Civil Solutions 2026.1

Design with Confidence Build with Precision

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by CGS Labs

Ferrovia
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Aquaterra
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Autopath
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CGSLABS

What is new in CGS Labs Civil Solutions 2026.1|RAILWAY

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CGS Labs d.o.o., Brnčičeva ulica 13, 1000 Ljubljana, Slovenia

Content:

1. Supported CAD platforms

CGS Labs Civil Solutions 2026.1 is now compatible with the new BricsCAD V26, as well as the latest versions of Autodesk AutoCAD & Civil 3D 2026.

With CGSLABS 2026.1 Civil Solutions, support for CAD platforms now includes the following CAD platforms:

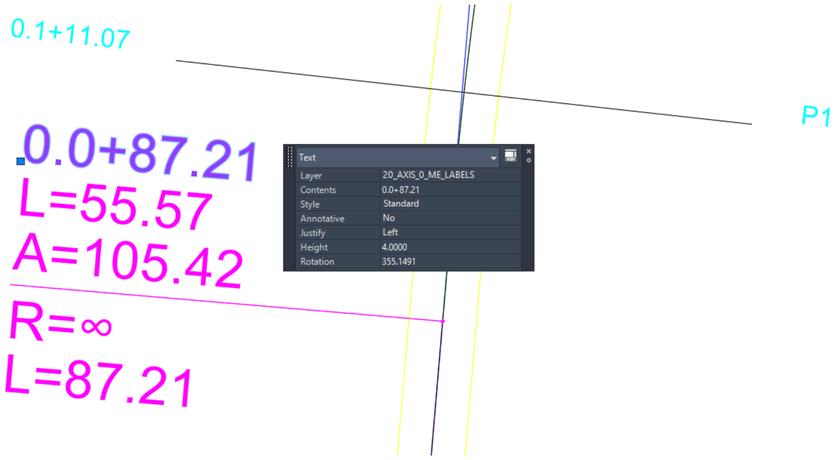
Autodesk AutoCAD/Civil 3D	BricsCAD
2026	V26
2025	V25
2024	V24
2023	V23
2022	
2021	
2020	

CGSLABS 2026.1 Civil Solutions is a minor version upgrade. Users can install the latest CGSLABS 2026.1 Civil Solutions on CGS Labs 2026.0 version and alongside with previous CGS Labs versions (e.g. 2025, 2024 or older).

2. ENHANCEMENTS

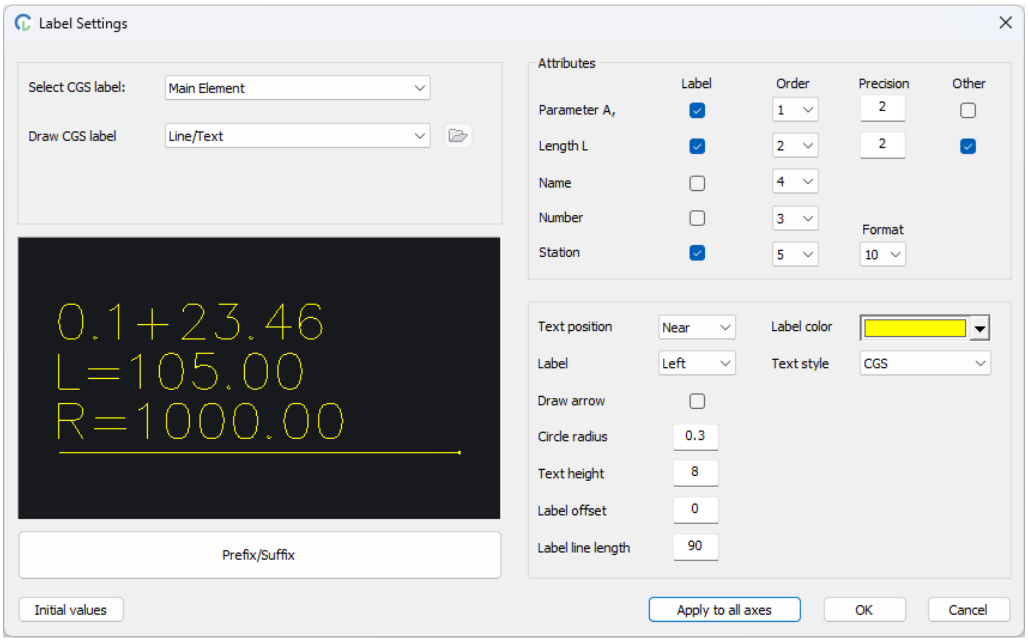
22A6 – Main elements and Sample Lines Label Settings

The CGS labeling functionality has been enhanced with the reintroduction of an option to draw labels as text and line objects, not only as blocks. A new, more intuitive interface for modifying label settings has also been implemented. This interface includes a dynamic preview, tooltips, and provides easy access to all adjustable parameters for each label type. Currently, these improvements apply to Main Elements and Sample Lines labels. Additional settings have been added as well, such as label color, text style, text justification, and rotation.

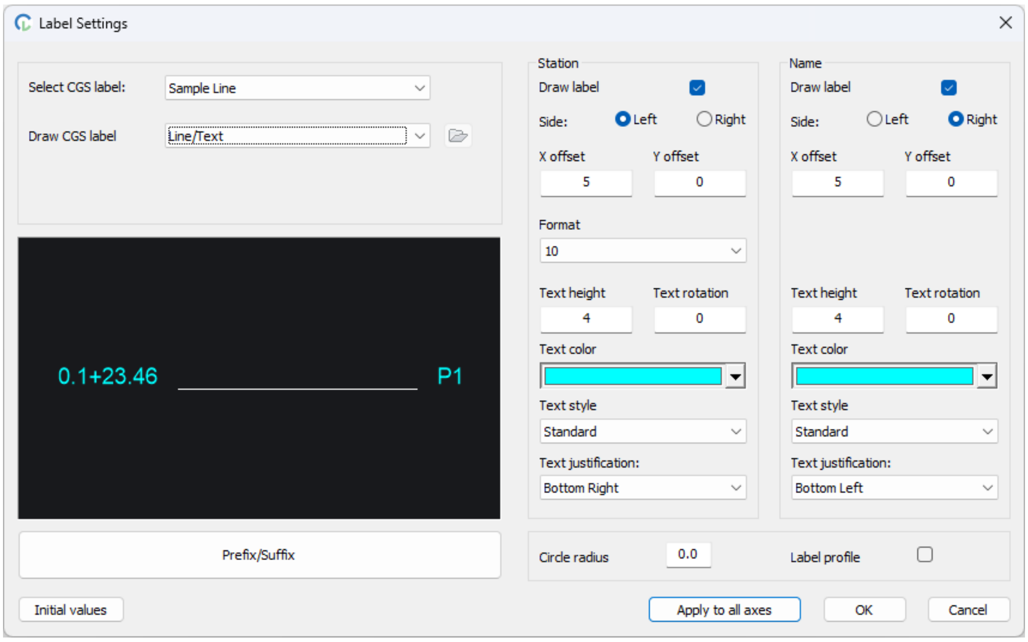


Internal changes have been made to store label settings independently for each alignment. This allows every alignment in the plan to maintain its own configuration—such as label colors, text heights, and other parameters—unlike previous versions.

Main Element Label Settings:

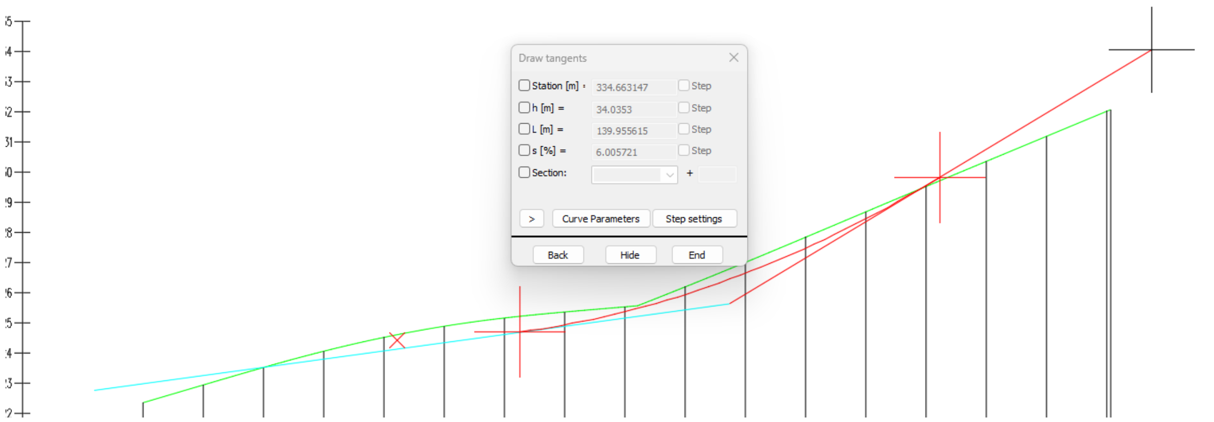


Sample Line Label Settings:



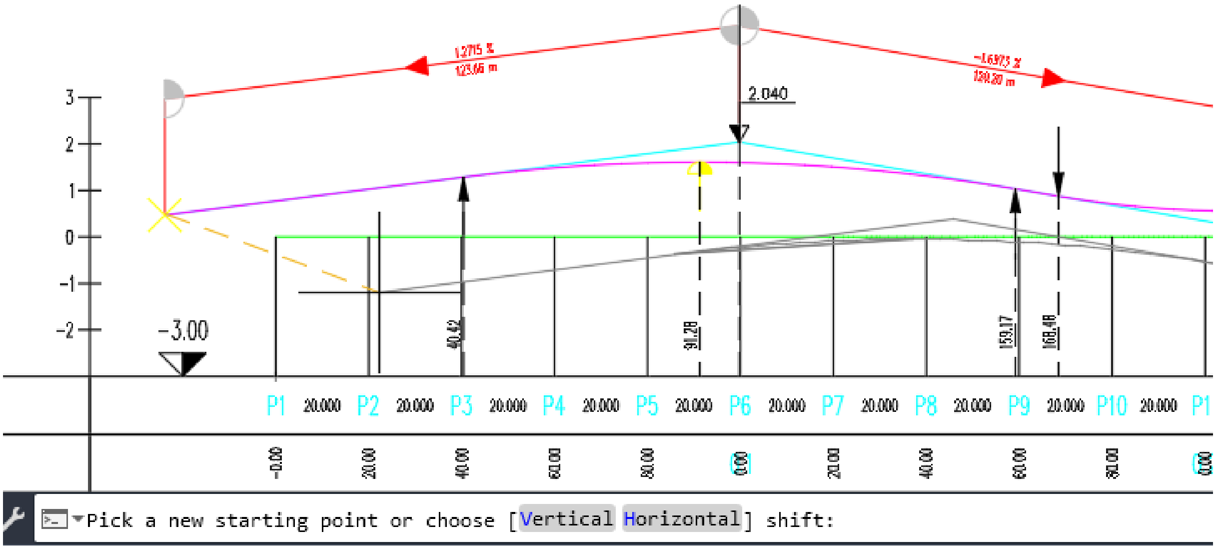
32G1 – Dynamic Validation While Drawing the Profile

When drawing a profile line in the longitudinal section, the design line is now validated against critical parameters dynamically during drawing, not only after confirmation. If a segment does not meet the required parameters, it is highlighted in red.

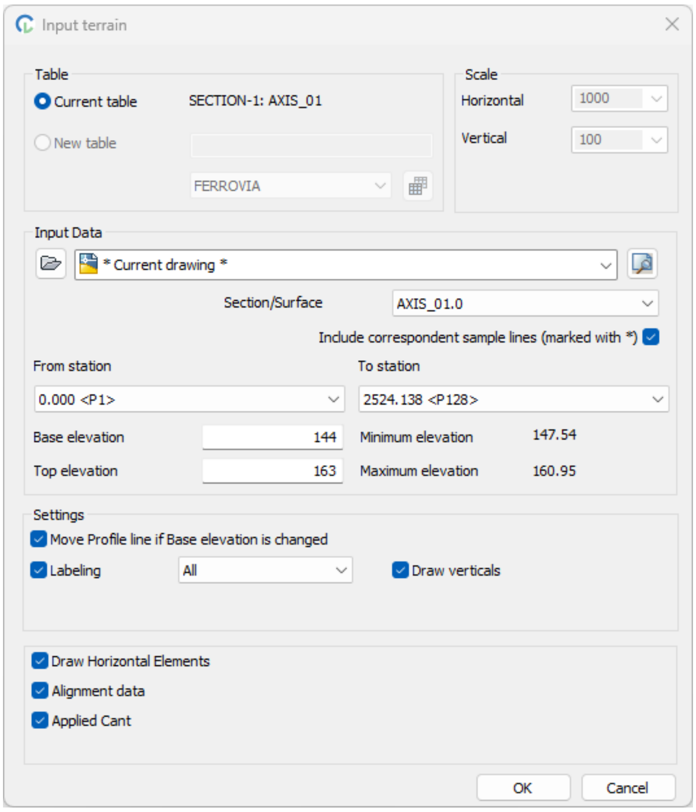


32H5 - Profile Line Vertical / Horizontal Shift

The functionality for moving profile line tangents (32H5) has been improved. It is now possible to shift the entire profile line horizontally or vertically. This is useful when the base elevation of the Profile View is modified, or when the horizontal alignment is changed or extended. The new functionality allows tangents and curves to be moved to any start location, or shifted horizontally or vertically by selecting a point or specifying an offset value.



In addition, when using the 32E1 command, this behavior is now the default. If a Profile View already exists for the active alignment and the base elevation is changed, the profile line will shift accordingly.



22Q1 – Cant Editor Enhancements

In version 2026.1, the **Cant Editor** has been significantly improved to provide greater flexibility, consistency, and ease of use when defining and managing cant data. Several new options, settings, and workflows have been introduced, making it easier for designers to control limits, adjust values, and manage data across multiple alignments.

The following key enhancements have been implemented:

- New additional settings for cant limits and stationing format
- Editing cant and speed values directly in the table
- Copy–paste support for selected data columns
- Improved data preservation when editing or moving alignments
- Direct export of cant data to Excel
- Improved behavior of the automatic cant calculation option

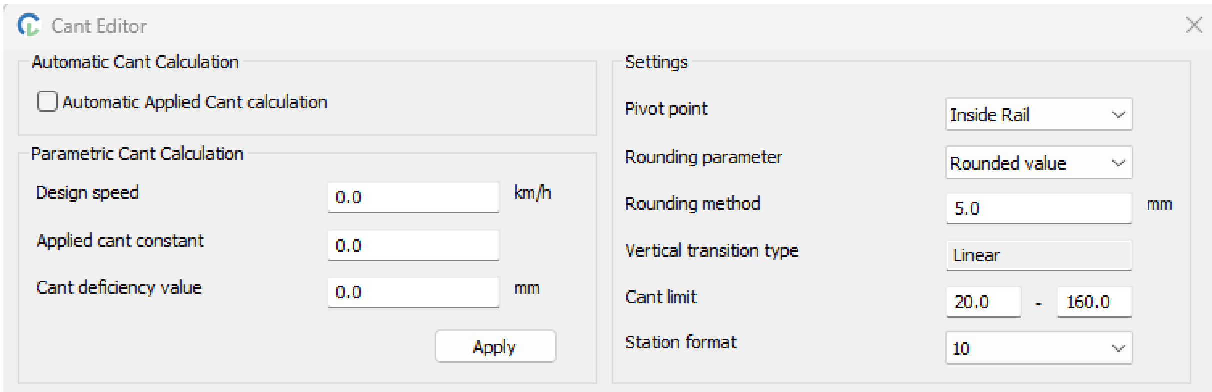
Each of these improvements is described in detail in the sections below.

22Q1 – New Additional Settings

In the upper-right section of the dialog, new configuration options have been added. Based on user feedback, default values have also been updated to provide a more practical and standardized setup.

The new settings include:

- **Cant limits:** Users can now define the minimum and maximum cant values according to the selected standard. When entering values in the dialog, the software automatically prevents input outside the defined range.
- **Station format:** Users can now choose the preferred format for displaying stationing values directly within the dialog.

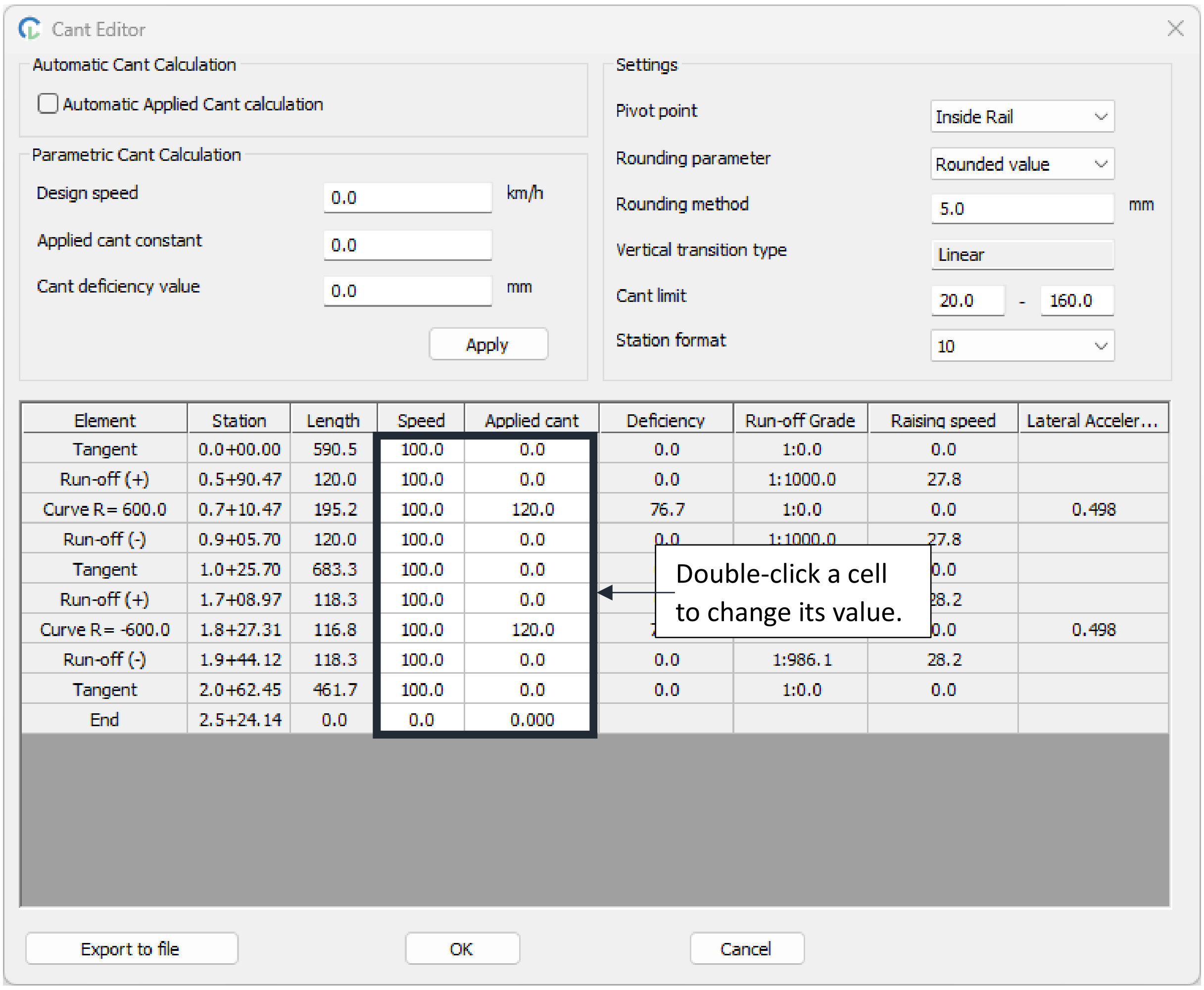


These additions make it easier to control design parameters and ensure consistent data entry when defining cant and stationing properties.

22Q1 – Edit Cant and Speed Values Directly in the Table

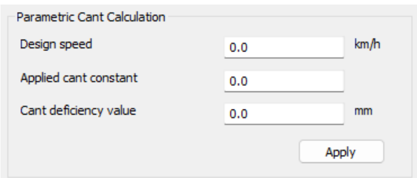
In the new release, users can now edit cant and speed values directly in the Cant Editor table. By double-clicking a cell in the Applied Cant or Speed column, the value can be changed instantly.

The entered value must comply with the cant limitations and rounding method defined in the Settings section. If the input does not meet these limits, the software automatically adjusts the value according to the defined parameters. For example, if the user enters a cant value of 5 mm while the minimum cant is set to 20 mm, the software will automatically change the value to 20 mm.



NOTE: At this stage, direct editing is available only for parameters on curve elements, the same as in previous versions. The option to apply cant transitions starting within tangents is not yet supported.

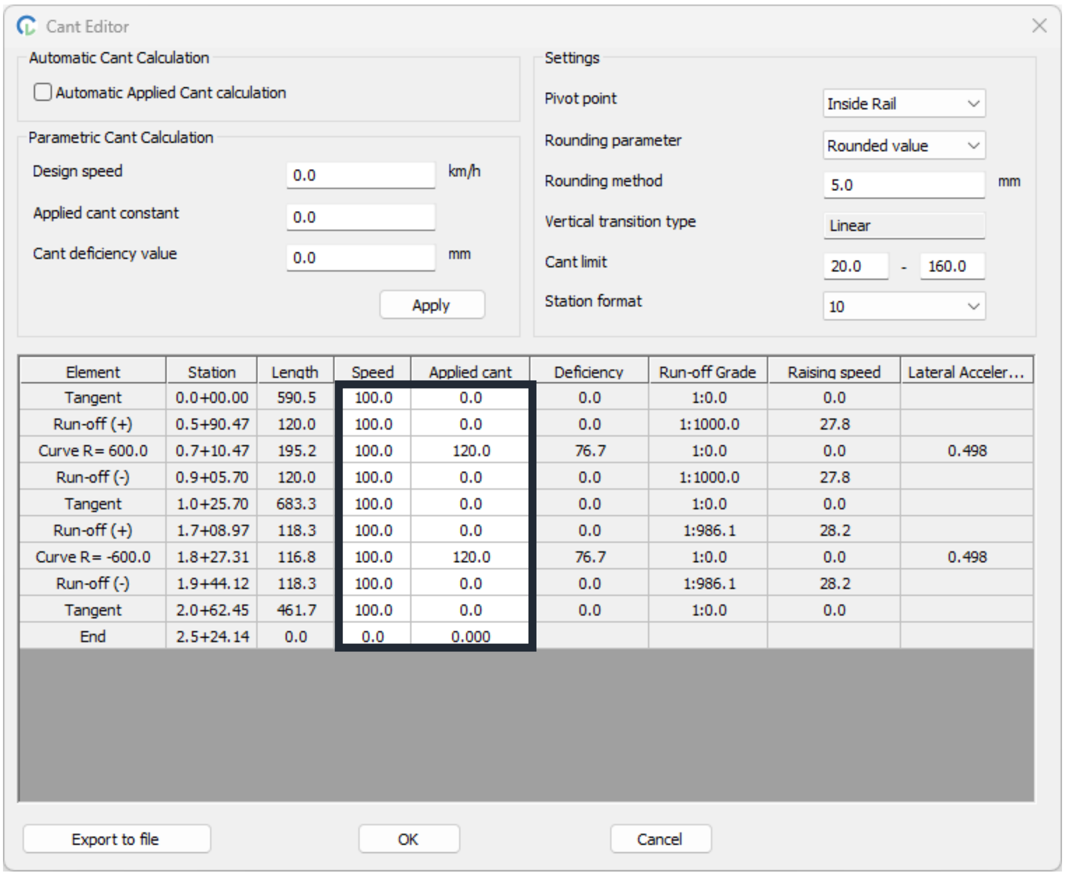
If you prefer to calculate the cant based on the design speed, applied cant constant, and cant deficiency value, this workflow remains available as in previous versions. In this case, define the parameters in the upper-right section of the dialog, click Curve (the curve where the cant will be calculated), and then click Apply.



22Q1 – Copy-Paste Support for Speed and Applied Cant Columns

The Cant Editor now supports **copy-paste functionality** in the *Speed* and *Applied Cant* columns. Users can copy data from these columns or paste values directly from other sources (such as Excel), making it much faster to update multiple values at once without manual re-entry.

This improvement streamlines the workflow, especially when working with externally calculated values.



All pasted values are subject to the **cant limitations and settings defined by the user**, including:

- **Rounding method** (values are rounded according to the chosen rounding settings)
- **Minimum cant** (any values below the defined minimum will be adjusted accordingly)
- **Maximum cant** (any values above the defined maximum will be adjusted accordingly)

This ensures that all imported or pasted data remains consistent with the configuration defined by the user in the upper “Settings” section of the dialog.

Note: *When pasting values, the system will automatically adjust them to match the defined settings. For example, values above the maximum cant will be reduced, values below the minimum will be increased, and all values will be rounded according to the project’s rounding rules.*

Additionally, users can select the entire Cant Editor table — including greyed-out fields — and copy it using *Ctrl + C*. The full table can then be pasted directly into Excel, making it easy to review, archive, or analyze all cant-related parameters at once.

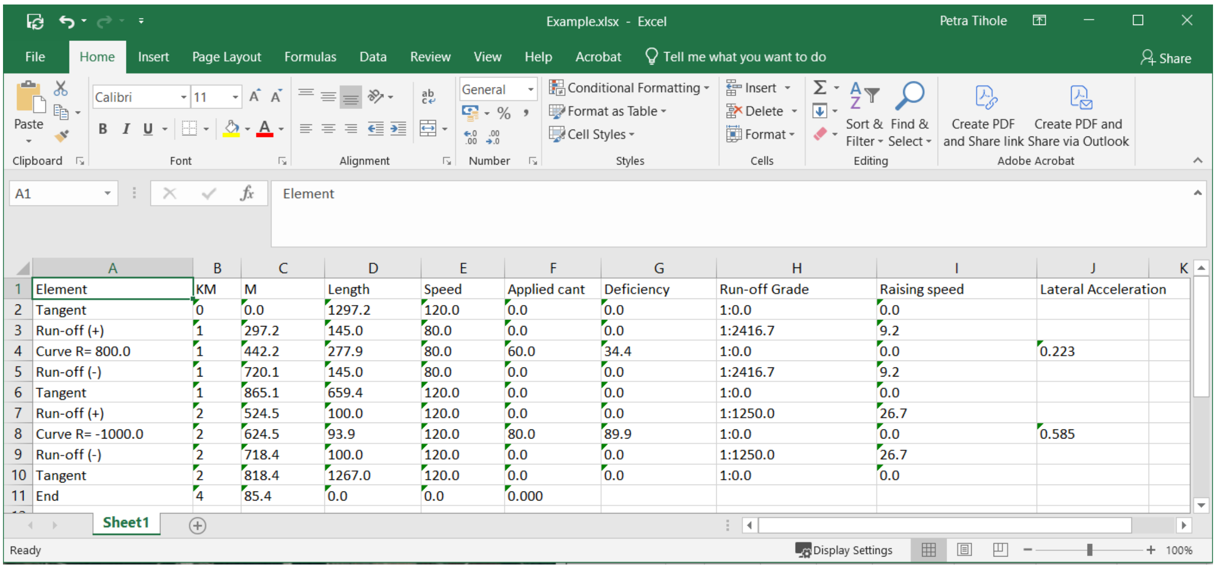
22Q1 – Cant Editor Data Can Now Be Exported Directly to Excel

Previously, the Cant Editor only supported exporting data to a .txt file, which was not always the most convenient format for reporting or further processing.

With this update, users can now choose between two export options directly from the Cant Editor:

- Export to .txt file (existing functionality)
- Export to Excel (.xlsx)

When selecting the Excel option, you simply choose the location where the file should be saved. Once exported, the Excel file will automatically open, making it easy to review or use in your workflow.



Element	KM	M	Length	Speed	Applied cant	Deficiency	Run-off Grade	Raising speed	Lateral Acceleration
Tangent	0	0.0	1297.2	120.0	0.0	0.0	1:0.0	0.0	
Run-off (+)	1	297.2	145.0	80.0	0.0	0.0	1:2416.7	9.2	
Curve R= 800.0	1	442.2	277.9	80.0	60.0	34.4	1:0.0	0.0	0.223
Run-off (-)	1	720.1	145.0	80.0	0.0	0.0	1:2416.7	9.2	
Tangent	1	865.1	659.4	120.0	0.0	0.0	1:0.0	0.0	
Run-off (+)	2	524.5	100.0	120.0	0.0	0.0	1:1250.0	26.7	
Curve R= -1000.0	2	624.5	93.9	120.0	80.0	89.9	1:0.0	0.0	0.585
Run-off (-)	2	718.4	100.0	120.0	0.0	0.0	1:1250.0	26.7	
Tangent	2	818.4	1267.0	120.0	0.0	0.0	1:0.0	0.0	
End	4	85.4	0.0	0.0	0.000				

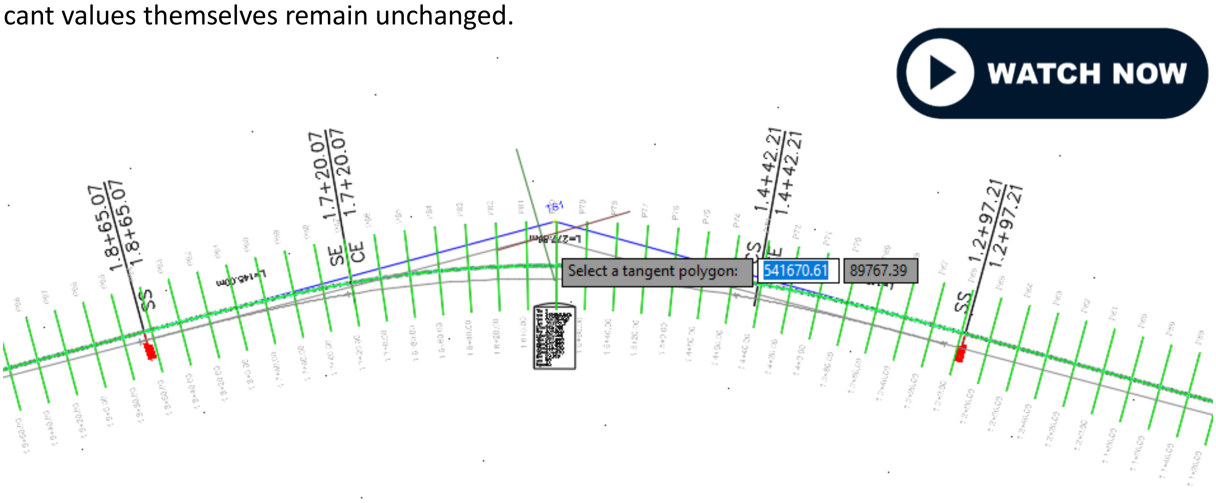
NOTE: We have decided not to enable direct import of Excel files into the Cant Editor, in order to prevent potential issues arising from changes to stationing values or modifications to the number and sequence of main elements.

However, we have added support for copying and pasting cant and design speed values. This means you can copy these columns from Excel and paste them directly into the Cant Editor, allowing for quick updates without risking structural inconsistencies.

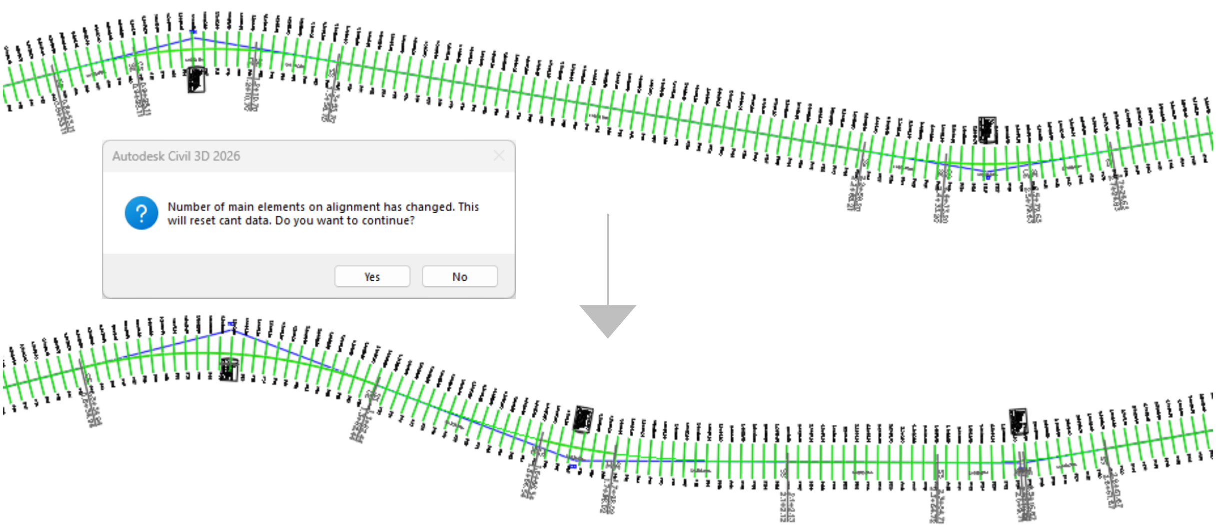
22Q1 – Keeping Cant Data When Editing or Moving Alignments (If the Number of Main Elements Doesn't Change)

In previous versions, any modification to an alignment—such as moving it or editing its geometry—would result in all existing cant data in the Cant Editor being deleted. This required users to manually recalculate cant values and reapply any custom adjustments, increasing the risk of design errors and reducing efficiency.

Now, <u>when an alignment is moved or adjusted</u> **without changing the number of main geometric elements**—that is, the alignment still contains the same number of tangents, spirals, and curves as before—the existing cant data in the Cant Editor is fully preserved. In such cases, any updates to the stationing of these elements (caused by the shift or adjustment) are automatically reflected, but the cant values themselves remain unchanged.



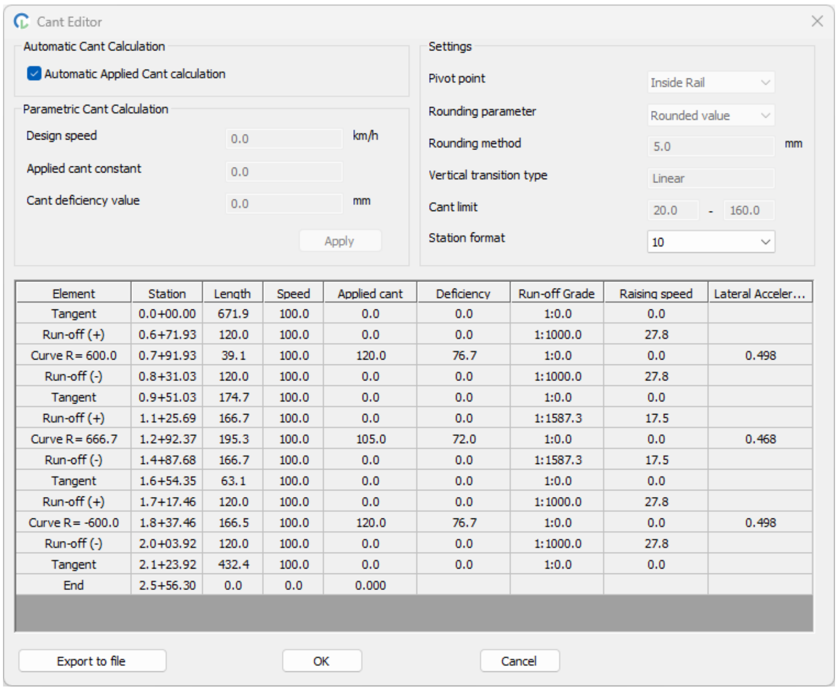
***NOTE:** This preservation only applies if the number of main elements remains exactly the same. If the alignment is modified in a way that adds or removes main elements — for example, by inserting a new curve or deleting an existing tangent — Ferrovia will display a warning message: "Number of main elements on alignment has changed. This will reset cant data. Do you want to continue?" After confirmation, the existing cant data will be cleared and a full recalculation will be required to ensure accuracy.*



22Q1 – Improved Automatic Cant Calculation Option

The Automatic Cant Calculation option has been improved to work more clearly and more consistently than before. This option is not new, but its behaviour has now been refined so that users better understand when cant values are calculated automatically and when they can be edited manually.

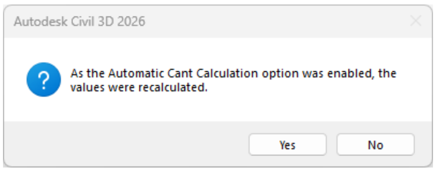
When Automatic Cant Calculation is enabled in the Cant Editor, all parameters that were previously editable are now greyed out, as the calculation is performed automatically according to the selected standard. In this mode, the user cannot manually edit the design speed or cant values. To modify these values, the user simply unchecks the option, and the fields immediately become editable again.



This option is also connected to the Parameters dialog that appears when starting to draw an alignment:

- If Automatic Cant Calculation is enabled there, cant values are calculated automatically during the alignment creation process.
- If it is disabled, the user must run the calculation later using the "Calculate Applied Cant" command. In both cases, the user can still adjust cant values manually afterwards if needed.

NOTE: If Automatic Cant Calculation is turned on later inside the Cant Editor, all fields will instantly turn grey and manual editing will be locked. The recalculation itself will occur after the dialog is closed, and the program will display a message informing the user that a new cant calculation will be applied.

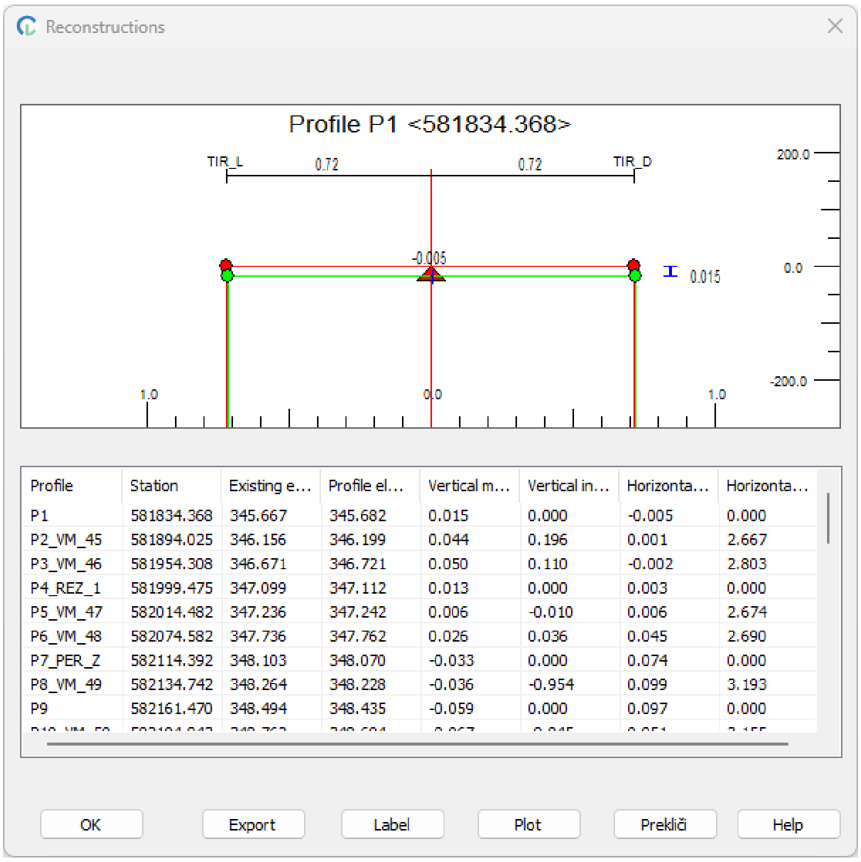


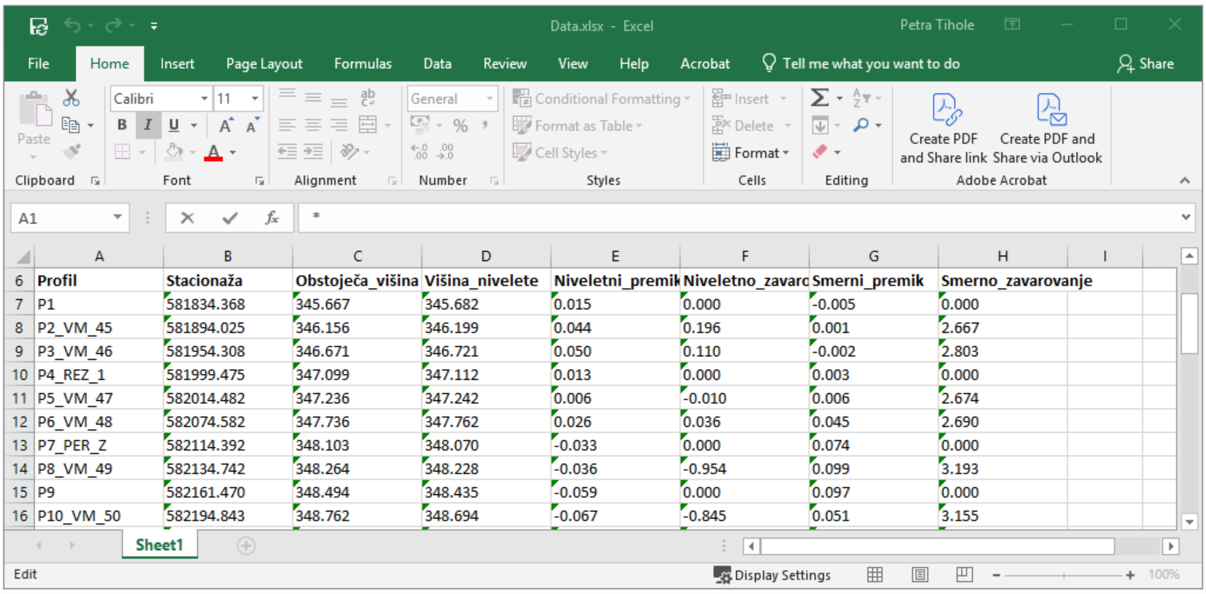
This improved behaviour makes the option easier to understand and ensures a more logical and predictable workflow for designers.

3201 – Export of Horizontal and Vertical Track Shift Data to Excel

The dialog "Horizontal and Vertical Track Shifts" previously allowed exporting data only to a TXT file, but with the 2026.1 release, users can now export this data directly to Excel (XLSX format) for easier analysis and reporting.

This enhancement makes it easier to review, analyze, and share results — especially when preparing reports or performing quality control on track alignment and elevation adjustments.

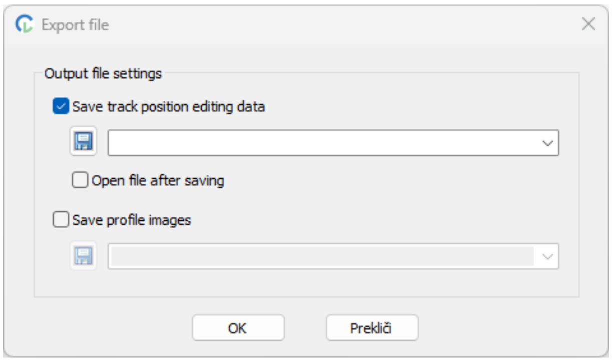


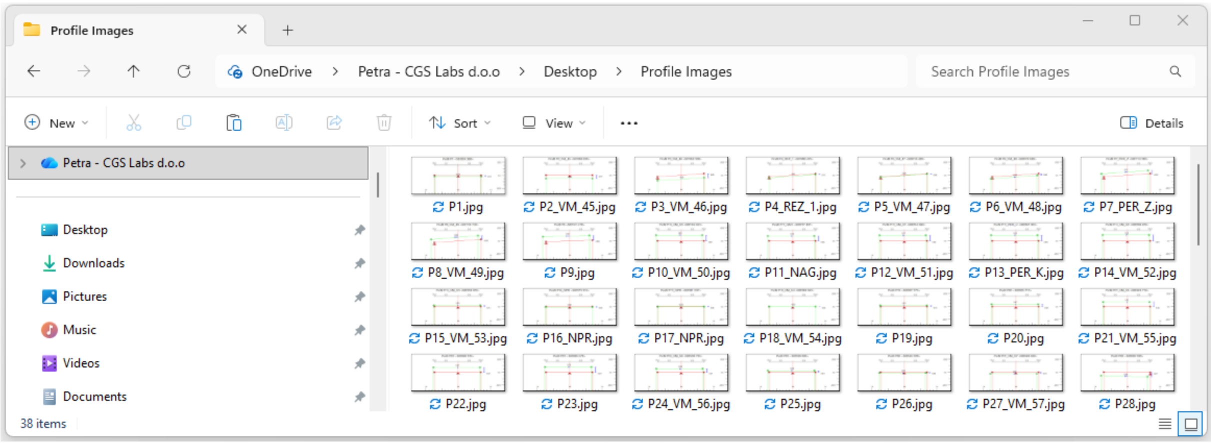


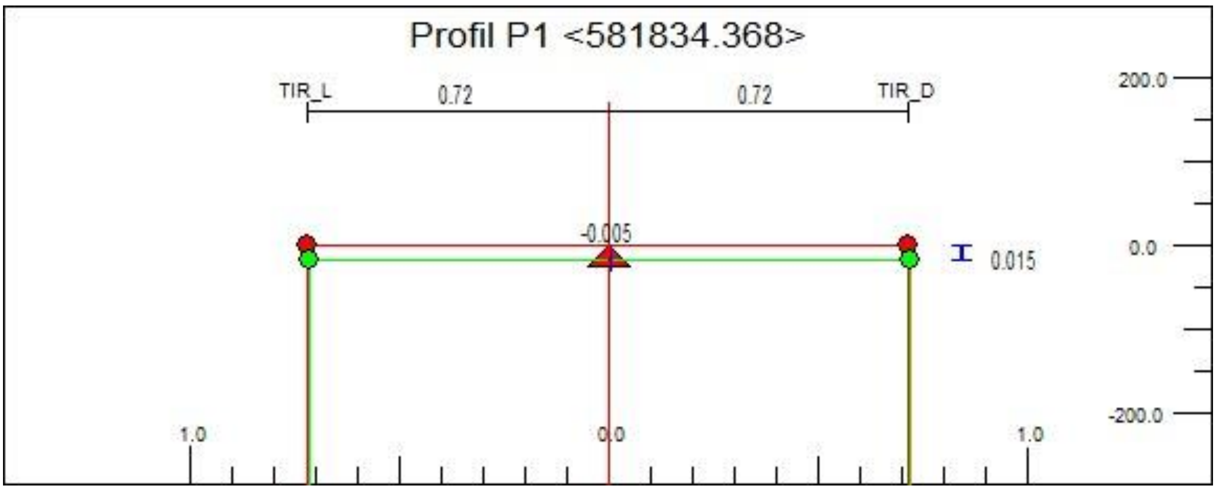
32O1 – Export of Horizontal and Vertical Track Shift Images

Alongside the data export to Excel, version 2026.1 also introduces the option to export all generated profile images to a local folder.

Each image is automatically created based on the data from the corresponding profile, ensuring that every exported image accurately represents the specific conditions of that section. This new feature allows users to quickly generate a complete set of visual outputs that can be easily included in technical reports, documentation, or presentations — without any additional manual steps.







32F – Custom Data Display Option in Rubrics Horizontal Elements (LRA_2) in the Longitudinal Profile Table

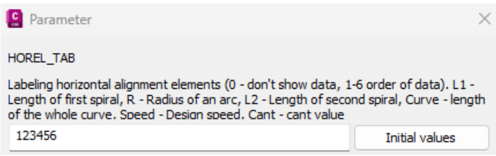
In previous versions, data entries for **Horizontal Elements** (rubric LRA_2 in the longitudinal profile table) included several parameters repeated from other rubrics — such as curve length (L), radius (R), tangent length (T), and other geometric data. Users had no control over which of these values were displayed and often had to manually delete unnecessary information from the table.

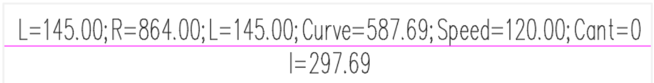
With the 2026.1 release, we have added a new enhancement that allows users to customize which data are displayed for **Horizontal Elements (LRA_2)**. This improvement provides full flexibility to choose whether only selected parameters (e.g. *L*, *R*) or all available data should be shown in the longitudinal profile table.

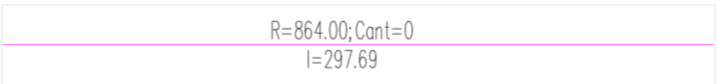
These settings can now be configured directly in the **Settings for Longitudinal Profile**:

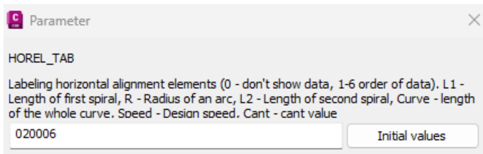
- **320413** – Labelling horizontal elements
- **320414** – Number of decimal places for labelling horizontal elements

WATCH NOW





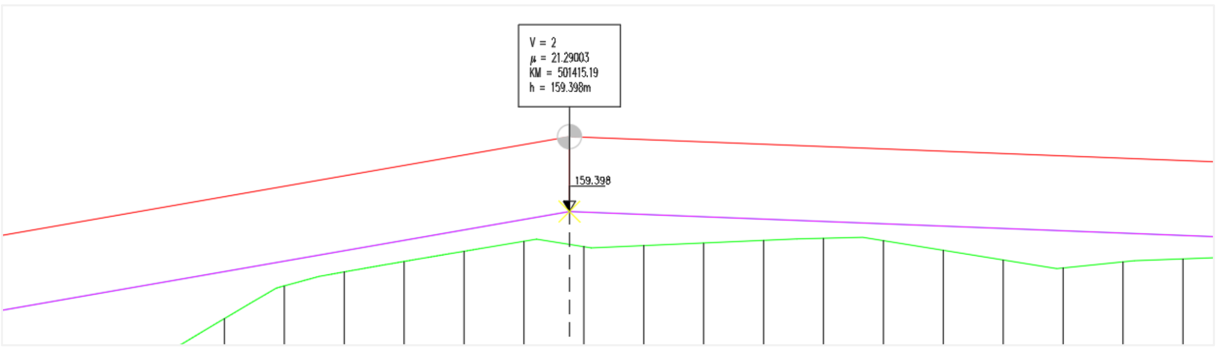




32H8 - Support for Labeling Vertical Curves with R=0

In previous versions of Ferrovia, when the vertical rounding radius (R) was set to 0, the longitudinal profile table did not display the value correctly and showed N/A instead.

With the 2026.1 release, Ferrovia now correctly supports labeling of vertical curves with R=0, ensuring consistent behavior with Plateia and other CGS Labs applications.



Example of longitudinal profile table correctly displaying R=0 values.

42H1 – Enhanced “Insert Railway” Command with Automatic Planimetry

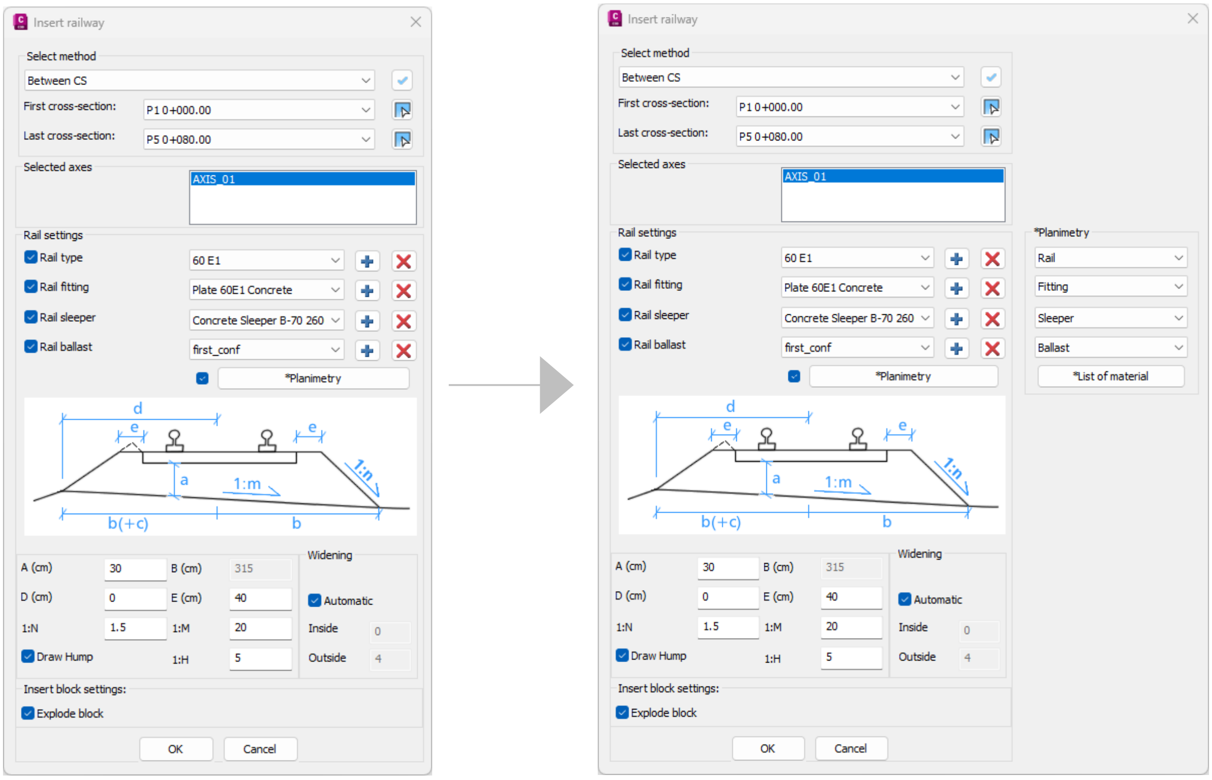
A new Automatic Planimetry option has been added to the Insert Rail command. This enhancement allows users to automatically generate planimetric quantities of inserted rail elements in cross-sections. Based on these quantities, users can directly perform volume calculations or use the data for 3D model generation.

This enhancement significantly reduces the number of steps required for planimetry creation — previously, users had to manually apply planimetry to each element using the Planimetry command. Now, planimetry can be created automatically during the insertion process itself, in a single step.

The planimetry is generated for the following railway components:

- Rail
- Rail fitting
- Sleeper
- Ballast

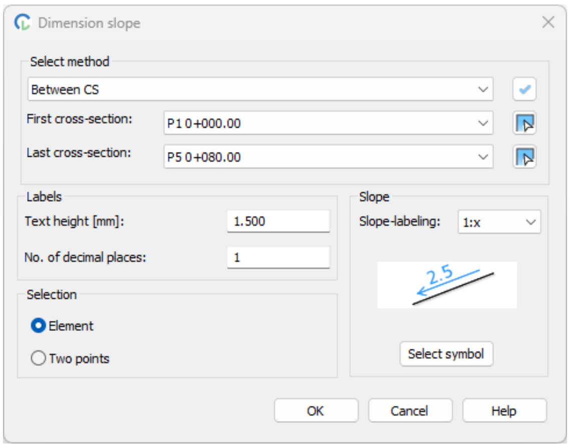
WATCH NOW

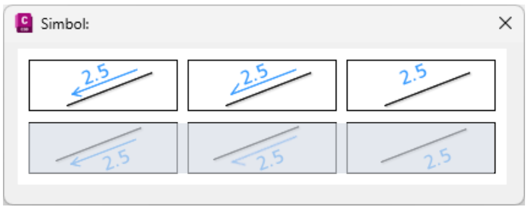


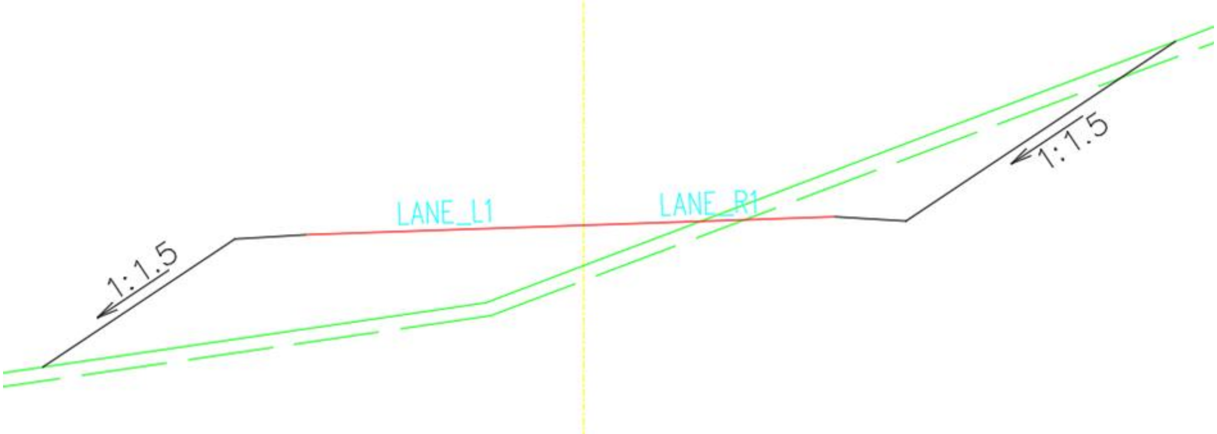
The left dialog shows the previous version of the Insert Railway command without the planimetry option, while the right dialog displays the new version with the added Automatic Planimetry functionality.

42J1 - Additional Slope Symbols Positions

You can now place slope labels below elements in cross sections. Previously, slope labels could only be positioned above. Based on user requests, this update adds three new options for placing slope symbols beneath elements.





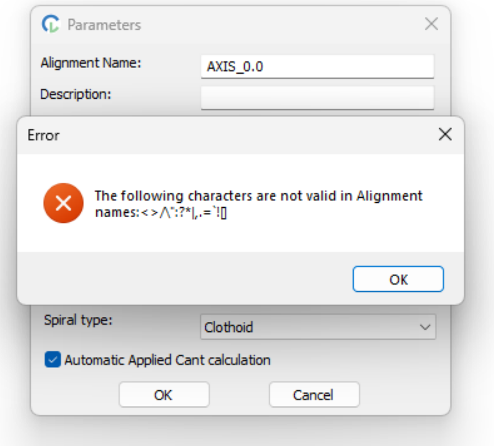


3. CHANGES

22C - Dot Character in Alignment Name No Longer Allowed

In previous versions, it was possible to include a dot (".") character in the alignment name when using the Alignment Manager (22C). However, using a dot caused issues in other functions — for example, when drawing the Profile View (32E1), certain operations failed or produced incorrect results.

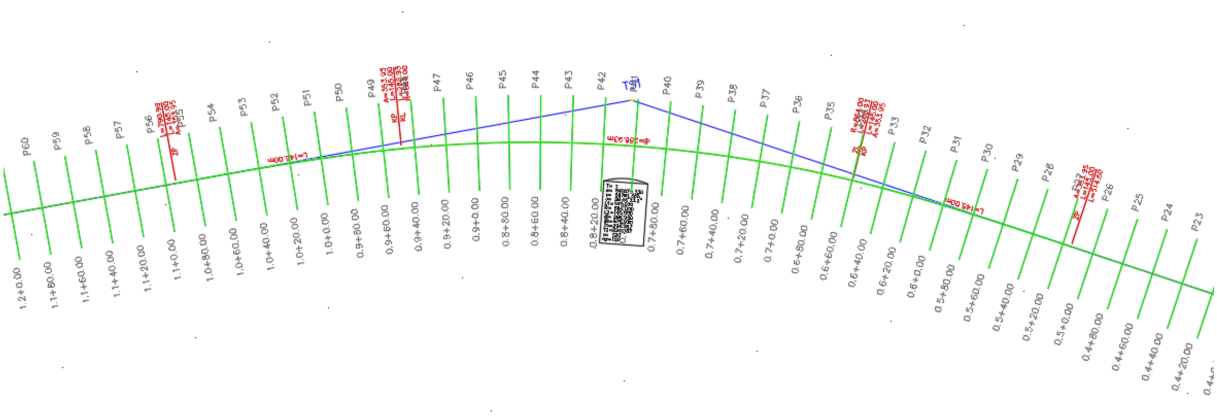
This issue has now been resolved. The use of a dot (".") in alignment names is no longer allowed. When attempting to enter a name containing this character, the user is notified with a warning message.



22H, 32E1 [SLO] – Text Color Adjustment in Labels for Sample Lines and Longitudinal Profiles

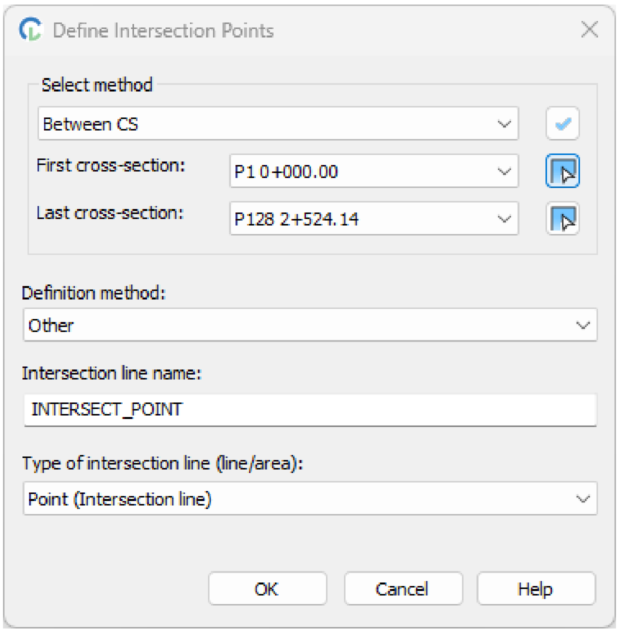
In the Slovenian version of Ferrovia, the default text color used for station and name labels in sample lines, longitudinal profiles, and cross-sections has been updated.

Previously, labels were displayed in turquoise, which was difficult to read when printing plans. Users often had to manually change the color to white to improve visibility. Based on user feedback, the default label color has now been adjusted to ensure better readability and improved visual consistency in printed drawings.



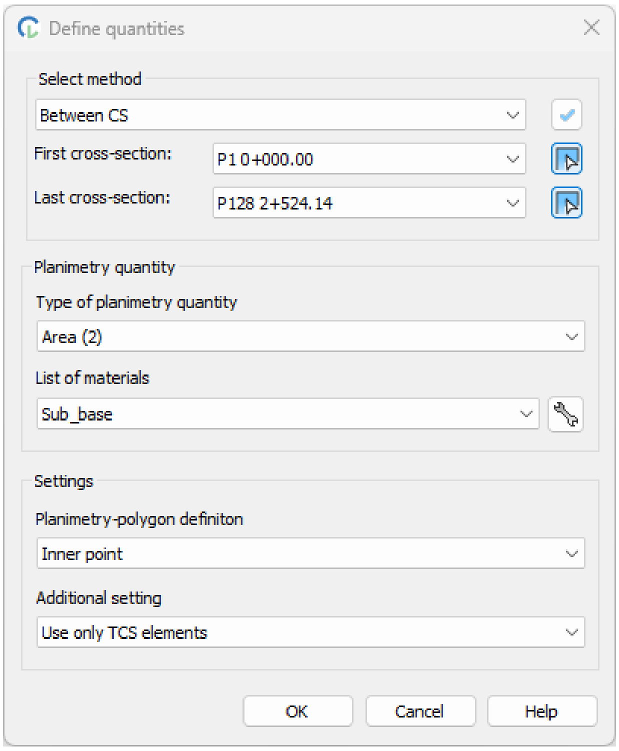
42K1 – Default Option for Intersection Points

The most commonly used option for drawing intersection points in cross-sections is to place them as user-defined at a single point or location. This configuration is now set as the default.



42M1 - Selected options Are No Longer Reset

Previously, when using 42M1 to define planimetry settings, options had to be selected in order from top to bottom. Selecting items out of order—for example, profiles at the end—would reset previously chosen options. This behavior has now been corrected.



4. FIXES

CGS UI – Resolved Multiple Issues with Screen Scale Resolution

There were several dialogs and texts which didn't scale well with the Windows resolution scale. If the user used 125, 150%, 200% (or other) scaling, the text within the dialogs was hardly visible. This has now been resolved for a few commands such as: Planimetry quantities (42M3), Property Manager and Property Set Editor.

CGS – Performance Improvement of Certain Functions

Some functions previously checked whether the user had requested to interrupt the loading process using the ESC key. This check, in certain cases, caused a noticeable slowdown in data loading within the function. Since this feature was not necessary and was not used in practice, it has been removed.

This change results in faster performance of functions related to terrain reading when creating the longitudinal profile (32E1) and its refreshing (32X), terrain reading for cross sections (42E1) and their refreshing (42X), as well as several other functions such as grading (22P2), CGS terrain creation (11L1), editing or deleting TCS elements (42I), …

22A31 - CGS Labs Parameters - Missing Descriptions and Values

The missing descriptions, incorrect values, and redundant parameters in the Axis settings for Ferrovia have been reviewed and corrected. All parameters are now properly translated, updated, and aligned with the required specifications.

22C – Start Station Decimals Are Now Correctly Displayed

When defining a start station, the entered stationing values (km + m) were not preserved correctly after confirmation. The decimal part of the "m" value was automatically extended with excessive precision (for example, entering km: 581 and m: 843.352 resulted in 843.3519999999999 after pressing OK).

This issue has now been fixed. The entered start station values are now stored and displayed exactly as input, ensuring correct precision and consistent numerical representation across all dialogs and calculations.

22E1 – TP Labels No Longer Duplicated When Continuing an Alignment

Previously, when continuing an existing alignment, already drawn tangent polygon (TP) label elements were not removed before new ones were added. As a result, lines, block tables, circles, and TP text names were duplicated each time. This issue has now been resolved.

22F1 – Convert to Tangent Polygon Issue on Certain Combinations

When converting an alignment to a tangent polygon, the main elements were not preserved. In cases where two curves were separated by a partial spiral and both radii were very similar (within less than 10%), the partial spiral was converted to a regular spiral with different values. This issue has now been resolved, and the main elements are correctly retained after conversion.

22K1 – Freeze When Projecting Alignment to CGS Points on Autodesk Platform

On the Autodesk (ACAD) platform, projecting alignment to CGS points in specific conditions caused the application to freeze when projecting to the longitudinal alignment. This issue occurred when using function 22K1. The problem did not occur when projecting only to sample lines, and it was not present on the BricsCAD platform. The issue has now been resolved.

32C3 – Edit Table No Longer Changes the Color of Horizontal Elements Rubric

After confirming command 32C3 for editing the active table in the profile view, the color of horizontal elements in the rubric (LRA_2) was incorrectly changed to white. The predefined color is now preserved and no longer changes during editing.

32C7 - Move Profile View No Longer Offsets Tangent Polygon Tables

Previously, when a Profile View was moved (32C7) and then refreshed (for example, by 32X), tangent polygon label tables were incorrectly displaced vertically (Y offset) due to how position data was stored for each table. This behavior has now been corrected, and moving the Profile View no longer affects table positions.

32E1 – Incorrect Stationing of Vertical Segments in Profile View

In specific cases where an alignment element was nearly vertical, profile stations were calculated incorrectly. The tolerance used to determine whether a line element is treated as vertical or horizontal has been adjusted. As a result, vertical segments are now correctly identified, and stationing is calculated accurately.

32H8 - Vertical Curve Label Now Supported for R=0

Support for displaying vertical curve labels when R=0 has been added. Previously, the table did not support a null radius value and displayed N/A. The table now reads the parameters correctly and shows the proper values.

32T1 - Rubric Projection Line Recognized as Regular Projection Line

Using Rubric projection lines in Profile view (32T1) and using projection points in cross sections (42K2) could resulted in incorrect heights as it took the height from rubric projection line instead of graphic projection line. This has now been fixed.

42F1 – Railway Not Drawn in Cross Sections When Multiple Records Were at the Same Station

When, for example, a correspondence axis and a regular axis were placed at the same station, Ferrovia could not read the data correctly, resulting in the roadway not being drawn in the cross sections (while it was shown correctly in the longitudinal profile). This issue has now been fixed, and the roadway is now displayed correctly in the cross sections as well.

42H1, 42H9 – Improved TCS Block Hatch Color Conversion

Previously, if hatches inside user blocks were placed ByLayer and that layer had an assigned color, the color was not applied correctly when converting to a CGS block or planimetry. In those cases, the color was changed to default white. This logic has now been improved: the new layer will retain the correct color, and if multiple hatches have different colors, they will be converted with the hatch color set to ByColor.

42H1 – Deleting Records from the List Now Works Correctly

In previous versions, it was not possible to delete records from the list in the Insert Railway (42H1) dialog. When users attempted to remove a selected option (for example, a rail type, fitting, or sleeper) by clicking the delete icon, no action was performed and the record remained in the list.

The problem has been resolved. The delete function in the Insert Railway dialog now works as intended — users can easily remove any listed element (rail, fitting, sleeper, or ballast) from the configuration list with a single click.

42I9 – Edit Rail Command Now Displays All Blocks Correctly

In previous versions, when editing rail elements using the Edit Rail (42I9) command, only blocks listed in the RailSettings.xml file was shown in the dialog. If the drawing contained custom rail, fitting, or sleeper blocks that were not listed in the XML file (for example, when a DWG file was shared between users), these blocks were not displayed in the edit dialog, which made it difficult to modify existing configurations.

This issue has now been fixed. The Edit Rail command now correctly recognizes and displays all blocks used in the drawing, even if they are not listed in the XML file. Users can now edit and confirm all rail components without the need to manually update the XML configuration.

42M3 – Decimal Delimiter Now Supported in Hatch Scale

Previously, entering a new decimal delimiter for hatch scale was not possible, as only integers were accepted. This issue has now been resolved, and decimal delimiters can be used.

42X - Interactive TCS Dimensions No Longer Disappear

When using interactive option to label TCS elements dimension (42J2), those labels were deleted when cross sections were refreshed because the parameters were incorrect. This has been now fixed. Also, the selection of elements was subsequently changed for TCS dimensioning for easier use.

LandXML Export – Cant Values Were Not Saved Correctly in the File

Previously, during the export to a LandXML file, cant values were not written correctly. This caused issues when importing the file into other software solutions. The problem has now been fixed, and the LandXML file is exported correctly.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