LAB 4 - Geometry Management

This lab illustrates some of the common commands used to manage geometry for a project.

Chapter Objectives:

- Copy a geometry project
- Rename alignments

The following files are used in this lab:

- C:\Projects\12345\Design\Drawings\Reference_Files\12345DES_Geometry-Management.dgn
- C:\Projects\12345\ROW_Survey\InRoads\Geometry\12345SURV_Fieldbook.alg

Lab 4.1 - Copy a Geometry Project

Section Objectives:

- Access a Geometry Project created by the Survey/ROW discipline
- Save the renamed Geometry Project in the Design project folder (vs. the Survey folder)
- Rename horizontal alignment names, add/modify descriptions, and review the geometry styles assigned to the alignments
- 1. From the **Geometry** tab in the InRoads *Explorer* window, right-click on **Geometry Projects** and select **Open** from the right click menu.

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2. Navigate to the directory C:\Projects\12345\ROW_Survey\InRoads\Geometry.

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3. **<D>** the Geometry Project **12345SURV_Fieldbook.alg**.

4. **<D> Open** then **Cancel** button. The *Open* dialog box is dismissed

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At this point, a 'copy' of the survey geometry project is loaded into memory. The following steps will rename the geometry project and save this copy in the Design discipline folder.

Note: Loading a file into InRoads makes it the active entity by default.

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Geometry Project:	12345SURV_Fieldbook01	Арріу
Name	Description	Help
Default 12345SURV_Fieldbo	ook01	
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To – Geometry Project:	FB-Working Copy	
To - Geometry Project: Description:	FB-Working Copy Copy of Survey Data	

5. Select Geometry > Copy Geometry.

- 6. On the *Projects* tab, in the *From* section select **12345SURV_Fieldbook01**.
- 7. In the *To:* field key in *FB-Working Copy*.
- 8. In the *Description:* field key in *Copy of Survey data*.
- 9. **<D>** the **Apply** then **Close** buttons.
- 10. Verify the copy is created by checking the InRoads Explorer pane.

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11. In the InRoads explorer pane, <**R**> on the **FB-Working Copy** geometry project and select **Save As...** from the right click menu. The *Save As* dialog box is displayed.

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12. Navigate to the C:\Projects\12345\Design\InRoads folder. If necessary, use the drop-down arrow in the *Active* field and reselect FB-Working Copy to ensure the saved file name will match the active surface name.

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Save

Cancel Help

Options...

13. **<D>** the **Save** then the **Cancel** buttons. The *Save As* dialog will close.

FB-Working Copy.alg

FB-Working Copy

Geometry Projects (*.alg)

File name:

Active:

Save as type:

Network

Note: To minimize confusion, be sure to save the geometry project with the same name seen in the InRoads Explorer pane.

14. The original geometry project generated by the survey staff is no longer required. In the InRoads explorer pane, <**R**> on the geometry project name **12345SURV_Fieldbook** and select **Close** from the right click menu.

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- **Note:** This will 'unload' the geometry project from memory. It does not delete any files from the hard drive.
- 15. **<D> Yes** and verify the geometry project is removed from memory.



Section Summary:

• Specialty groups using ROW/Survey geometry files should always make their own copy of the original data.

Lab 4.2 - Renaming Alignments

In the case of the geometry project copied in the previous exercise, the horizontal alignment names (and geometry styles) were assigned when the survey fieldbook was exported based on the InRoads Survey feature table (FWF file). These attributes are assigned based on the feature coding assigned in the field. These names accurately reflect the coding used in the field, but could benefit from more intuitive naming.

Section Objectives:

• Modify the alignment names, add descriptions, and assign appropriate Geometry Styles.

Graphics clean-up

Before continuing with this lab, delete all visible graphics in your MicroStation file using the element selection tool or a fence. Note that you are deleting the graphical display of data, not the data itself. The graphics could be redisplayed using the InRoads display commands shown in previous sections.

Note: The screened topography and the training guides are either locked graphics or in an attached reference file, you will not be able to delete these graphics and will use them for orientation.

Renaming Horizontal Alignments

1. **<D>** on the InRoads icon in the top left corner of the view window and **<D> View Save/ Recall** from the menu.

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		Move						
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	-	Minimize						
		Maximize						
	x	Close	Alt+F4					
		View Attributes						
		Level Display						
		View Save/Recall						

- 2. From the *Saved View* dialog box highlight Survey Alignments.
- 3. **<D>** the **Apply Saved View** and then **<D>** in **View 1**.

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4. Close the *Saved Views* dialog box.

5. Verify that the view name includes Survey Alignments. The view window should look similar to the following image.



6. Display alignments **13205** and **131979**. <**R**> on the alignment and select **View** from the right click menu.

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· ↓ 1310128	16108	Fence-Barbed	cferree	Review
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The the alignments should show up in the view window as shown below.

- 7. Select Geometry > Rename Geometry from the InRoads main menu. The *Rename Geometry* dialog box is displayed.
- 8. From the *Type:* drop-down menu select Horizontal Alignment.

🚔 Rename Geomet	ry	_ 🗆 🔀
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From		
Geometry Project:	FB-Working Copy	Close
Horizontal Alignment:	131979 +	Help
Vertical Alignment:		
Name	Description Style	
20429	Culvert Corr Steel Pip T_Cul Corr Stl 18"	
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131081	Edge of Oil T Edge of Oil	
131682	Traffic Control Doubl T_Traffic Double	
131884	Traffic Control Single T Traffic Single S	
1319/9	Traffic Control No Pa I_Traffic No Pass ▼	
- To		
Name:	Ex CL Seg A	
Description:	Ex centerline segment A	
Style:		
ory.o.	ALG_EXISTING	

- 9. In the *From* section, verify the *Geometry Project* is FB-Working Copy.
- 10. In the *From* section list locate and *<D>* on alignment **131979**.

Note: This alignment represents the centerline of existing pavement.

- 11. In the To section key in the Name: Existing CL Seg A.
- 12. Key in the Description: Ex centerline segment A.
- 13. Set the *Style: ALG_EXISTING*.
- 14. **<D>** the **Apply** button. A confirmation dialog box is displayed.

Hert	×
Do you want to rename horizontal alignment '131979' to 'Existing CL Seg A' and update the file on the disk?	
Yes No	

- 15. **<D>** the **Yes** button to confirm the change and dismiss the confirmation box.
- 16. Rename the centerline alignment 13205 using the following information:
 - Name: *Existing CL Seg B*
 - Description: *Ex centerline segment B*
 - Style: *ALG_EXISTING*
 - **Note:** You can use the dialog selection icon **+** to graphically identify the alignments for renaming.
 - *Important!* Profile or Cross Section sets that were created based on the original alignment names will lose their linkage to the alignment names after renaming of the alignments. Geometry renaming should be done prior to the generation of Profile or Cross Section sets.
- 17. Close the *Rename* dialog box and check the InRoads explorer window to verify the results.

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Renaming Vertical Alignments

Two horizontal alignments have been renamed, a description has been added and the alignments are assigned the appropriate geometry style. Horizontal alignments are 'parent' alignments which can contain 'child' vertical alignments.

- 18. In the InRoads explorer, **<D>** the **Geometry** tab.
- 19. Check the horizontal alignments for associated vertical alignments by expanding the + icon.

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	13214	Traffic Control Single Solid White	cferree		
	13216	Traffic Control Single Solid White	cferree		
13205	16101	Fence-Barbed Wire	cferree		
132103	16108	Fence-Barbed Wire	cferree		
	\$ 20429	Culvert Corr Steel Pipe 18"	cferree 👻		
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- 20. Select Geometry > Rename Geometry. The *Rename Geometry* dialog box is displayed.
- 21. From the *Type:* drop-down menu select Vertical Alignment.
- 22. In the *From* section verify the *Geometry Project* is set to FB-Working Copy.
- 23. Verify the active *Horizontal Alignment* is set to Existing CL Seg A.
- 24. **<D>** on alignment **131979** from the *Vertical Alignment* list.

Note: This alignment represents the vertical elevations of existing pavement.

- 25. In the To section key in the Name: Existing Pavement.
- 26. In the Description: field, key in Surveyed elevations.
- 27. Set the *Style*: to ALG_EXISTING_Vert.
- 28. **<D> Apply** then **<D> Yes** button.

Next, change the name of the vertical alignment attached to Existing CL Seg B.

- 29. Now set the active *Horizontal Alignment* to Existing CL Seg B in the *From* area of the *Rename Geometry* dialog box.
 - **Note:** You can use the graphic selection icon <u>+</u> to graphically identify the alignments for renaming.

- 30. In the To section, key in the Name: Existing Pavement.
- 31. key in *Surveyed elevations* for the *Description*:.
- 32. Set the *Style:* ALG_EXISTING_Vert.

Rename Geometry	, ,		
уре:	Vertical Alignment	-	Apply
From Geometry Project: Horizontal Alignment: Vertical Alignment:	EB-Working Copy Existing CL Seg A 131979	• • •	Close Help
Name	Description	Style	
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To Name:	Existing Pavement	_	
To Name: Description:	Existing Pavement Surveyed Elevations		

33. **<D> Apply** then **<D>** the **Yes** button in the confirmation box.

34. **<D> Close** the *Rename Geometry* dialog box.

A copy of the ROW/Survey's geometry project was made. Key alignments were renamed and assigned appropriate styles. The alignments now have intuitive name and conform to CDOT design standards.

This is a good time to save the Geometry Project to disk.

35. **<R>** on the geometry project **FB-Working copy** and select **Save As** from the right click menu.

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36. This will overwrite the geometry project FB-Working Copy stored in the folder *C:\Projects\12345\Design\InRoads*.

Section Summary:

• Rename Geometry is used to rename geometry, add or revise a description, and/or update the associated style

Chapter Summary:

- Take care not to inadvertently edit or delete another group's work. Communication is the key to reducing data loss.
- Survey geometry has names meaningful to them, but possibly not to other groups. Rename your copy of survey's geometry data.