



Ferrovia

by **CGS Labs**



From Civil 3D to Ferrovia: A Railway Conversion Tutorial



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INTRODUCTION

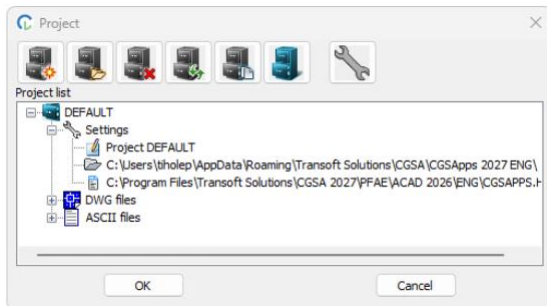
This guide explains how to transfer a railway alignment and its associated vertical profile from Autodesk Civil 3D to CGS Labs Ferrovia. The workflow involves converting the Civil 3D alignment and profile within the current drawing, exporting the converted data, and then importing it into a new drawing.

The tutorial provides step-by-step instructions for converting the alignment and profile, saving the required files, importing them into a new drawing, draping the alignment onto a terrain surface, and creating a profile view. Once the data has been transferred, you can continue with the standard railway design process in Ferrovia.

NOTE: The direct conversion command is available only to Autodesk Civil 3D users. BricsCAD users can transfer alignment data using the LandXML format. Cant data cannot currently be transferred automatically and must therefore be entered manually in the Cant Editor.

1. From Autodesk Civil 3D to CGS Labs Software Solution

First, you need to initialize the project. On the **Layout** ribbon, run the "**Project(22A1)**" command, then click **OK** in the dialog box.

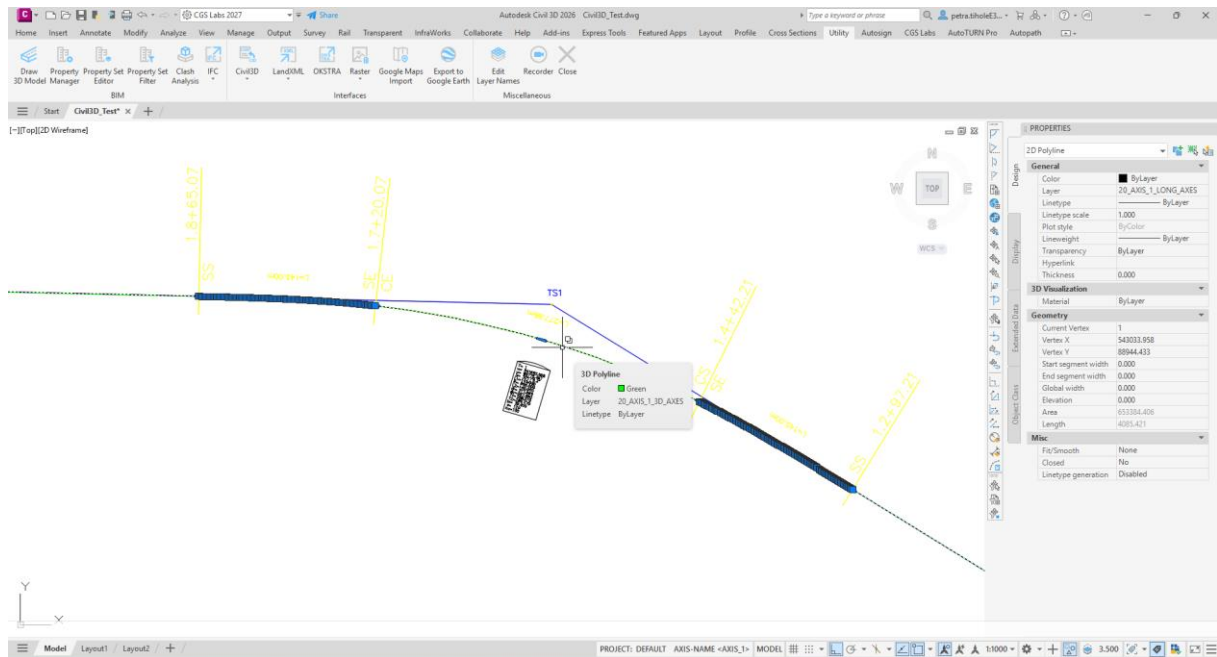


In the next step, run the Civil 3D → CGS command to convert the Civil 3D alignment and profile into a Ferrovia alignment and profile.

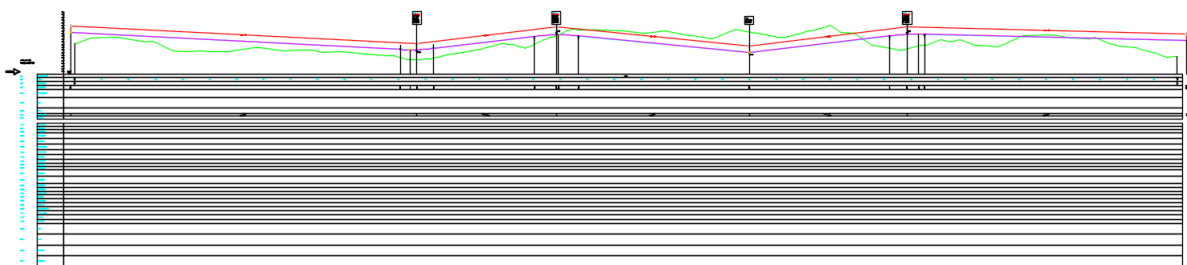
1. Run the <u>Civil3D->CGS</u> command.	
2. Select the alignment from the drop-down menu. Based on the data from the Civil 3D program, the data for surface profile and profile are automatically selected. 3. Define the axis name (output elements). 4. Click on the Settings button.	
5. Select the table definition from the drop-down menu. 6. Define the horizontal and vertical scales. You can select the number from the drop-down menu or type the number directly in the window. 7. Click OK. 8. Then click OK again in the "AutoCAD Civil 3D -> CGS Labs" dialogue box.	
9. Then you define the insertion point for the profile table directly in the drawing.	

The Ferrovia alignment and profile are drawn for you in the drawing.

Alignment:



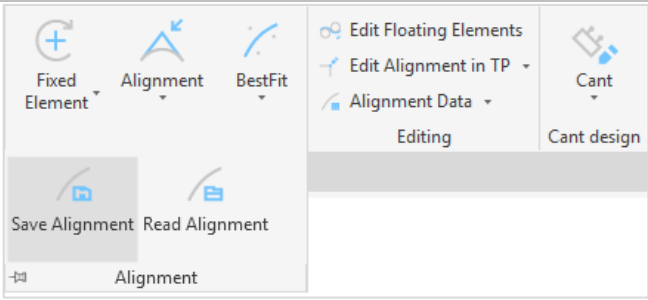
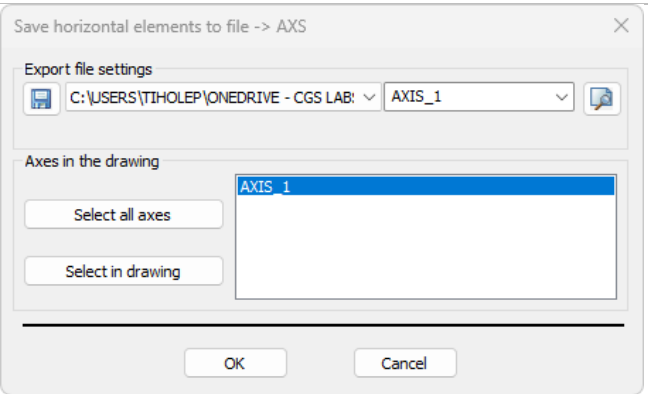
Profile view:



2. Export to a new drawing

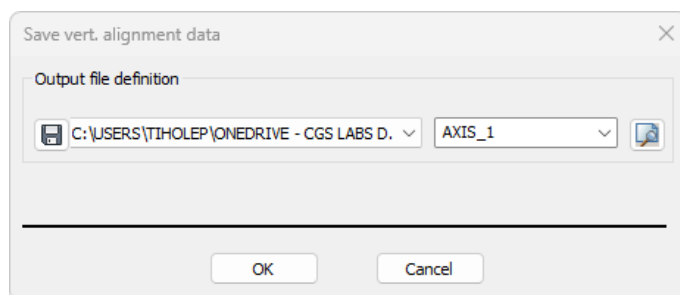
If desired, the CGS axes can be exported to a **new drawing**.

2.1 Save alignment

1. Run the "<u>Save Alignment (22E6)</u>" command.	
2. Define the output file settings: - Click the folder icon and select the save location. 3. Click OK.	

2.2 Save tangents and vertical alignment

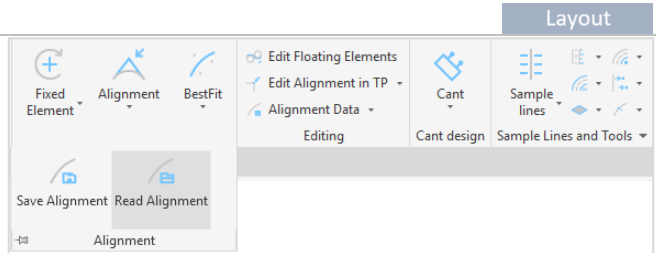
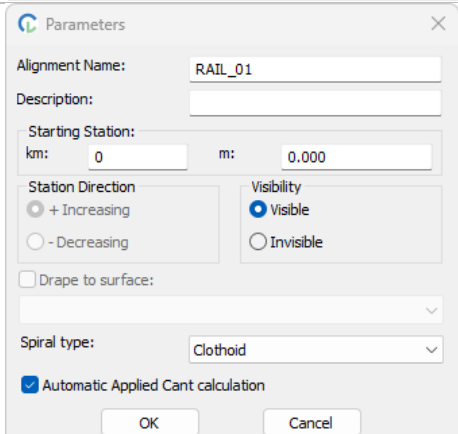
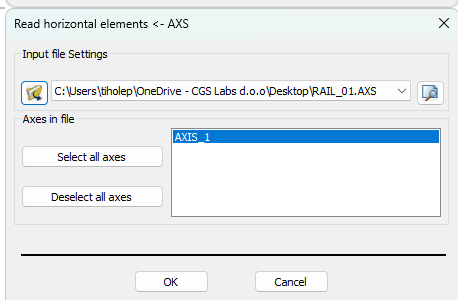
1. Run the "Save Profile->TAN (32G4)" command.
2. Define output file settings.

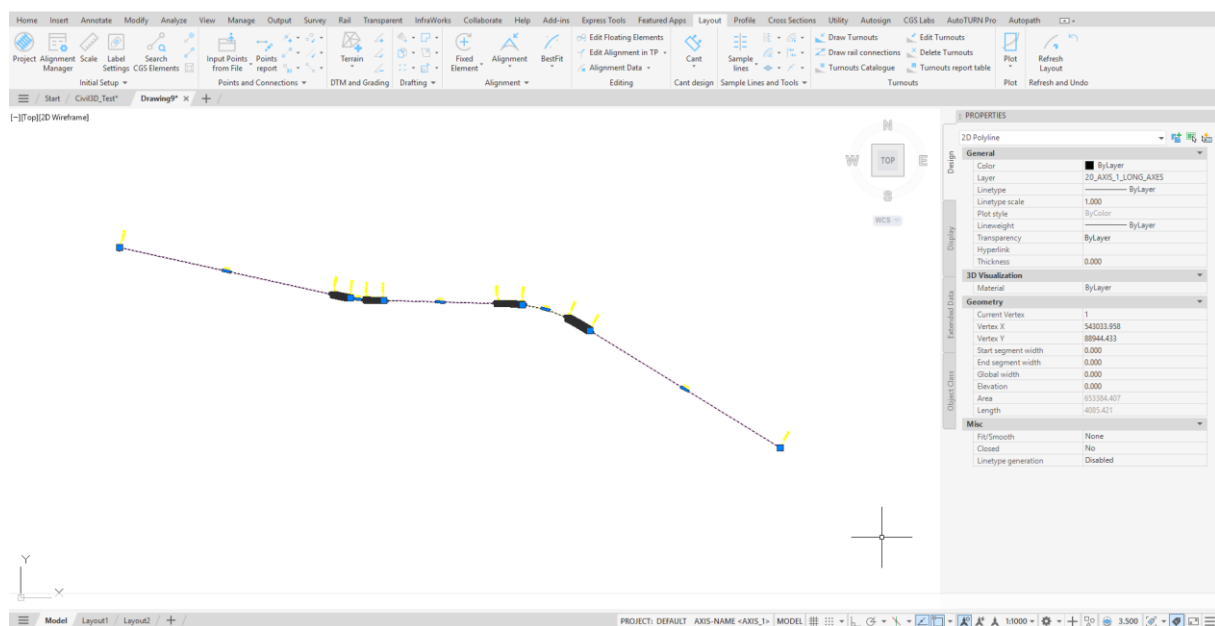


3. Click OK.

3. Import Alignment and Profile in a new drawing

3.1 Import Alignment

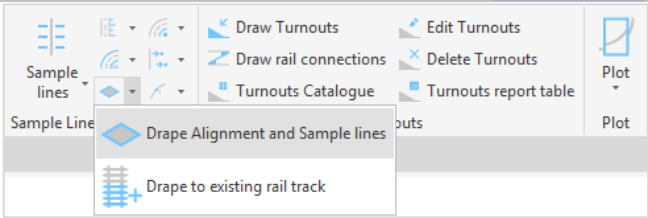
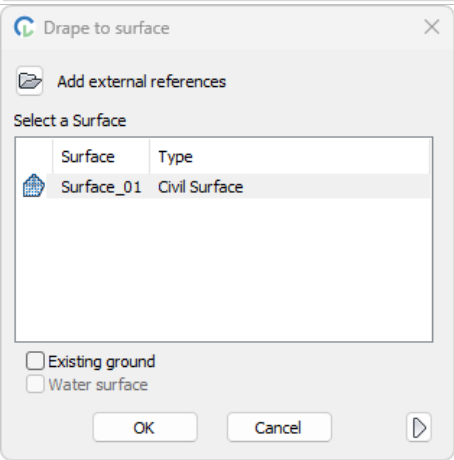
1. Run the " <u>Read Alignment (22E7)</u> " command.	
2. Define alignment name and check the drape to surface option. 3. Click OK.	
4. Define input file settings.	



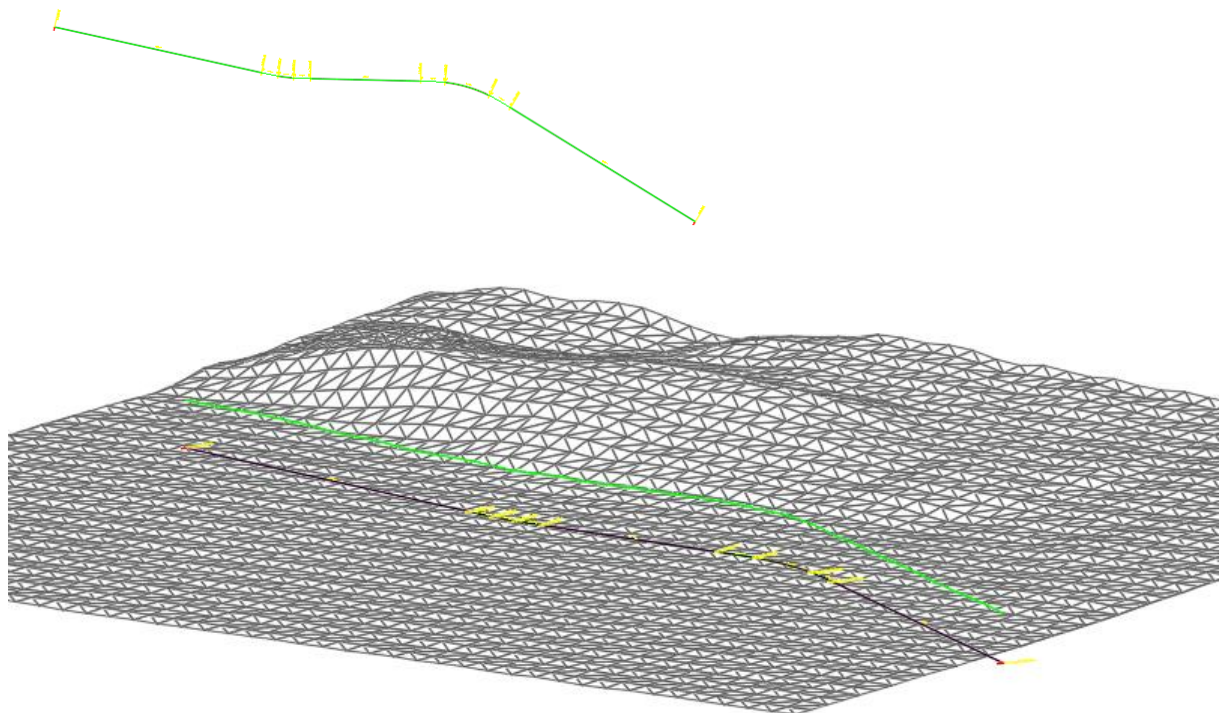
3.2 Import profile

To create a longitudinal profile in the drawing, you must first have a terrain surface and project the alignment onto it.

3.2.1 Draping an Alignment onto a Surface

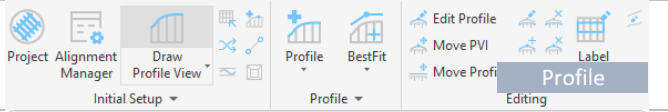
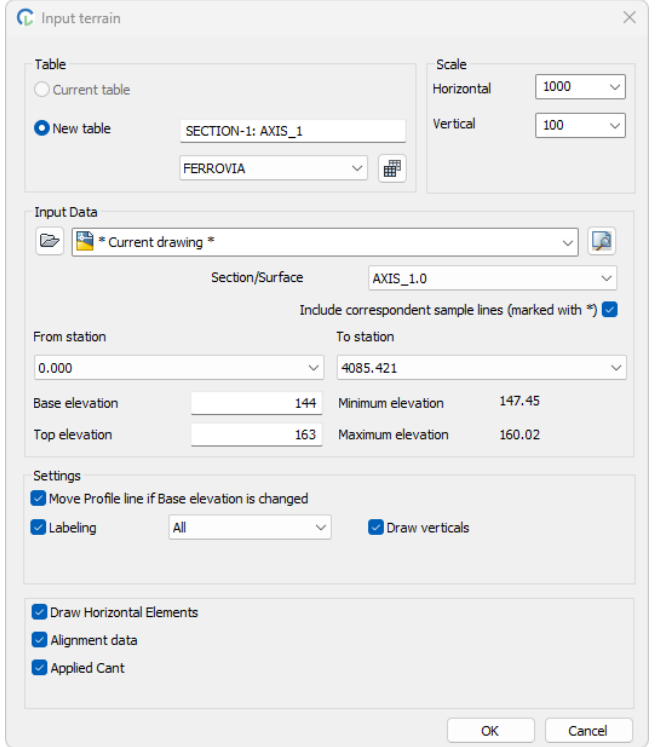
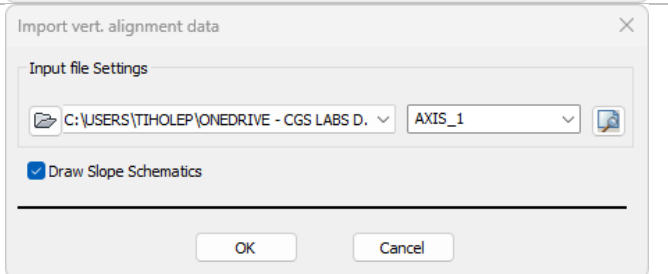
1. Run the "Drape Alignment and Sample Lines (22K1)" command.	
2. Select the surface onto which you want to drape the alignment. 3. Click OK.	

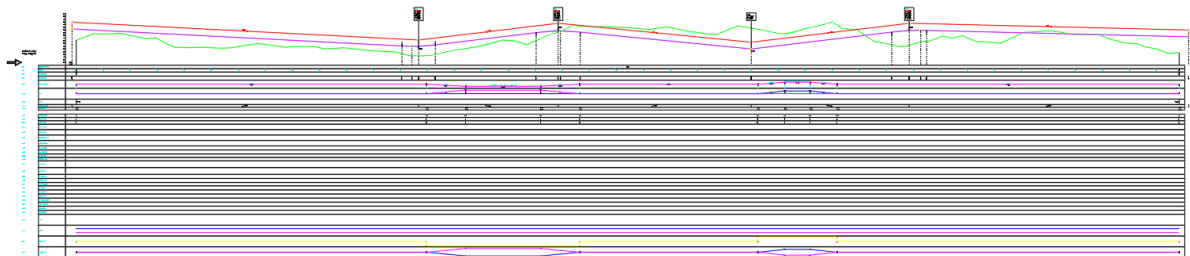
You can confirm that the alignment has been draped onto the surface when a green 3D polyline appears along the alignment, following the terrain surface:



3.3 Creating a Profile View

In the next step, we need to insert a profile view into the drawing.

1. Run the <u>"Draw Profile View (32E1)"</u> command.	
2. Define parameters in the 'Input Data' dialogue box.	
3. Click OK.	
4. Then define the insertion point for the profile table directly in the drawing.	
5. Run the <u>"Read Profile (32G3)"</u> command.	
6. Define the input file.	
7. Click OK.	



You can then continue with the standard design process.

NOTE: Cant data cannot currently be transferred automatically, so the values must be entered manually in the Cant Editor.