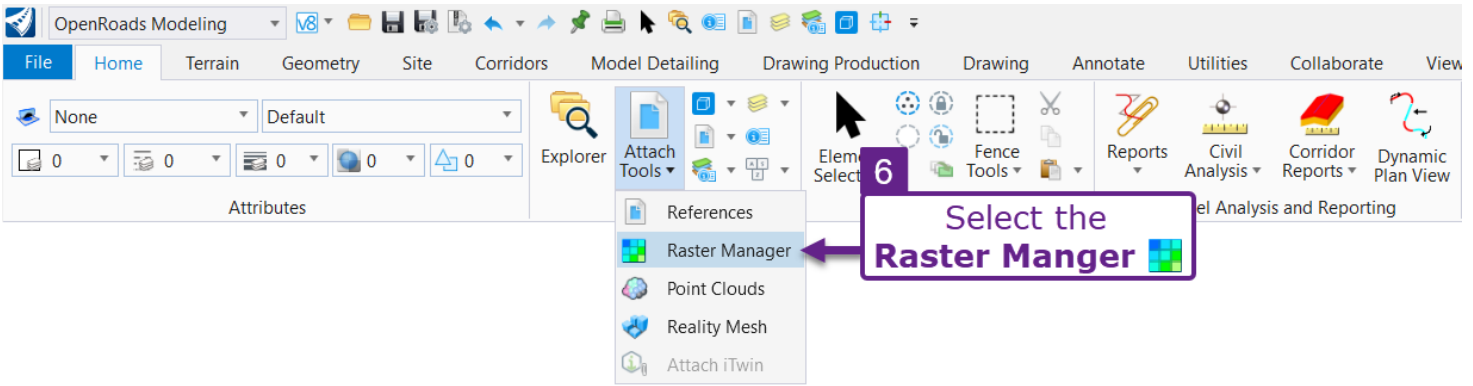
Name	Origin X	Origin Y	Type	Description
View 1 : NV83-EF	0.0000	0.0000	Geographic	NAD83 Nevada State Plane, East Zone, US Foot
NV83-EF	0.0000	0.0000	Geographic	NAD83 Nevada State Plane, East Zone, US Foot
US National Grid	0.0000	0.0000	Military Grid	US National Grid, Coordinates (WGS84 Datum)

ORD File Coordinate System

Current Geographic Coordinate System

Name: NV83-EF
Description: NAD83 Nevada State Plane, East Zone, US Foot
Source: Calculated from NV83-E by Mentor Software
Vertical Datum: NAVD88

- 5 **NOTE:** The Survey ORD File is ONLY used to ensure the georeferenced aerial is placed in the correct position. After the aerial is imported, compare the position of the aerial with survey linework elements (i.e., existing edge of road).
- 6 From the Ribbon, select the *Raster Manager* tool:
[OpenRoads Modeling workflow → Home tab → Primary group → Attach Tools drop-down]
- 7 In the *Raster Manager*, expand the **Attach Raster** drop-down and select **Raster...**
- 8 Locate the aerial or raster file. Ensure the **Open Settings Dialog** box is CHECKED.



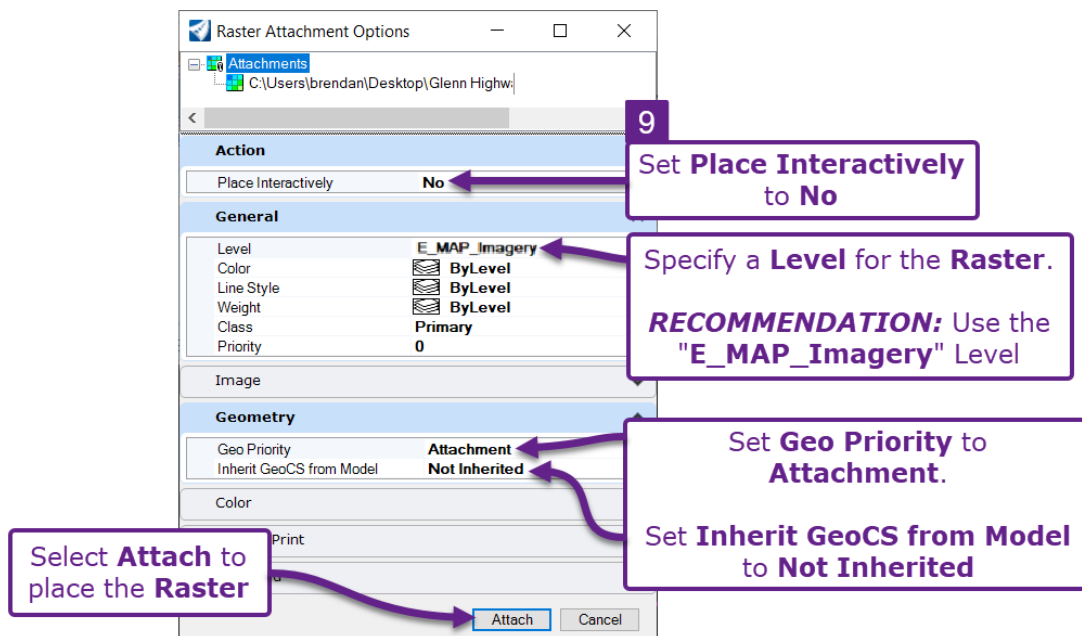
Typically, the default **Raster Attachment Options** are acceptable. However, investigate the following options:

Place Interactively: Set this option to **NO**. If set to YES, the position of the raster must be manually set.

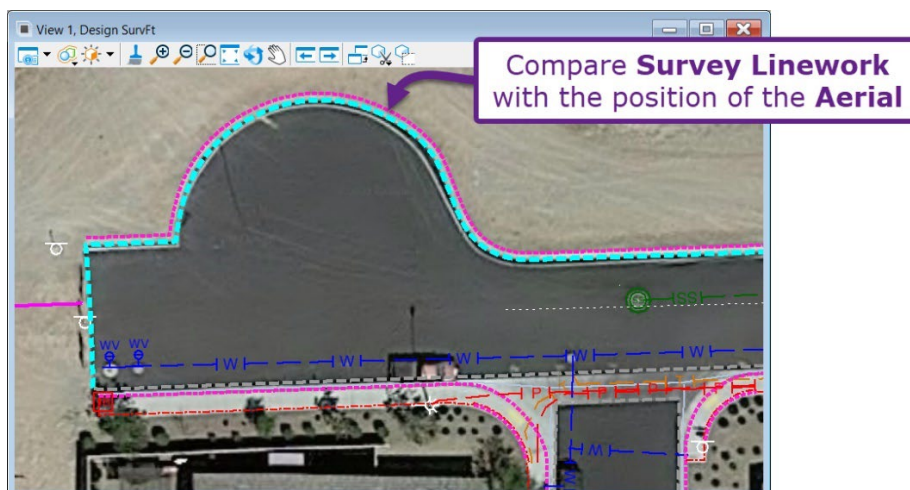
9

Level: Assign the raster to the "E_MAP_Imagery" level.

Geo Priority and **Inherit GeoCS from Model:** These settings affect how the raster coordinate system and ORD File coordinate system interact. See the next page for more information on these settings. It is recommended that **Geo Priority** is set to **Attachment**. Set **Inherit GeoCS from Model** to **Not Inherited**.




After placing the Raster, compare the position of aerial with Survey Linework.




NOTE: Very rarely does the raster **exactly** align with survey linework. However, the raster should fall within a few feet of the intended location. If the raster must be moved slightly, see [24A.2 Move a Raster](#).

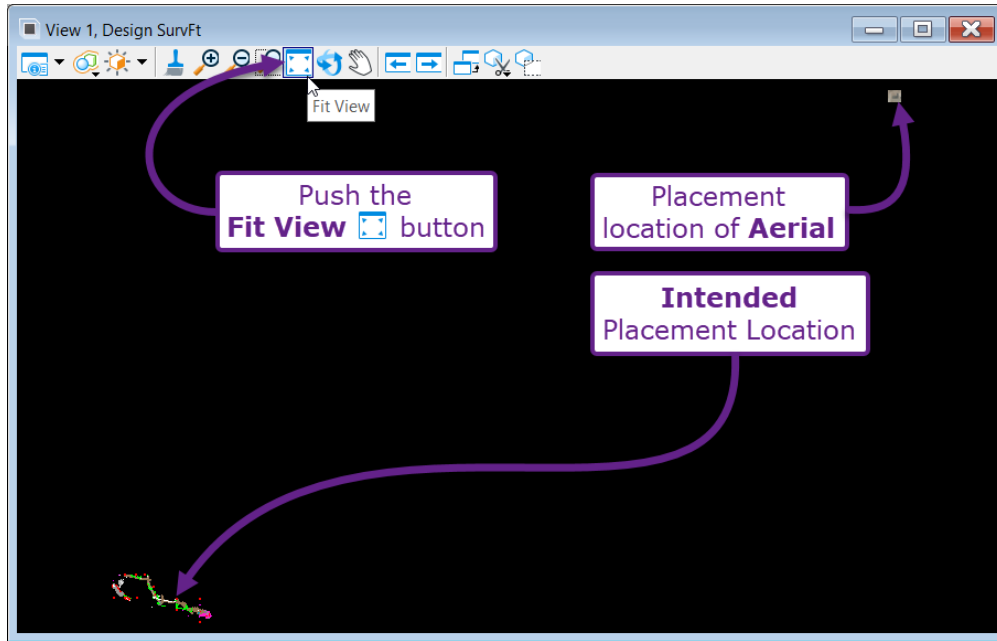
If the Raster is NOT shown or is placed in the completely wrong geographical location, then see [24A.1 Troubleshooting: Raster Placed in Wrong Geographical Location](#).



Geo Priority and Inherit GeoCS from Model settings

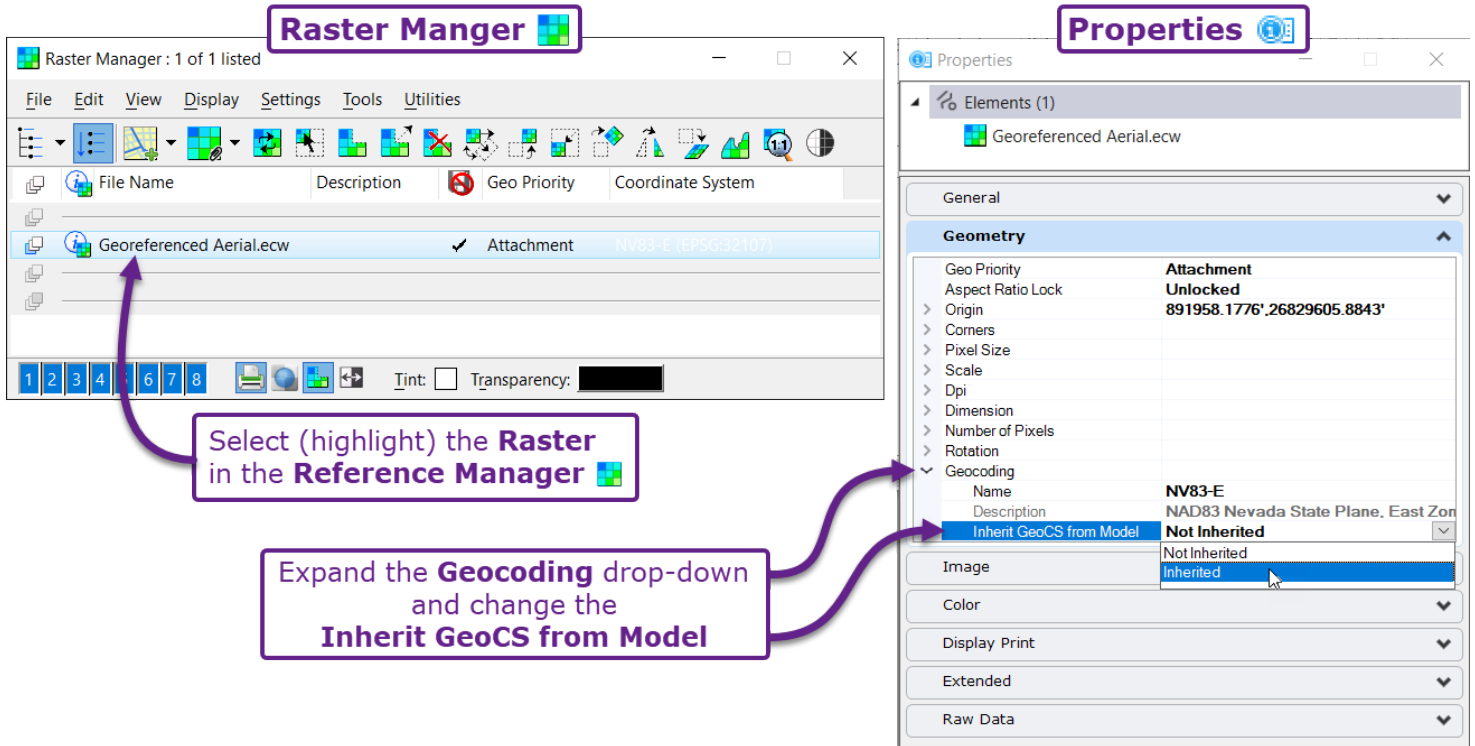
Setting:	Description:
Geo Priority	<p>The available options are Attachment and Raster Header:</p> <p>Attachment: The Coordinate System set in the ORD File is initially used to place the Raster. After placement, the coordinate system for the Raster file is shown can be changed (reprojected) in the Properties  box.</p> <p>Raster Header: With this method, the Coordinate System set in the Raster File is used to place the Raster. Typically, coordinate system information for a raster is embedded into the internal "header" of the raster. Alternatively, the coordinate system information may be contained in a supporting "World" file. The supporting World file will have the same name as the raster file but contain a slightly different file extension. The World file will have a "W" at the end of the file extension. For example, a .SID raster file type may have a supporting World file with a .SIW file extension.</p> <p>If the raster is packaged with a supporting World File, then use the Attachment option. If there is no World file associated with the raster, then use the Raster Heading option.</p> <p>TIP: If the position of the Raster needs to be moved, then the Geo Priority must be set to Attachment and the Inherit GeoCS must be set to Inherited.</p>
Inherit GeoCS from Model	<p>The available options are Inherited and Not Inherited:</p> <p>Inherited: The Raster's coordinate system is NOT used. The Raster is placed according to the ORD File coordinate system. When set to Inherited, the Raster is NOT "reprojected".</p> <p>Not Inherited: The Raster coordinate system is used. The Raster is reprojected into the ORD File coordinate system.</p> <p>In summation, if the Raster and ORD File coordinate systems are in disagreement, then the Raster will be placed in a different position depending on whether the Inherited or Not Inherited option is used.</p> <p>If the Raster and ORD File coordinate systems align, then it should NOT matter which option is used. The Raster is placed in the same position with either option if the two coordinate systems align.</p> <p>TIP: To clip a raster, the Inherit GeoCS from Model must be set to Inherited.</p>

24A.1 Troubleshooting: Raster Placed in Wrong Geographical Location

If the raster is NOT displayed after the attachment process, then use the *Fit View*  tool to check if the raster was placed in the wrong location:



If the raster is placed in the wrong geographical location, then try changing the **Inherit GeoCS from Model** option from **Not Inherited** to **Inherited** or vice-versa. The Inherit GeoCS from Model option is available in the Properties  box when the Raster is selected (highlighted) in the Raster Manager .





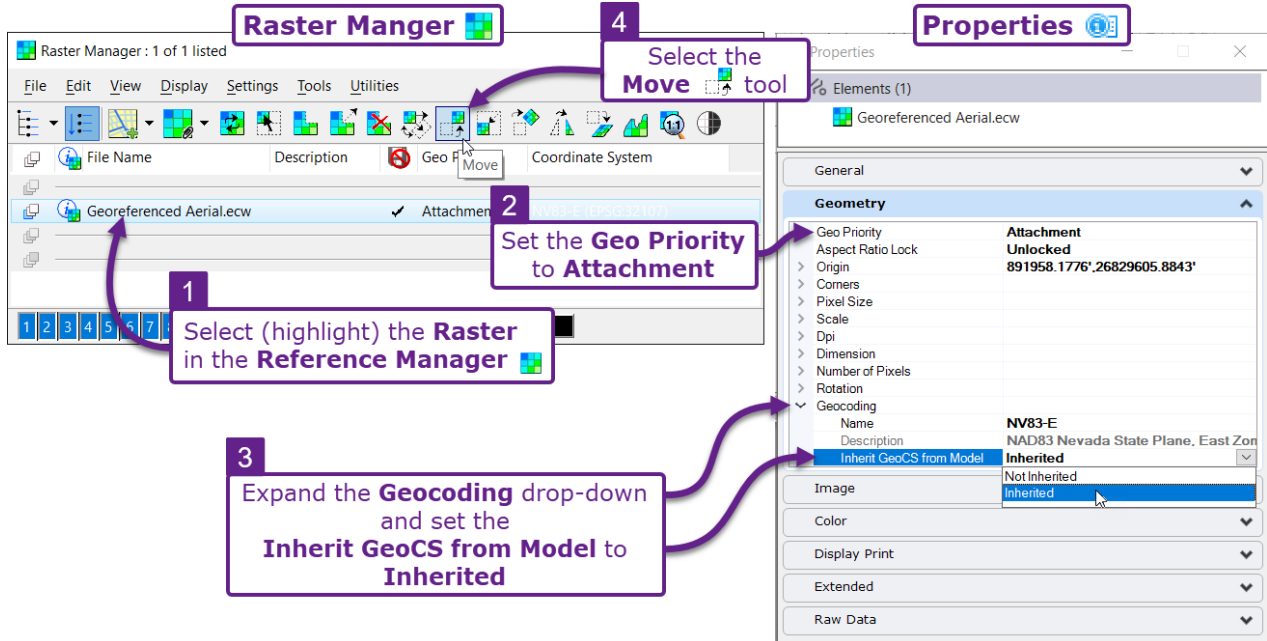
If the raster does NOT reposition into the correct geographical location, then there is probably a mismatch between the ORD File and Raster coordinate systems. Ensure the ORD File coordinate system is set correctly. To ensure the Raster coordinate system is set correctly, contact a qualified GIS Specialist to examine or recreate the raster.

24A.2 Move a Raster

It is recommended that georeferenced rasters are only moved a short distance. If a long-distance move is required, then there is probably an issue with the ORD File or Raster coordinate system.

BEST PRACTICE: After moving, examine different areas of the raster to ensure appropriate positioning.

Before moving a Raster, the **Inherit Geo CS from Model** option must be set to **Inherited**. Also, the **Geo Priority** must be set to **Attachment**. Access these options in the Properties  box when the Raster is selected (highlighted) in the Raster Manager .

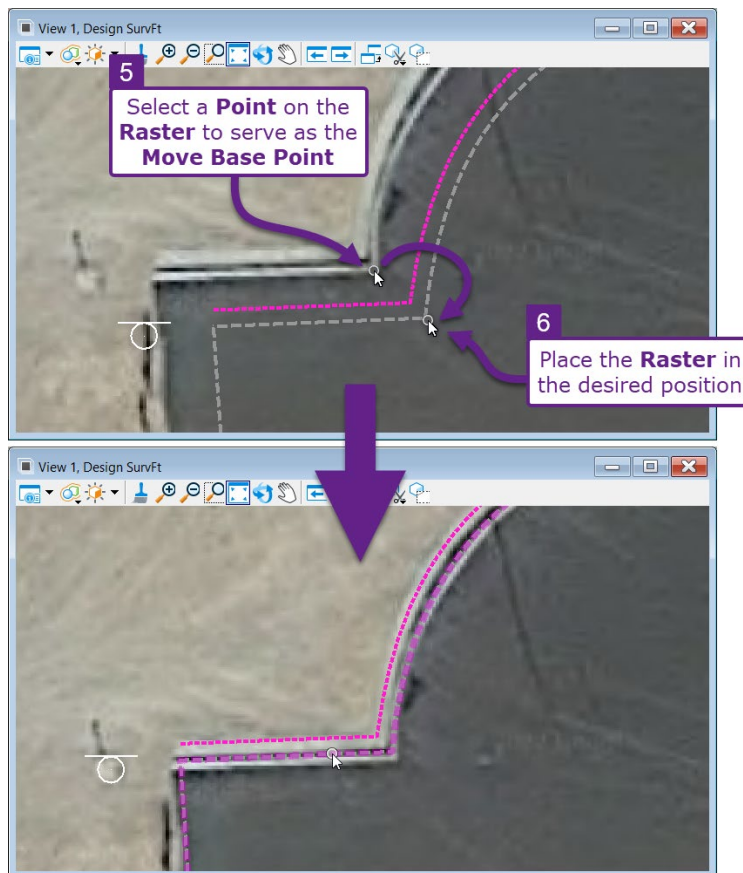


The image shows two windows from a GIS application. The 'Raster Manager' window on the left lists a raster named 'Georeferenced Aerial.ecw'. The 'Properties' window on the right shows the 'Geometry' section with the following settings:

Property	Value
Geo Priority	Attachment
Aspect Ratio Lock	Unlocked
Origin	891958.1776'.26829605.8843'
Comers	
Pixel Size	
Scale	
Dpi	
Dimension	
Number of Pixels	
Rotation	
Geocoding	
Name	NV83-E
Description	NAD83 Nevada State Plane, East Zone
Inherit GeoCS from Model	Inherited
Image	Not Inherited
Color	
Display Print	
Extended	
Raw Data	

Numbered callouts indicate the following steps:

1. Select (highlight) the Raster in the Reference Manager
2. Set the Geo Priority to Attachment
3. Expand the Geocoding drop-down and set the Inherit GeoCS from Model to Inherited
4. Select the Move tool



The image shows two screenshots of a 'View 1, Design SurvFt' window. The top screenshot shows a raster being moved. A callout box labeled '5' points to a point on the raster, with the text: 'Select a Point on the Raster to serve as the Move Base Point'. A callout box labeled '6' points to the raster, with the text: 'Place the Raster in the desired position'. A large purple arrow points from the top screenshot to the bottom screenshot, which shows the raster moved to a new position.

24A.3 Clip a Raster

Before clipping a Raster, the **Inherit Geo CS from Model** option must be set to **Inherited**.

1 Draw a Closed Clipping Shape with the *Place SmartLine* tool

2 Select (highlight) the Raster in the Reference Manager

3 Expand the **Geocoding** drop-down and set the **Inherit GeoCS from Model** to **Inherited**

4 Select the **Clip** tool

5 Set the **Area** to **Element**

6 Select the Clipping Element

Raster Manager

Properties

Geometry	
Geo Priority	Attachment
Aspect Ratio Lock	Unlocked
Origin	891958.1776', 26829605.8843'
Comers	
Pixel Size	
Scale	
Dpi	
Dimension	
Number of Pixels	
Rotation	
Geocoding	
Name	NV83-E
Description	NAD83 Nevada State Plane, East Zon
Inherit GeoCS from Model	Inherited
Image	Inherited
Color	
Display Print	
Extended	
Raw Data	

Clip


Area: Element

Mode: Clip Boundary

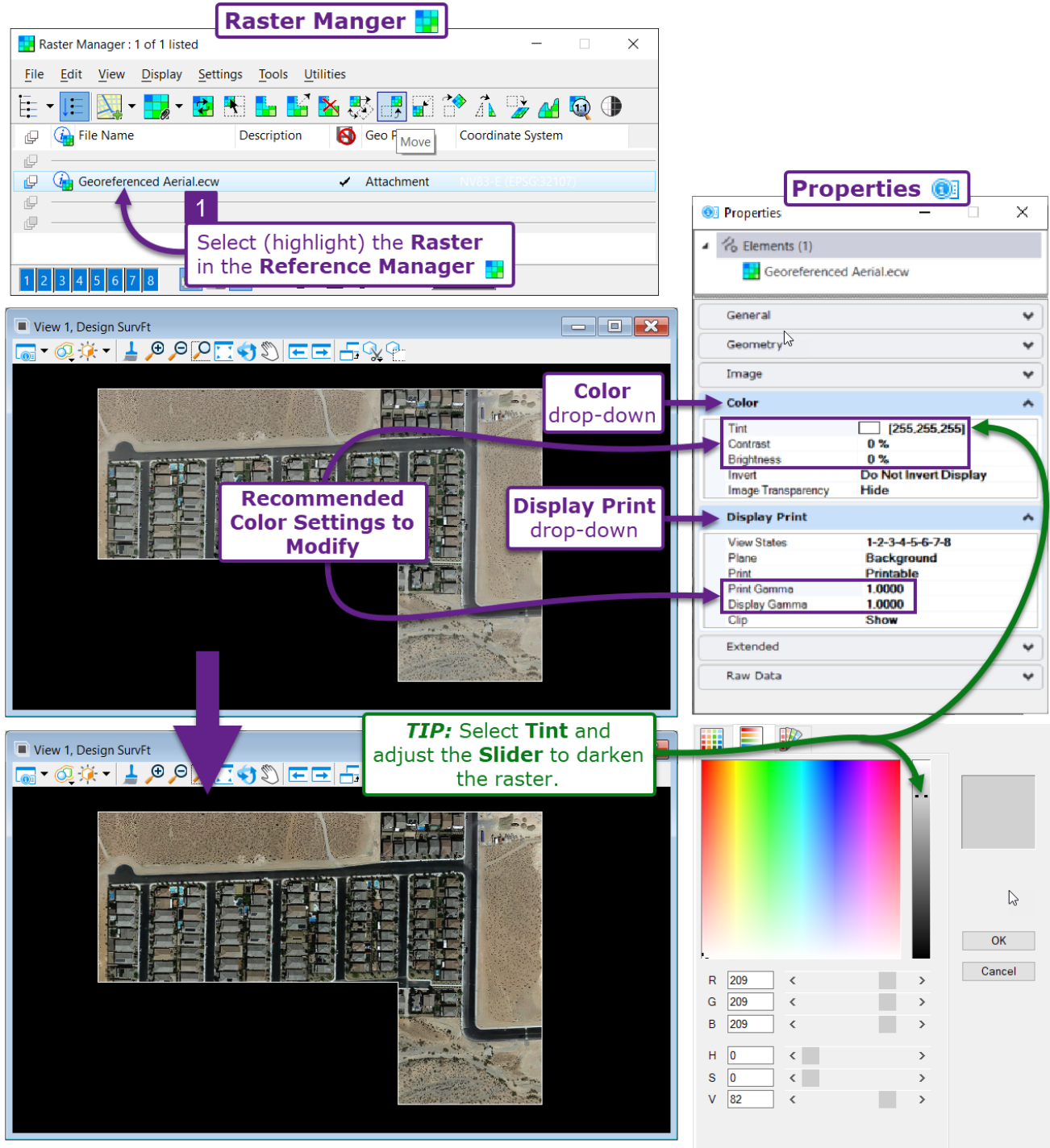
Work in Image Plane

Use Fence

24A.4 Adjust Raster Color, Brightness, and Contrast Settings

The color settings for a Raster are adjusted in the in the Properties  box. Use settings found in the **Color** and **Display Print** drop-downs to modify the appearance of the Raster.

It is recommended that the raster color modification is limited to the following settings: **Tint**, **Contrast**, **Brightness**, **Print Gamma**, and **Display Gamma**.



The image shows a sequence of steps to adjust raster settings. It starts with the **Raster Manager** window where the raster 'Georeferenced Aerial.ecw' is selected. An arrow points to the **Properties** dialog box, which is open to the **Color** and **Display Print** sections. The **Color** section shows 'Tint' set to [255,255,255]. The **Display Print** section shows 'Print Gamma' and 'Display Gamma' both set to 1.0000. A **TIP** box states: 'TIP: Select Tint and adjust the Slider to darken the raster.' Below this, a color selection dialog is shown with a color picker and a slider. The final result is a darker raster image.

Raster Manager

1 Select (highlight) the Raster in the Reference Manager

Properties

Color drop-down

Recommended Color Settings to Modify

Display Print drop-down

TIP: Select Tint and adjust the Slider to darken the raster.

NOTE: By default, Print Gamma and Display Gamma are set to 1. Increasing the Display Gamma will brighten the raster. Decreasing the Display Gamma will darken the raster. Changing the Print Gamma has NO effect on the display of the raster in ORD. After determining the appropriate Display Gamma value, set the Print Gamma to match.

24B – IMPORT A SHAPE FILE (.SHP)

A Shape File (.shp) can be attached and imported through the References manager. Attaching a Shape File (.shp) is the same processes as referencing an ORD File. However, the "Files of type" setting must be changed to Shapefiles (*.shp) when selecting the Shape File.

When attaching a Shape File (.shp), use the same Reference Attachment settings used when attaching an ORD File. For more information on referencing, see [1E – References](#).

WARNING: The accuracy of Shape File data depends on the collection method use to gather the data. Shape File data collected from handheld GPS receivers or acquired from a GIS server may NOT exactly align with surveyed linework.

WARNING: Before attaching a Shape File, ensure that the Coordinate System is set in the active ORD File. See [3D.1 Set the Coordinate System](#).

NOTE*: Shape Files (.shp) have associated supporting files with the same file name, but different file extensions. For example, the following file types are commonly associated with a Shape File: .dbf, .cpg, .prj, and .sbx. **When referencing a Shape File (.shp), the associated supporting files must be placed located in the same folder as the Shape File.** The supporting files are analyzed by ORD for appropriate geo-spatial placement of the Shape File.

1 Select Attach Reference

2 Change "Files of type" to Shapefiles (*.shp)

3 Select the Shapefile. See NOTE*: above.

4 Push the Open button

Slot	Name	Type	Attachment Method	Orientation	Presentation
1	id-az158061_ali.dgn			Coincident - World	Wireframe
2	id-a2158061_sur.dgn	SurfT 2D	Survey foot 2D design...	Coincident - World	Wireframe
3	id-a2158061_ter.dgn	Default	Master Model	Coincident - World	Wireframe
4	id-a2158061_cor.dgn	2D Design SurfT-3D		Coincident - World	Wireframe
5	id-a2158061_sup.dgn	2D Design SurfT	Master Model	Coincident - World	Wireframe
6	id-a2158061_cor_appr.dgn	2D Design SurfT	Master Model	Coincident - World	Wireframe

Look in: Riverside

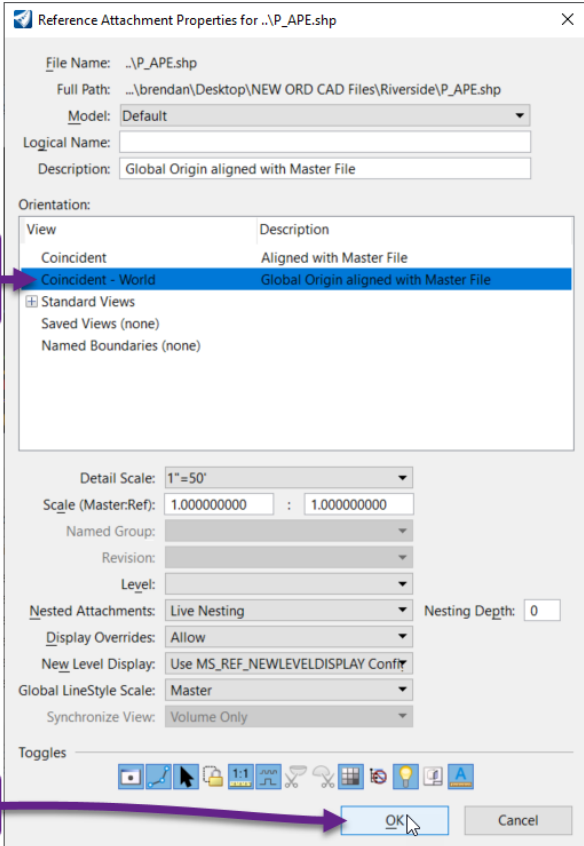
Name	Date modified	Type	Size
P_APE.shp	6/11/2019 12:21...	AutoCAD Sh...	9 KB

Files of type: Shapefiles (*.shp)

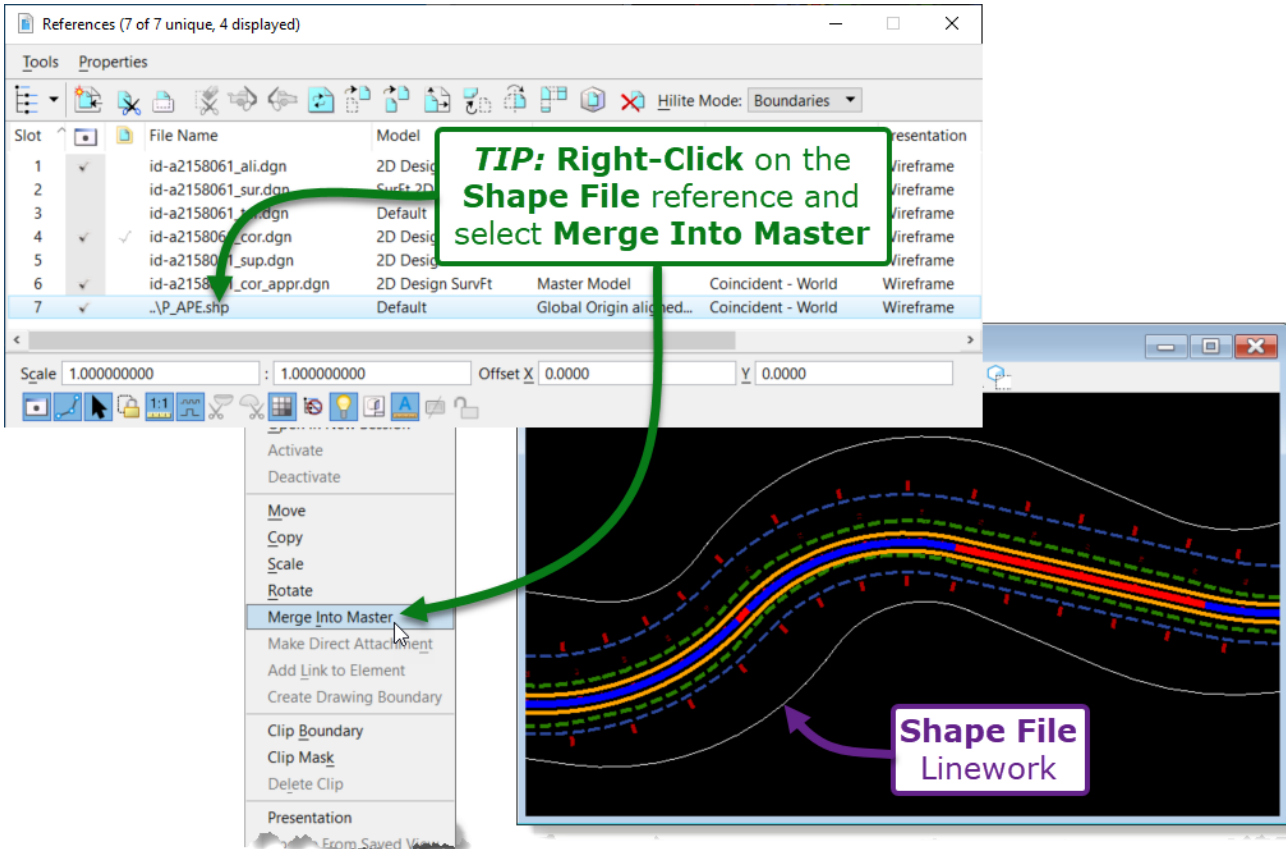
Open

5
Select
Coincident - World


6
Push OK







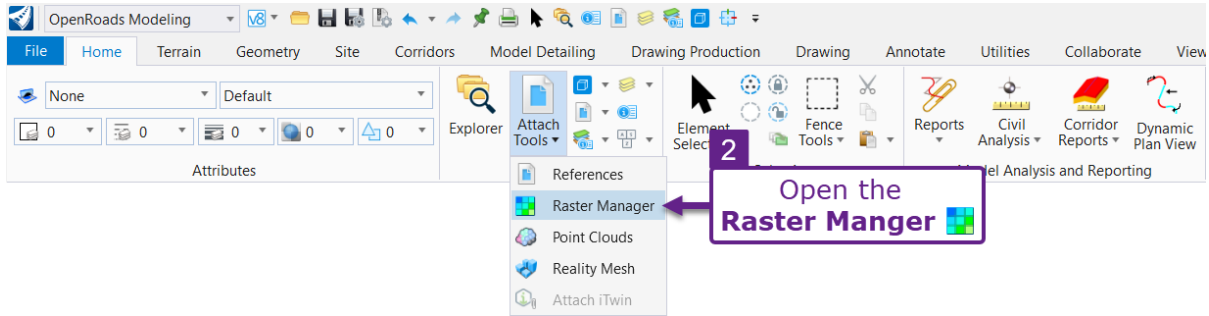
TIP: Use the *Merge Into Master* tool to import the Shape File (.shp) directly into the active ORD File. After the *Merge Into Master* tool is used, linework and elements contained in the Shape File are directly placed in the ORD File and can be edited. For more information, see 1E.7.a Merge Into Master tool (Import Reference into Current ORD File).







24C – USE A BING MAP FOR SHEET PRODUCTION AND PRINTING

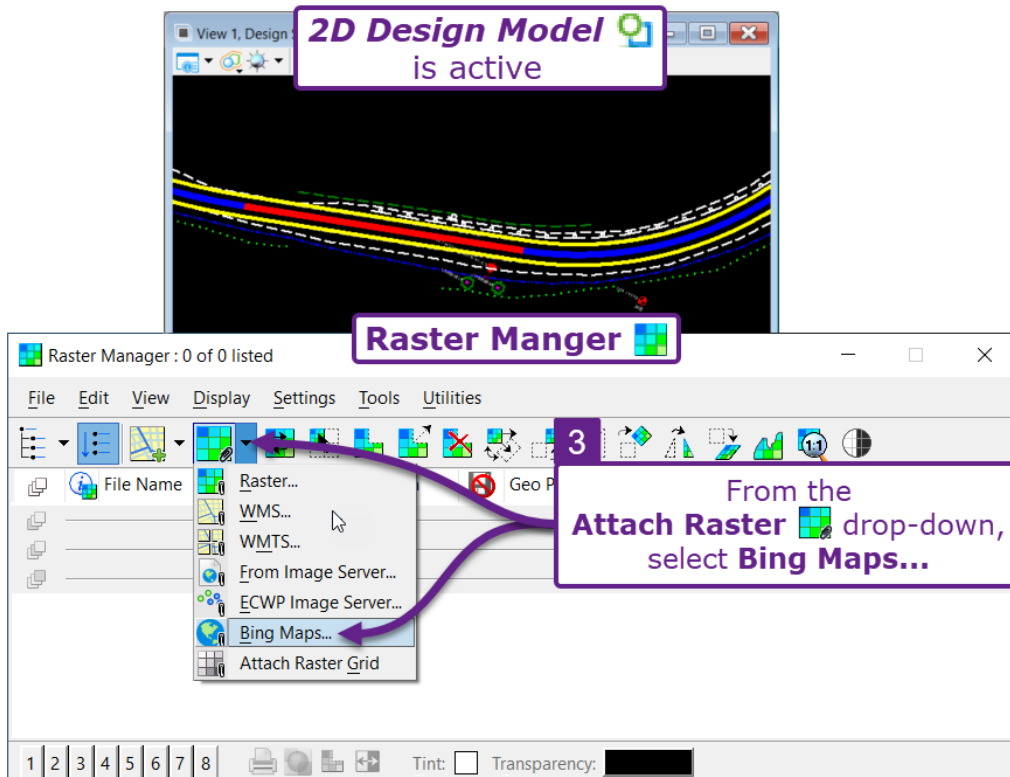
Bing Maps are provided the ORD software. Bing Maps are used in the Background Map functionality discussed in [1B.5 The Background Map](#). However, the Background Map is NOT shown in a *Sheet Model* .

To show a Bing Map for printing, it must be attached through the **Raster Manager**  in the *2D Design Model* . By attaching the Bing Map in the *2D Design Model* , the aerial will be shown and printable from the *Sheet Model* .



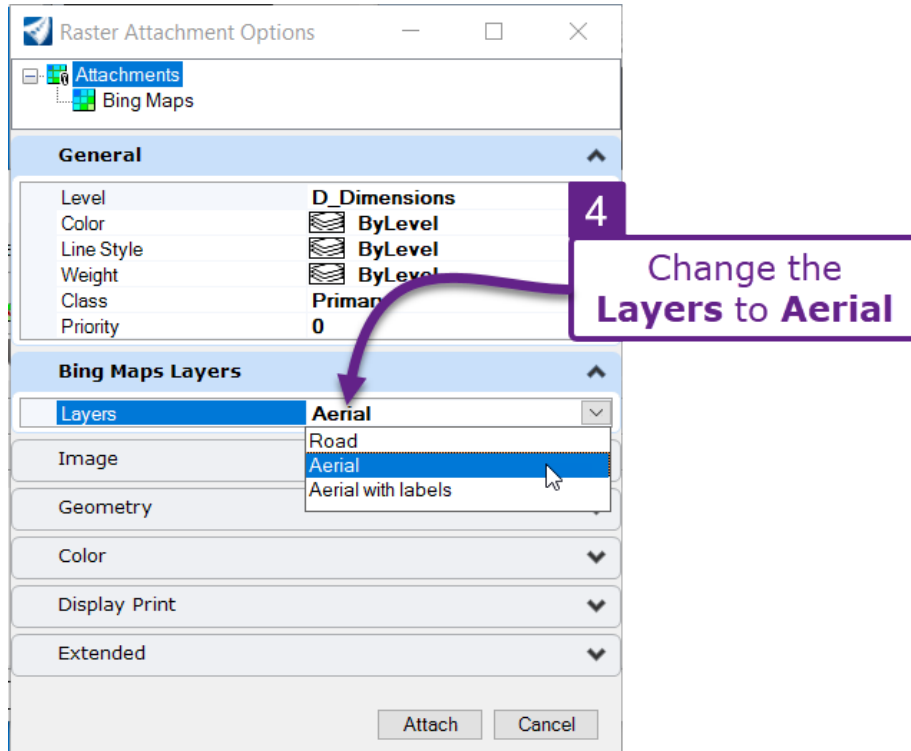
WARNING: A current defect of the ORD software is that the Bing Map raster attachment CANNOT be clipped. As a result, the Bing Map is shown throughout the entire area of the *2D Design Model* .

1	Ensure the Coordinate System is set. See 3D.1 Set the Coordinate System . The Coordinate System MUST be set to enable Bing Map functionality.
2	In the <i>2D Design Model</i>  , open the Raster Manager  . [OpenRoads Modeling workflow → Home tab → Primary group → Attach Tools drop-down]
3	In the <i>Raster Manager</i> , expand the Attach Raster  drop-down and select Bing Maps...



4

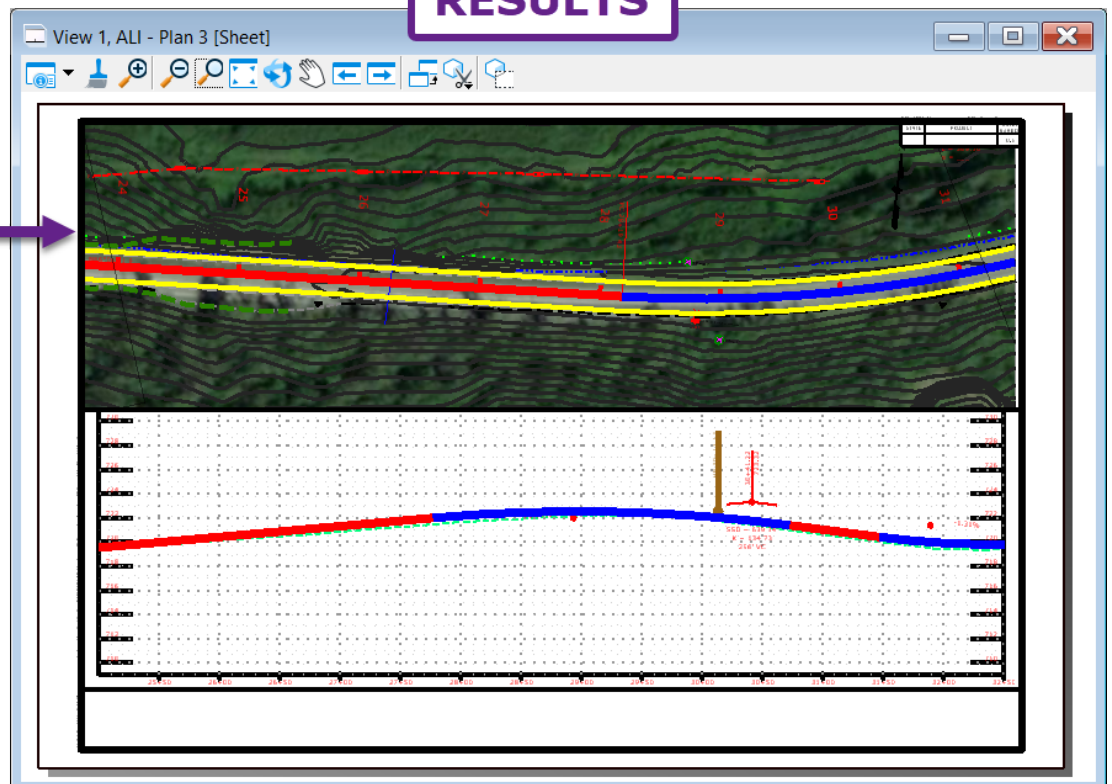
In the **Raster Attachment Options**, set the **Layers** to **Aerial**.



TIP: After attaching the Bing Map, the color settings for the aerial image can be modified in the same process shown in [24A.4 Adjust Raster Color, Brightness, and Contrast Settings](#).

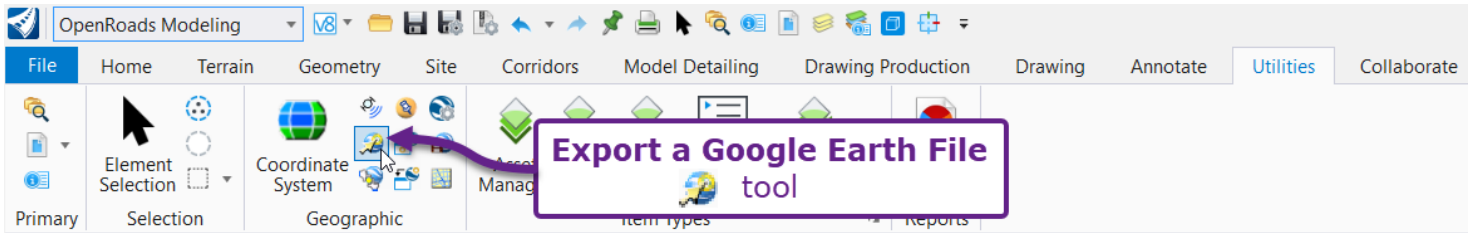
RESULTS

Bing Map shown in Sheet Model

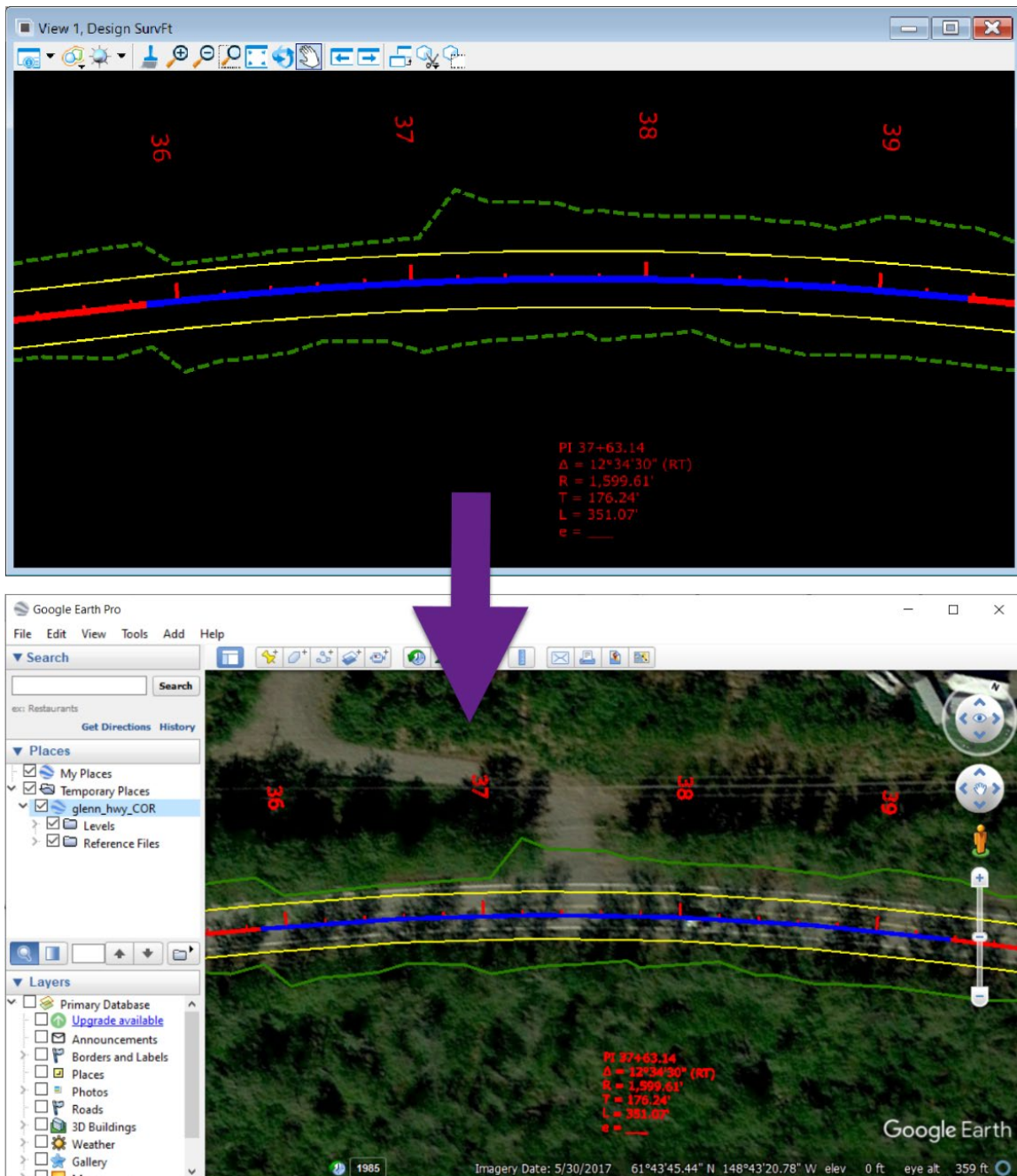


24D – EXPORT A GOOGLE EARTH KMZ FILE FROM ORD

The *Export a Google Earth File*  tool creates a KMZ file from the current ORD File. This tool is found in the Ribbon in the following location: [**OpenRoads Modeling** → **Utilities** → **Geographic**].






When this tool is used, all currently displayed elements will be exported into a KMZ file. **Levels that are turned OFF will NOT be exported.** Also, referenced elements will be exported if displayed.



24D.1 Prepare the ORD File for Export


Open an ORD File that contains the elements to be exported into the Google Earth File.


TIP: It is recommended that the *Export a Google Earth File* tool is used from the **Corridor ORD File**. The Corridor ORD File typically shows all important design and survey features.

Also, it is recommended that this tool is used from the *2D Design Model* . This tool can be used from the *3D Design Model* ; however, there is no advantage from doing so. Exporting from the *2D Design Model*  is a simpler process and allows Alignment stationing text to be exported.

Level Management Before Export: Only Levels that are currently toggled ON will be exported into Google Earth. **Turn OFF all Levels that should NOT be exported.** Also, Reference Levels will be exported if displayed. Exporting unnecessary Levels will clutter the Google Earth visualization and increase the KMZ file size.

Existing Survey Levels: Existing Survey linework may be exported into Google Earth. However, ONLY Existing Survey levels that contribute to the visualization should be exported. For example, it is probably unnecessary to export the existing edge of road linework because the existing road can be seen in the Google Earth aerial. **Underground utilities and culverts** are useful to show in the Google Earth export because these features CANNOT be seen in the aerial.

Line Styles in Google Earth: Levels that use "Built-In" Line Styles are shown as solid lines in Google Earth. For example, Cut and Fill lines use a "Built-In" Line Style and will NOT appear dashed or dotted in Google Earth. Cut/Fill Lines will appear as solid lines in Google Earth. A solution for distinguishing between Cut and Fill lines in Google Earth is shown in [24D.3.a Change the Color of a Level in Google Earth](#). Alternatively, Levels that use "Built-In" Line Styles can be remapped to a "Custom" Line Style in the Level Manager . See [24D.4.a Convert Custom Line Styles](#).

2D Design Model 

Name	Used
Default	<input type="checkbox"/>
E_HYD_Culvert	<input type="checkbox"/>
P_COR_Design_Corridor_Graphics	<input type="checkbox"/>
P_COR_Design_Template_Range_Gr...	<input type="checkbox"/>
P_HAL_Bearings	<input type="checkbox"/>
P_HAL_Centerline	<input type="checkbox"/>
P_HAL_Control_Point_Stations	<input type="checkbox"/>
P_HAL_Curve_Information	<input type="checkbox"/>
P_HAL_Stations	<input type="checkbox"/>
P_HAL_Stations_Small_Scale	<input type="checkbox"/>
P_RDW_Edge_of_Pavement	<input type="checkbox"/>
P_RDW_Slope_Stake_Fill	<input type="checkbox"/>



Toggle ON Levels that should be displayed in Google Earth.
Toggle OFF Levels that SHOULD NOT BE DISPLAYED
Examine Reference Levels

TIP: Alignment Station and Text Elements can be exported



Existing Survey Elements

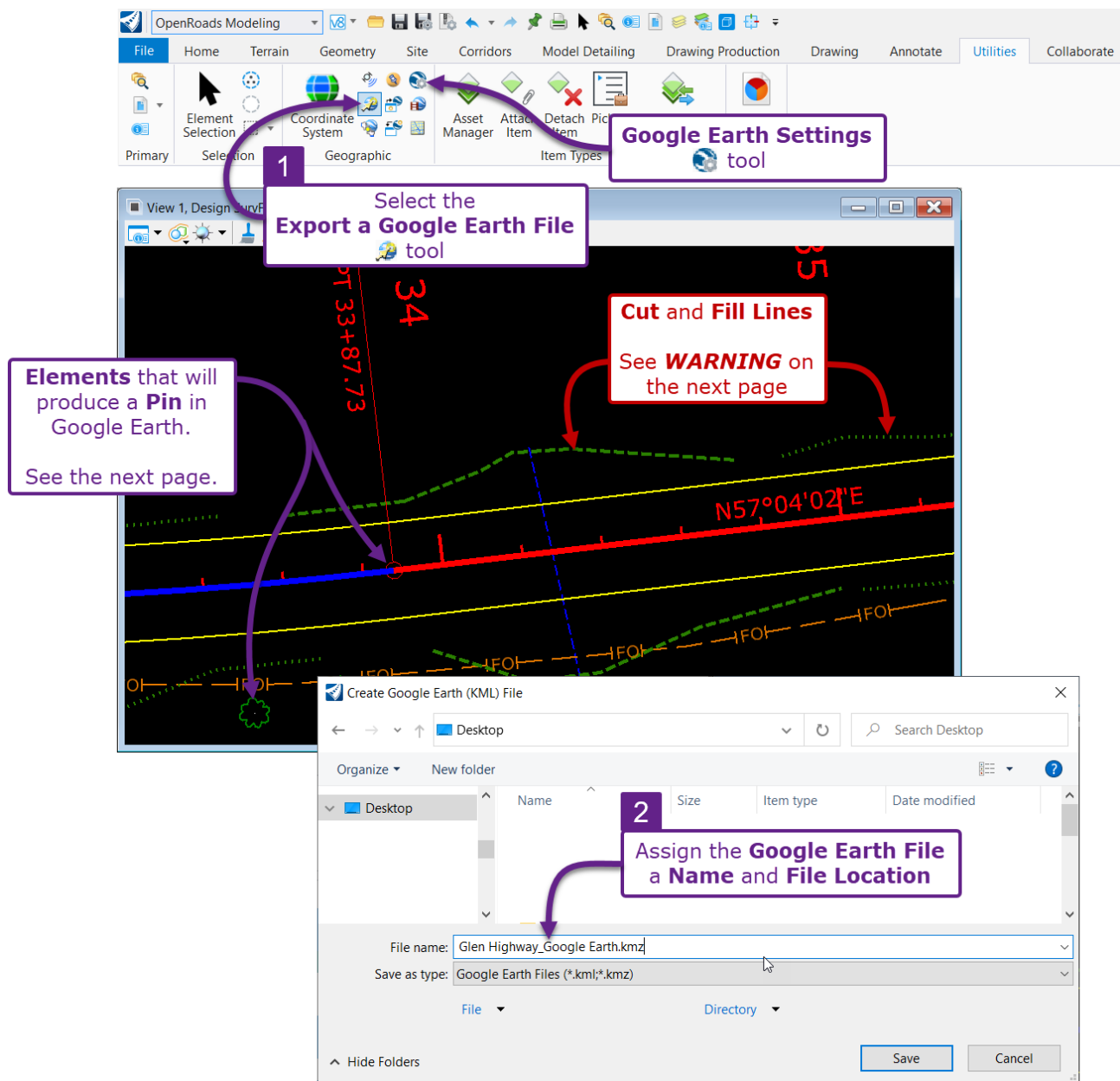
NOTE: Some ORD Levels and element types are NOT suitable for export into Google Earth. For example, Terrain Models are exported as a simple shaded area and will NOT show contours. In general, the recommended element types for export include existing/proposed linework, text, and cells. Do NOT export 3D element types, such as Template Components, Meshes, and Terrain Models.

24D.2 Use the Export to Google Earth tool

After all desired Levels have been toggled ON or OFF, the *Export to Google Earth*  tool can be used. The *Export to Google Earth*  tool is found in the Ribbon in the following location:

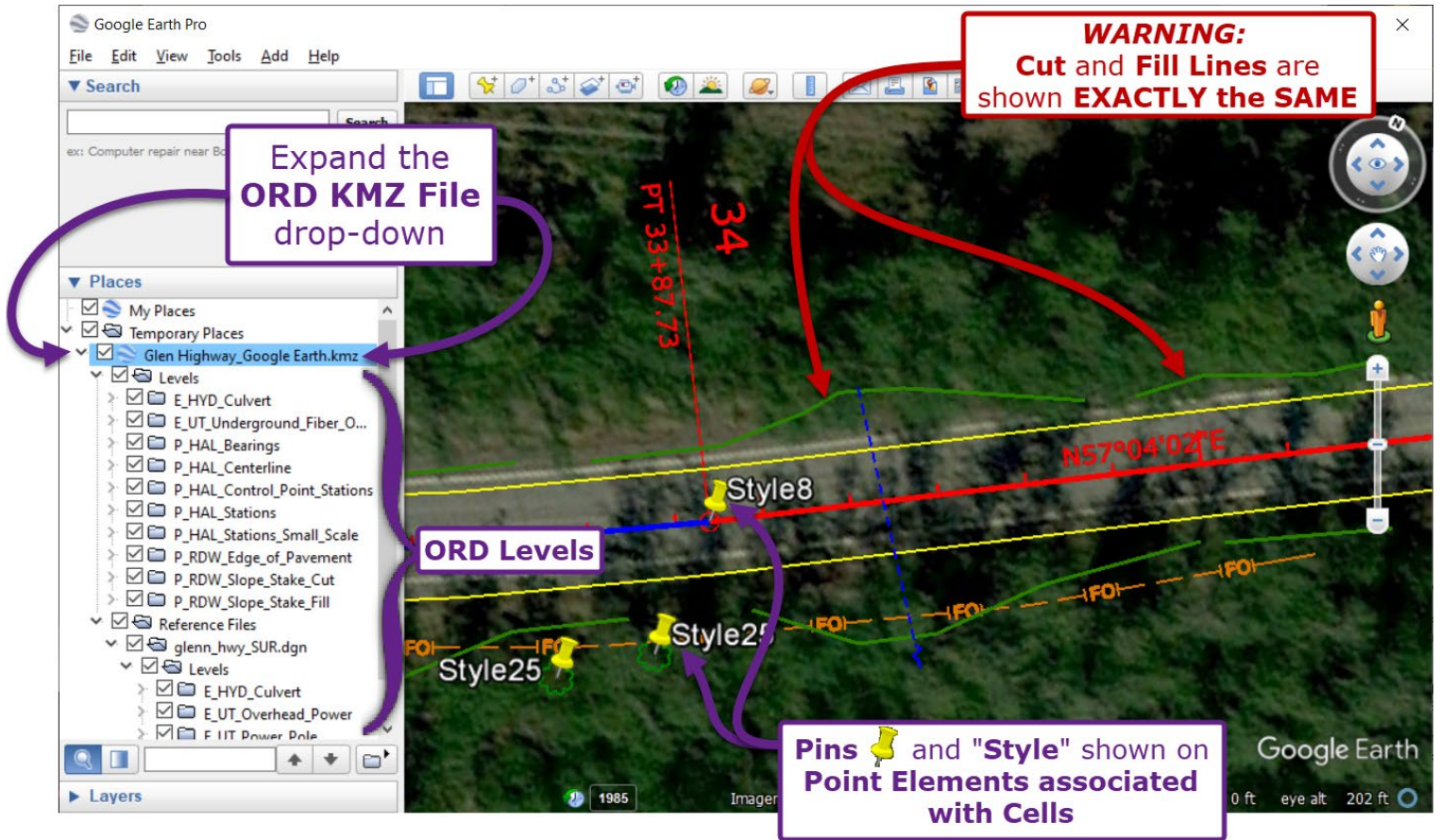
[**OpenRoads Modeling** → **Utilities** → **Geographic**].

NOTE: There are NO export settings presented when the *Export to Google Earth*  tool is used. Export settings are available through the *Google Earth Settings*  tool. The default settings are typically acceptable. However, the **Convert Custom Line Styles** may be of interest because it controls the appearance of some ORD Line Styles types in Google Earth. See [24D.4 Settings for the Google Earth Export](#) and [24D.4.a Convert Custom Line Styles](#).




24D.3 Modifications to Levels in Google Earth

When the ORD KMZ File is opened, Levels are shown on the left-side of the Google Earth software window. The display of the ORD Levels can be toggled ON/OFF with the CHECK BOXES in this location.



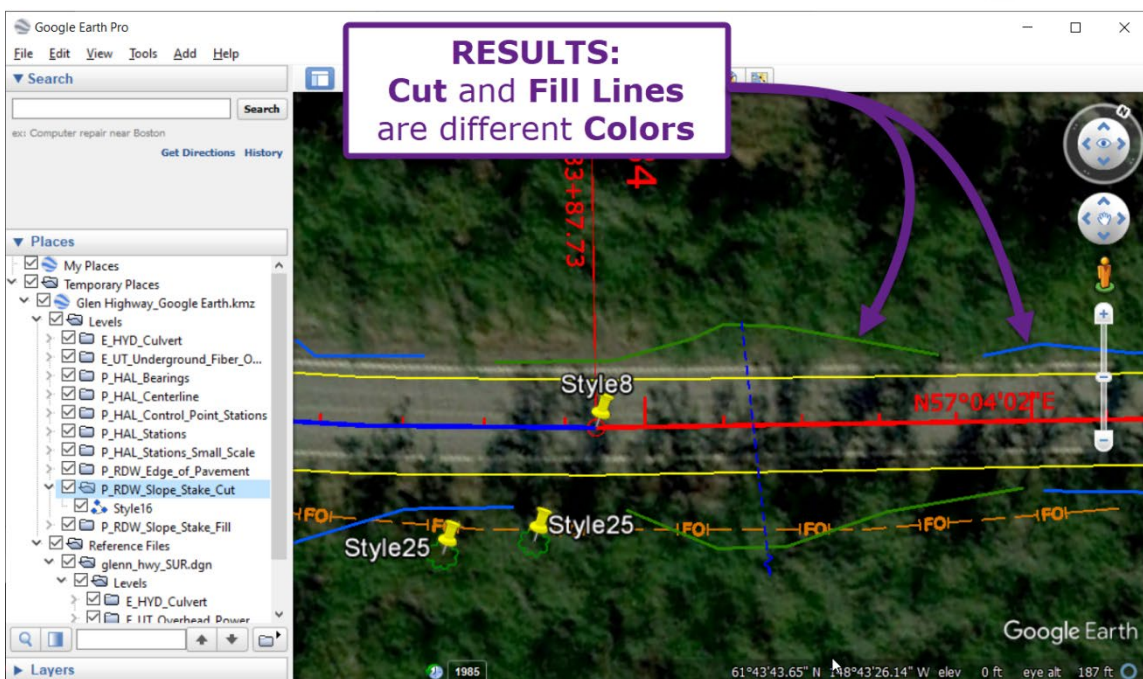
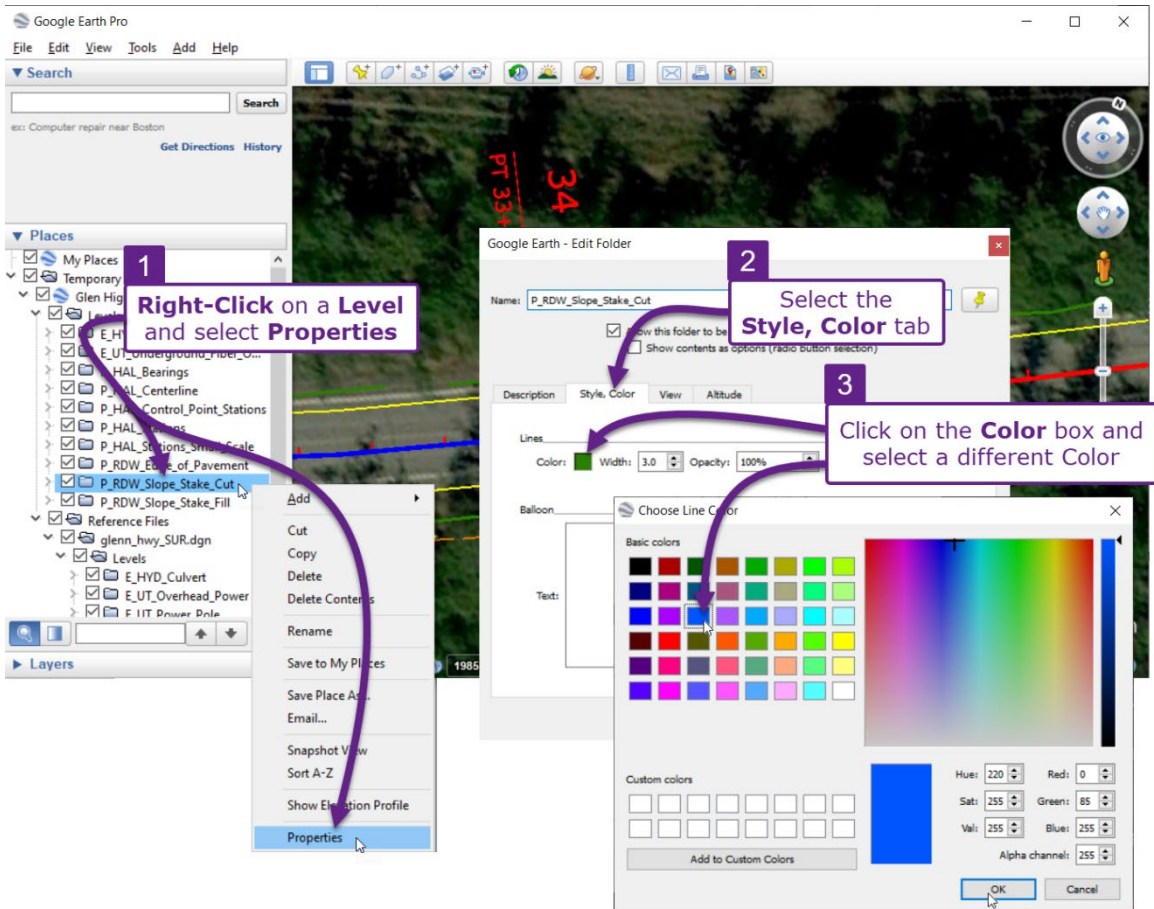
WARNING: The majority of ORD Line Styles will be shown as solid lines in Google Earth. This is problematic for the proposed Cut and Fill lines, which use dotted and dashed line styles, respectively. By default, Cut and Fill lines are shown with the same Color and Line Style in Google Earth. This makes the appearance of Cut and Fill lines undistinguishable in Google Earth. As a workaround, the Level color for either the Cut Line or Fill Line can be changed in Google Earth so that the Cut/Fill Lines can be visually differentiated. See the next page.

Alternatively, the Cut/Fill Line levels can be remapped to a "Custom Line Style" in the Level Manager , which is discussed in [24D.4.a Convert Custom Line Styles](#).

24D.3.a Change the Color of a Level in Google Earth

The color for a Level can be modified in Google Earth. In the example below, the Cut Line level ("P_RDW_Slope_Stake_Cut") is modified so that the Cut and Fill Lines are visually different.

In Google Earth, the Color for a Level is modified in the **Properties**. Locate a Level on the left-side of a Google Earth software window and right-click on it to access the **Properties**. In the **Properties** box, select the **Style, Color** tab to change the color.



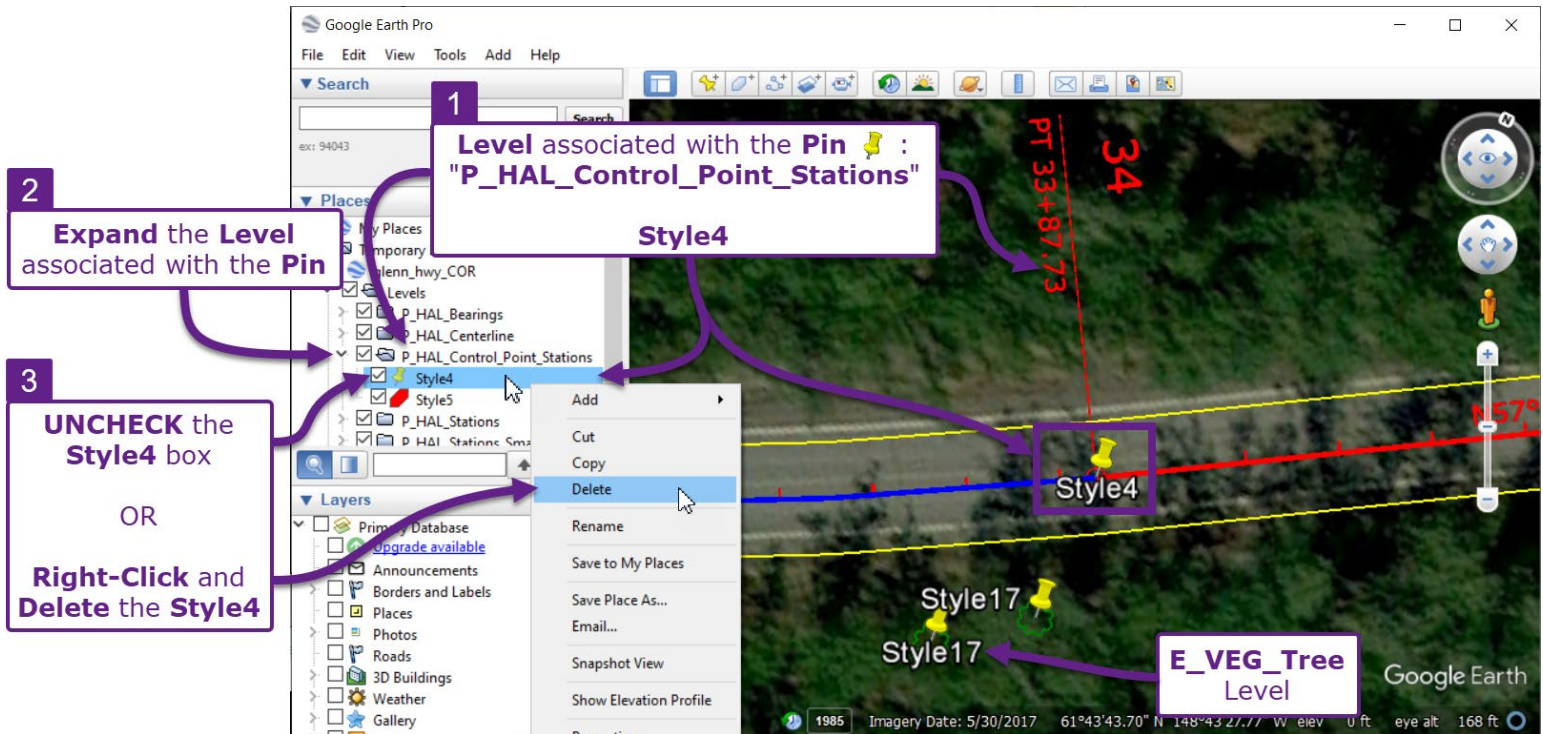
24D.3.b Deleting Yellow Pins in Google Earth

Some existing and proposed element types will place a **Pin** 📌 onto the element in Google Earth. Generally, this occurs with Point elements that are associated with a Cell.

Commonly, Pins will be placed on existing survey Levels that contain the suffix: "..._Points". For example, the "E_HYD_Culvert_Points" Level will produce a Pin in Google Earth. Another known example of an existing Level that produces a pin is the "E_Veg_Tree" level.

Typically, proposed Levels do NOT produce a Pin. However, a known example of a proposed Level that does produce a pin is "P_HAL_Control_Points_Station".

Pins can be turned off or deleted by locating the Level associated with the Pin on the left-side of the software window.





NOTE: The number shown after the pin "Style" text (i.e. "Style4") depends on the Level's chronological position in the Google Earth Level list.


In the example above, "Style4" corresponds with the "P_HAL_Control_Points_Stations" level. This is because "P_HAL_Control_Points_Stations" is positioned relatively high on the Level list.

The "E_Veg_Tree" level is denoted as "Style17", because this level is found further down in the Level list.

The Style number for these levels would be different if the Google Earth export process was run with more or less levels turned on in ORD.

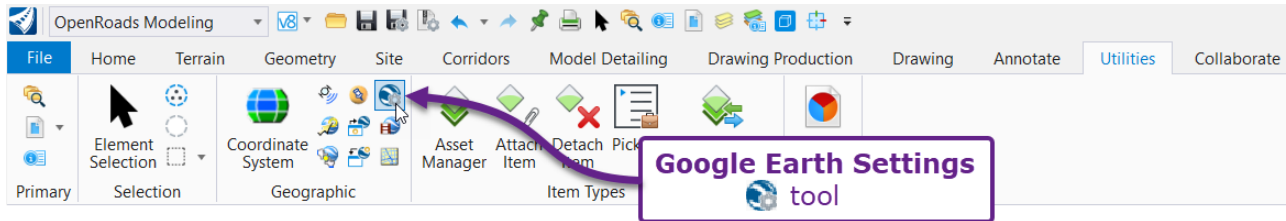
24D.4 Settings for the Google Earth Export

Settings for the *Export to Google Earth*  tool are modified with the *Google Earth Settings*  tool.

The *Google Earth Settings*  tool is found in the Ribbon in the following location:

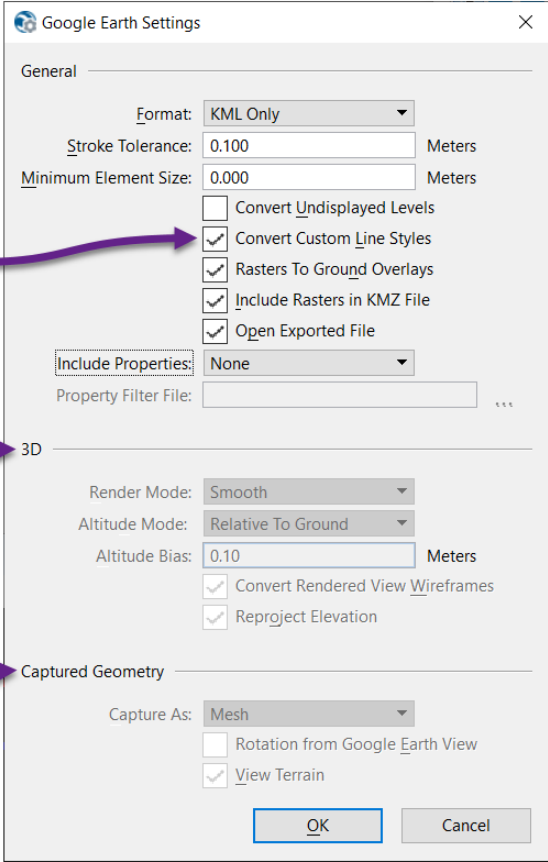
[**OpenRoads Modeling** → **Utilities** → **Geographic**].

NOTE: The default settings are acceptable for most export operations. However, the **Convert Custom Line Styles** setting affects how some ORD Line Styles are shown in Google Earth. See the next section.



Convert Custom Line Styles
setting

NOTE: The **3D** and **Captured Geometry** settings are ONLY available when exporting from the **3D Design Model** 



Google Earth Settings	
Setting:	Description:
Format	<p>The two options in this drop-down are KML Only and KML and Collada.</p> <p>If KML Only is used, then ONLY a KMZ or KML is created in the export.</p> <p>If KML and Collada is used, then a Collada file (.dae extension) is also created. Some examples of software that can import a Collada file include AutoCAD, Adobe Photoshop, and SketchUp.</p>

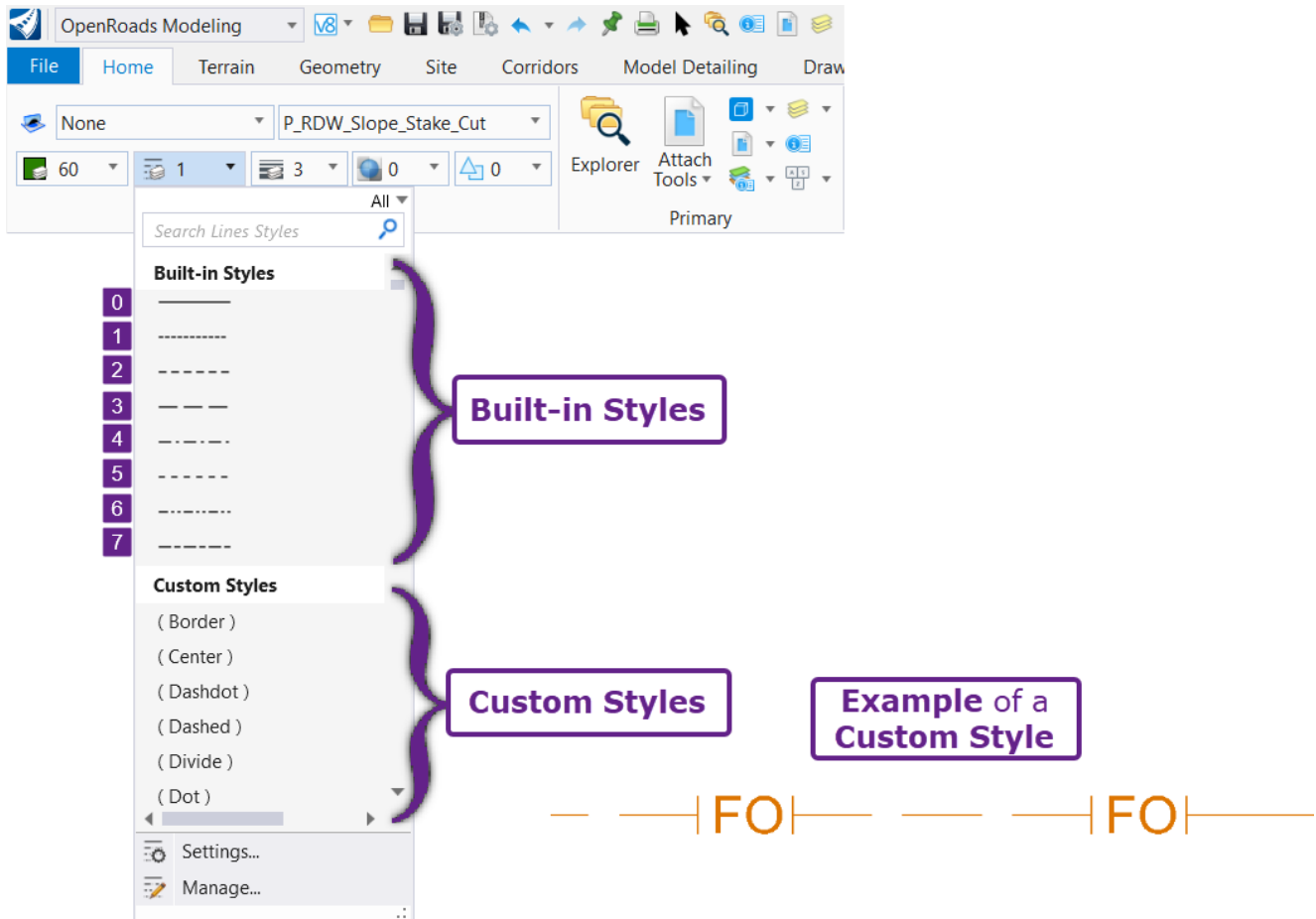
Google Earth Settings

Setting:	Description:
Stroke Tolerance	Google Earth does NOT support curved geometry. In the export process, curves and curvilinear elements are simplified into line segments. The Stroke Tolerance setting affects the overall number of line segments used to generalize a curve. If this setting is increased, then the number of line segments is decreased, which may cause the “generalized curves” to appear jagged. If this setting is decreased, then the curves appear smoother because more line segments will be used per curve. NOTE: A smaller Stroke Tolerance value will result in a greater KMZ file size.
Minimum Element Size	Provides a minimum size threshold for elements to be exported. If the size of an element is smaller than this value, then it will NOT be included in the export. BEST PRACTICE: Keep this value set to 0. Determine which elements will be exported through Level management.
Convert Undisplayed Levels	If this box is CHECKED, all Levels in the current ORD File and Reference ORD Files are included in the export. If UNCHECKED, Levels that are toggled OFF are NOT included in the export. BEST PRACTICE: Keep this box UNCHECKED to reduce KMZ file size.
Convert Custom Line Styles	See the next page.
Raster to Ground Overlays	If CHECKED, then 2D raster images in ORD are draped onto the Google Earth surface.
Include Raster in KMZ File	If CHECKED, then currently displayed Raster images (i.e., an aerial) are included in the export.
Open Exported File	If CHECKED, then Google Earth and the resulting KMZ file are automatically opened after the export. If UNCHECKED, then Google Earth is NOT automatically opened.
Include Properties	The three options in this drop-down are None, All, and Filtered by File. If All is selected, then text relating to each exported element is shown atop the elements in Google Earth. The properties text is very cluttering, distracting, and does NOT show meaningful information. If None is selected, then exported elements do NOT contain properties text in Google Earth. If Filtered by File is selected, then a Property Filter File can be selected to control which element types and levels are assigned properties text. BEST PRACTICE: Set this option to None.
Property Filter File	This option is ONLY available if the Filtered by File option is used. NOTE: FLH Workspace does NOT contain Property Filter Files for support of this option.

24D.4.a Convert Custom Line Styles

In ORD, there are two types of Line Styles: Built-In Styles and Custom Styles. The **Convert Custom Line Styles** setting determines if Custom Line Styles are shown accurately in Google Earth.

IMPORTANT: Most Levels in the FLH WorkSpace use Built-In Styles. Built-In Styles are ALWAYS shown as solid lines in Google Earth. See the next page.




If the **Convert Custom Line Styles** box is **CHECKED**, then **Custom Styles** are shown in Google Earth as they appear in ORD. In the exporting background process, the Custom Styles are broken down into smaller geometrical elements. This setting results in an increased KMZ file due to the conversion of Custom Line Styles.

If the **Convert Custom Line Styles** box is **UNCHECKED**, then Custom Styles are shown as solid lines in Google Earth. When this box is UNCHECKED, the resulting KMZ will have a smaller file size.

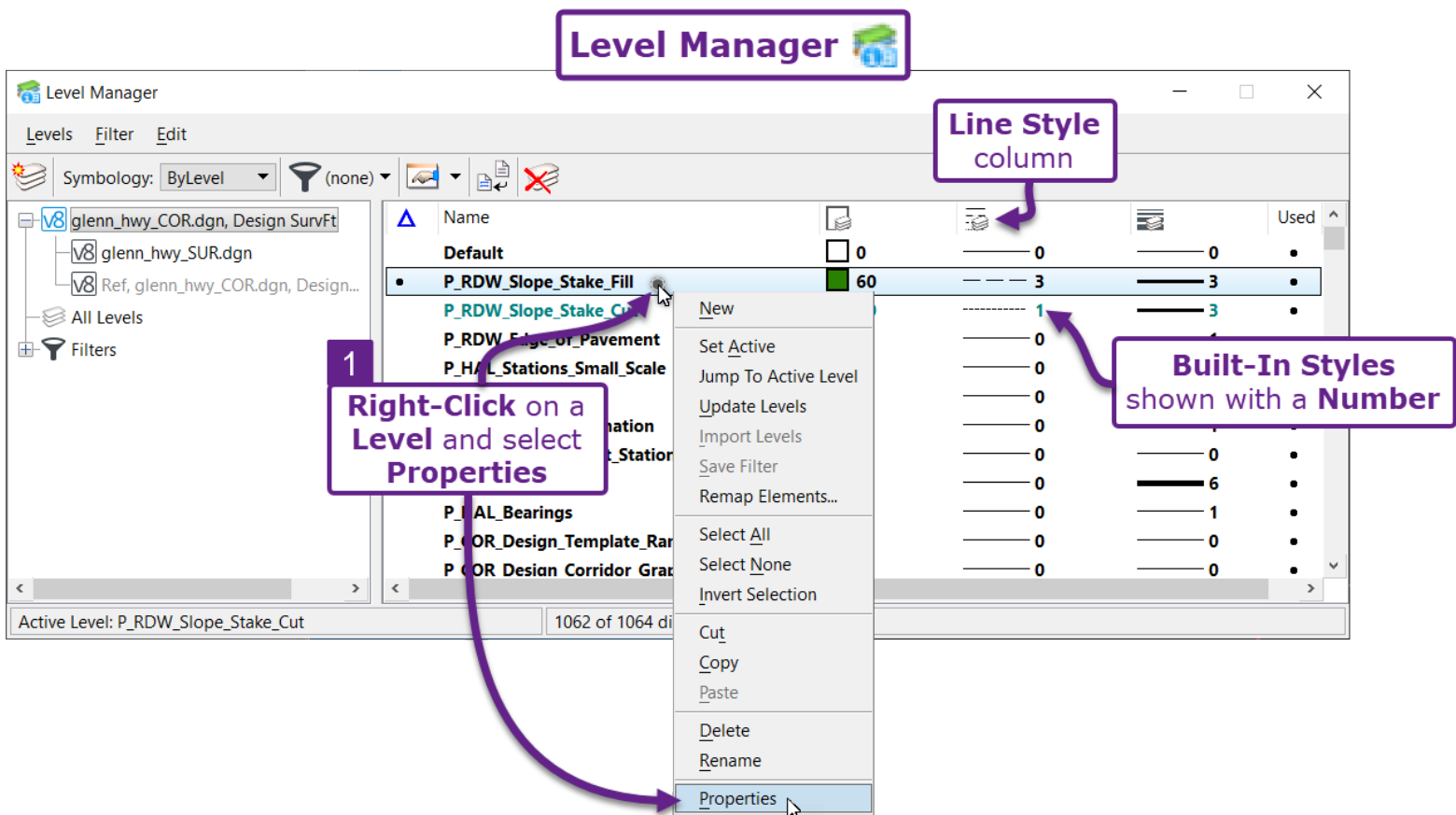


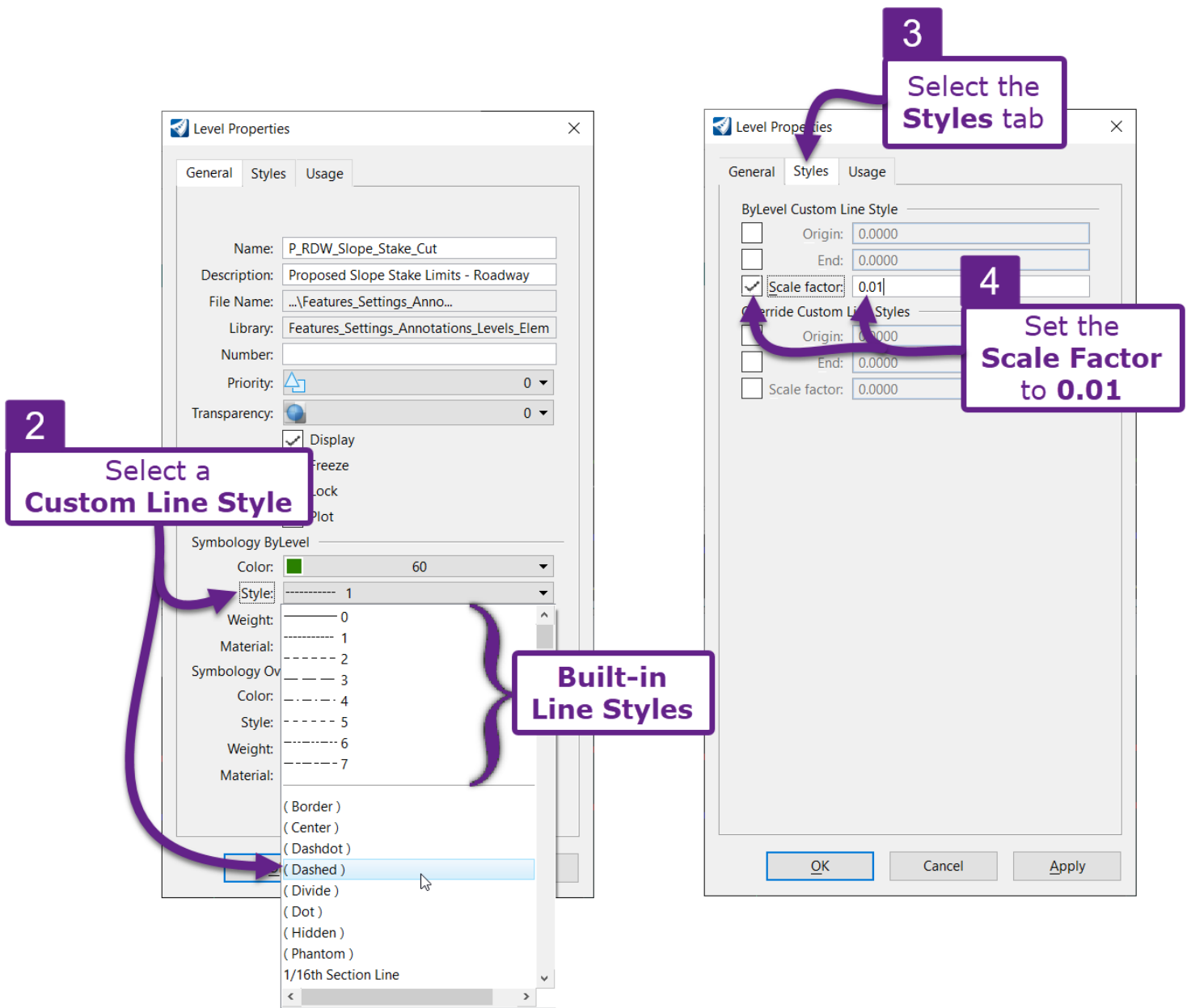
Built-In Styles may appear dashed or dotted in ORD but will ALWAYS be shown as solid lines in Google Earth. For example, Cut and Fill Lines are assigned to Built-in Style (1) and Built-in Style (3), respectively. As a result, Cut and Fill Lines are shown as solid lines in Google Earth.

There are 8 types of Built-in Styles that are numbered 0-7. In the Level Manager , Built-in Styles can be identified by a number shown in the **Line Style** column.


As shown in the procedure below, the Line Style for a Level can be reconfigured from a Built-in Style to a Custom Style. By doing so, Levels that use dashed or dotted Built-in Styles appear more accurately in Google Earth.

WARNING: Do NOT perform this procedure directly in a Design ORD File (i.e., the Corridor ORD File). Reconfiguring a Line Style directly in a Design ORD File will affect the display of the Level in all Plan Sheet ORD Files. Instead, create a new ORD File specifically for the Google Earth export. Reference in the Design ORD File and override the Line Styles in the new ORD File. For more information, see [1G.5.b Manipulate Symbology Attributes for Referenced Levels](#).





Selecting a Custom Line Style: Custom Line Styles that are shown in parentheses [i.e., “(Dashed)”] can be used to mimic Built-In Line Styles. However, the **Scale Factor** must be greatly reduced for the Custom Line Style to display correctly.

Scale Factor: By default, most Custom Line Styles shown in parentheses contain a default Scale Factor that is too large. As shown above, begin by setting the Scale Factor to 0.01. Next, locate and examine an element assigned to the overridden Level in the *2D Design Model* . If the Custom Line Style appears too large or small, adjust the Scale Factor accordingly.

After this procedure is performed, **ensure the Covert Custom Line Styles setting is enabled** before exporting to Google Earth.

24E – IMPORT A KMZ FILE INTO ORD

Unfortunately, .KMZ and .KML files CANNOT be directly imported into the OpenRoads Designer software. A .KMZ or .KML file must be converted to a different file format for importation.

For example, a .KMZ/.KML file can be imported into the SketchUp software and saved as a .skp file. The SketchUp (.skp) file that contains the .KMZ/.KML file can then be imported ORD.

Alternatively, contact GIS personnel to convert the .KMZ/.KML data into a Shape File (.shp). To import the Shape File (.shp) into ORD, see [24B – Import a Shape File \(.shp\)](#).