



Devotech Group of Companies

# **WHAT'S NEW IN DEVOTECH iDAS v2026**

Document version: 01

DEVOTED TO ENGINEERING EXCELLENCE

# CONTENT

<b>NEW IDAS VERSION NUMBERING .....</b>	<b>4</b>
<b>NEW IDAS INSTALLATION LOCATION .....</b>	<b>4</b>
<b>SUPPORTED CIVIL 3D VERSIONS.....</b>	<b>4</b>
<b>OLD DRAWINGS COMPATIBILITY .....</b>	<b>4</b>
<b>NEW COMMANDS .....</b>	<b>5</b>
Create catchment, flow paths and watersheds from a surface .....	5
Export surface to a GeoTIFF file .....	6
Add drawing objects to a surface .....	6
Copy surface boundaries between surfaces .....	7
Import ModelMaker CDM files .....	7
Export multiple profiles data to CSV .....	8
Edit network parts user fields command replaced .....	9
<b>COMMAND IMPROVEMENTS.....</b>	<b>10</b>
Create Parts along Alignment PVI option and draw in profile view .....	10
Draw parts in profile view crossing pipes and styles.....	10
Points from Section View polyline option.....	10
Slope option added to grade pipe command .....	11
Downhill vacuum lift.....	11
Rotate structures command rotates structures relative to pipes .....	11
Offset points from alignment .....	11
Link points creates polyline instead of 3D polyline.....	12
Link Points command changing point description.....	12
Divide pipes command has more options .....	12
Profile from pipes update existing profiles .....	13
<b>COMMAND BUG FIXES.....</b>	<b>14</b>
SA Lo System command displays incorrect coordinates .....	14
Point Station Offset command interface.....	14
Gravity and reticulation wizards not recognising surfaces .....	14
ProjectWise ribbon items missing.....	14
Add profile from surface to multiple profile views .....	14
Move structure in profile view reference surface problem .....	14
Vacuum lift preview shown from 0 elevation.....	15
Insert structure command dialog not remembering settings .....	15
Civil 3D 2025.2 related errors .....	15
Import Parcels not working for INP files from PC SWMM .....	15
Support command opens the support page on the Devotech website .....	15
Survey grid command creates unused layers.....	15
Profile feature lines command crashes if using a reference corridor .....	15
Set reference surface command not assigning a surface .....	15
Set reference surface command error if no networks in the drawing .....	16
Checkboxes theming makes it difficult to see if it is checked or not .....	16
Edit Structure command crashed if the pipe catalog is set incorrectly .....	16
Edit Structure command crashed if structure is outside the surface.....	16
Error if an incorrect pipe catalog is set.....	16
Bulk water wizard crash for some alignments .....	16
<b>PIPE MANAGER IMPROVEMENTS .....</b>	<b>17</b>
Multiple surface channels fail to analyze.....	17
Surface channel node depth displayed incorrectly .....	17
Surface channel surface column renamed .....	17
Surface channel profiles update after analysis.....	17
Sewer HC line starting at 0,0 .....	17

Double space in surface name causes an invalid surface warning .....	17
Water pump power vs curve interface options .....	18
Deleted alignments show an error dialog in Civil 3D 2025 .....	18
Depth groups import incorrectly .....	18
Import EPASWMM and SSA results error .....	18
Climate change effects option keeps disabling .....	18
Added Tees and Crosses to BOM bends (fittings) .....	18
Remapping parts not updating the current profile .....	19
Profile pipe cover error .....	19
Improved HGL calculation .....	19
Library hydrograph interface simplified .....	20
Improved as built text detection .....	20
Water report file deletion .....	20
Export analyzed results .....	20
Add pond to the results summary grids .....	20
Graphs missing surface ponds and surface channels.....	20
Control structures missing 'Link To Structure'.....	20
Water peak flow analysis changes the end analysis time.....	21
Water minimum analysis time result and more time steps.....	21
Force main pipes added to stormwater and sewer networks.....	21
Units added to result graphs.....	21
SWMM engine version upgraded to 5.2.4 .....	22
Flap Gate property added to conduits .....	22
Answering No to recalculating sewer house connects does not work .....	22
Exclamation mark missing from link Slope (Ratio) column.....	22
Design surface change not updating cover levels .....	23
Invert levels and slope columns added to culverts .....	23
Networks inside blocks error .....	23
Line on map from surface channel to 0,0 point .....	23
Catchment auto flow paths displays error if no catchments selected .....	23
Description columns added to all conduit grids.....	23
Add alignment length column to surface channels.....	23
Swap locked structures .....	24
"Ctor" error displayed when opening some networks .....	24
Improved pipe grading tool .....	25
New additional options .....	25
Improved keyboard shortcuts .....	25
<b>IDAS CIVIL 3D TEMPLATE IMPROVEMENTS.....</b>	<b>26</b>
Direction arrow style adjustment.....	26
Tadpole slope pattern style .....	26
<b>PIPE CATALOG IMPROVEMENTS .....</b>	<b>27</b>
<b>New structures.....</b>	<b>27</b>
Hynds Hystop Cattle Stop .....	27
Hynds Street Catchpit.....	28
Storage Tank Circular Horizontal Manhole .....	29
<b>New pipes .....</b>	<b>30</b>
Grouped Conduits .....	30
<b>Updates to existing structures.....</b>	<b>32</b>
Floor thickness 0 mm added to some structures.....	32
<b>IDAS SUBASSEMBLIES .....</b>	<b>34</b>
Devotech SANRAL Cut Fill Ver 21 Improvements .....	34
Devotech SANRAL Cut Fill Ver 22 Improvements .....	35
SABS Fig 4 curb .....	35

## NEW IDAS VERSION NUMBERING

iDAS has adopted a new version numbering system formatted as **FiscalYear.Minor.Month.Day**. The components of this system are:

- **FiscalYear** – inherited from the latest supported Civil 3D version. For example, iDAS 2026.0.XX.XX is compatible with Civil 3D 2026 and supports versions up to four or five years back.
- **Minor** – increases incrementally with each update.
- **Month.Day** – represents the release date of the iDAS version.

## NEW IDAS INSTALLATION LOCATION

Due to security changes made by Autodesk, the current installation location of iDAS in **ProgramData** is no longer valid. iDAS will now be installed in **Program Files** instead.

## SUPPORTED CIVIL 3D VERSIONS

Civil 3D 2022-2026

## OLD DRAWINGS COMPATIBILITY

Drawings from the previous iDAS version 12.5 Update 1 are fully compatible with the iDAS version 2026.0.

## NEW COMMANDS

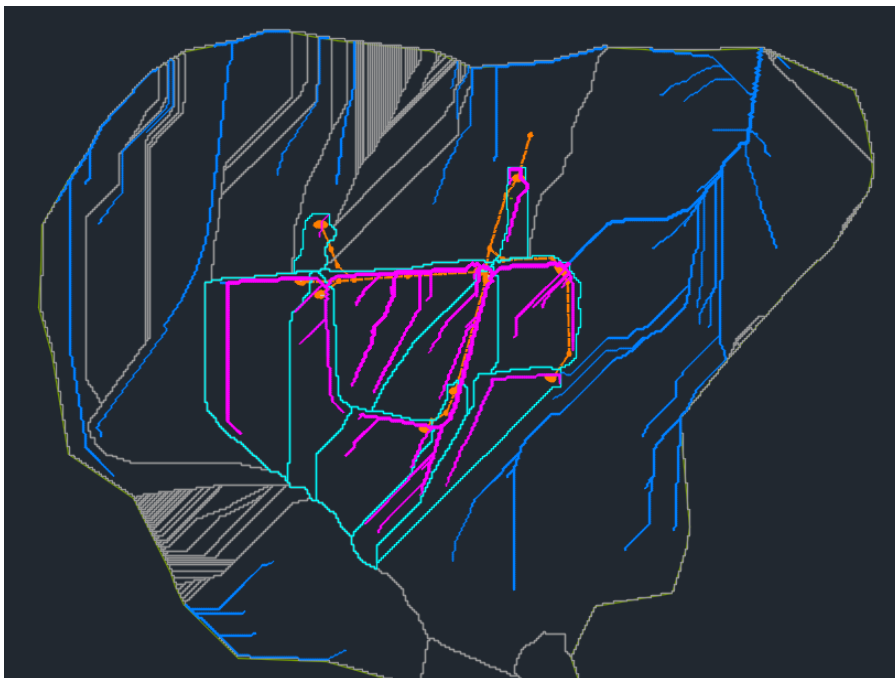
### Create catchment, flow paths and watersheds from a surface

A new command has been introduced to more easily create catchment polylines from a surface. The command creates polylines representing catchment areas that drain to specific points. The points can be structures, COGO points or AutoCAD points. In addition to the catchment areas, flow path and watershed polylines can also be created. The command can also create GIS data (GeoTIFFs and shapefiles) for all the above elements.

Before:

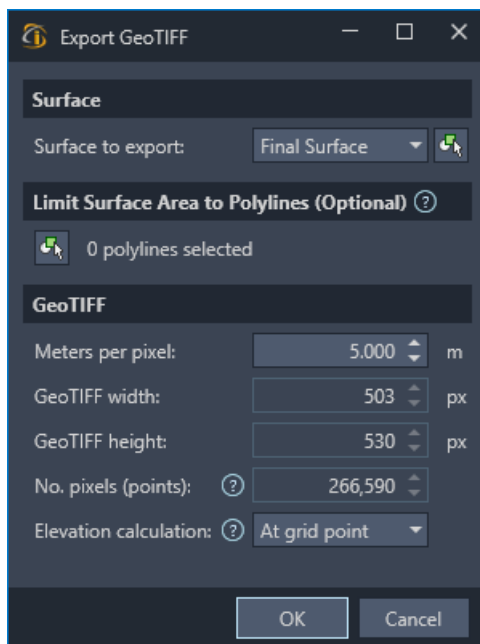


After:



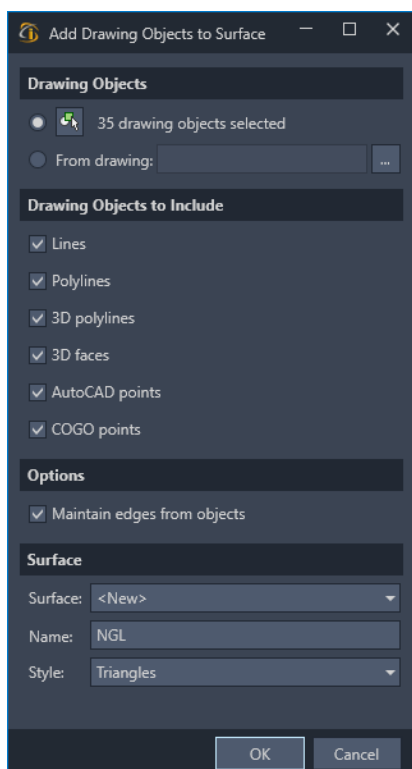
## Export surface to a GeoTIFF file

A new command has been introduced to export a surface to a GeoTIFF. The GeoTIFF can be used in GIS applications.



## Add drawing objects to a surface

A new command has been introduced that adds drawing objects to an existing surface or creates a new surface from the objects. This command is similar to adding drawing objects to a surface definition, but it also allows the user to add drawing objects from an external drawing into a surface in the current drawing. This is useful for heavy survey drawings that take long to open and are slow to create a surface from.

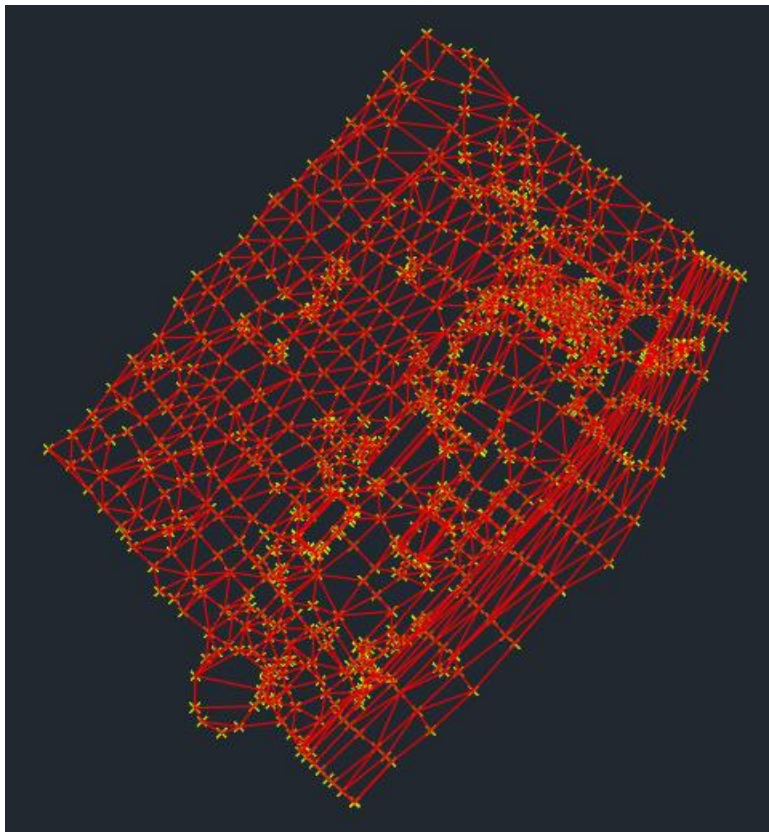
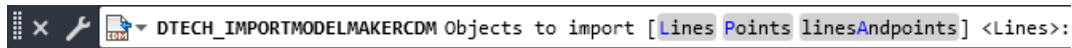


## Copy surface boundaries between surfaces

A new command has been introduced that copies surface boundaries (outer, hide, show, etc.) from one surface to another.

## Import ModelMaker CDM files

A new command has been introduced that imports lines and/or COGO points from a ModelMaker CDM file. Once the lines or COGO points have been imported they can be added to a surface to recreate the ModelMaker surface.



## Export multiple profiles data to CSV

The two commands **Export Profile** and **Export All Profiles** have been retired, and this new command has been redone from the ground up to replace the old commands functionality.

Multiple profiles can be exported to a CSV file. The location of the exported points along the profile can be controlled via various options (at interval, at alignment geometry points, at profile PVIs, etc.).

**Export Profiles Data**

**Profile Selection**

3 profiles selected

**Primary Profile**

Primary profile: VA Branch-1

**Interval Start Location**

☒ Relative to alignment start

☐ Relative to profile start ?

**Stations**

☒ At interval 10.000 m

☒ Primary profile start and end points

☒ Primary profile PVI points

☒ Primary profile curves' start and end points

☒ All profiles' start and end points

☐ All profiles' PVI points

☐ Alignment geometry points

**Options**

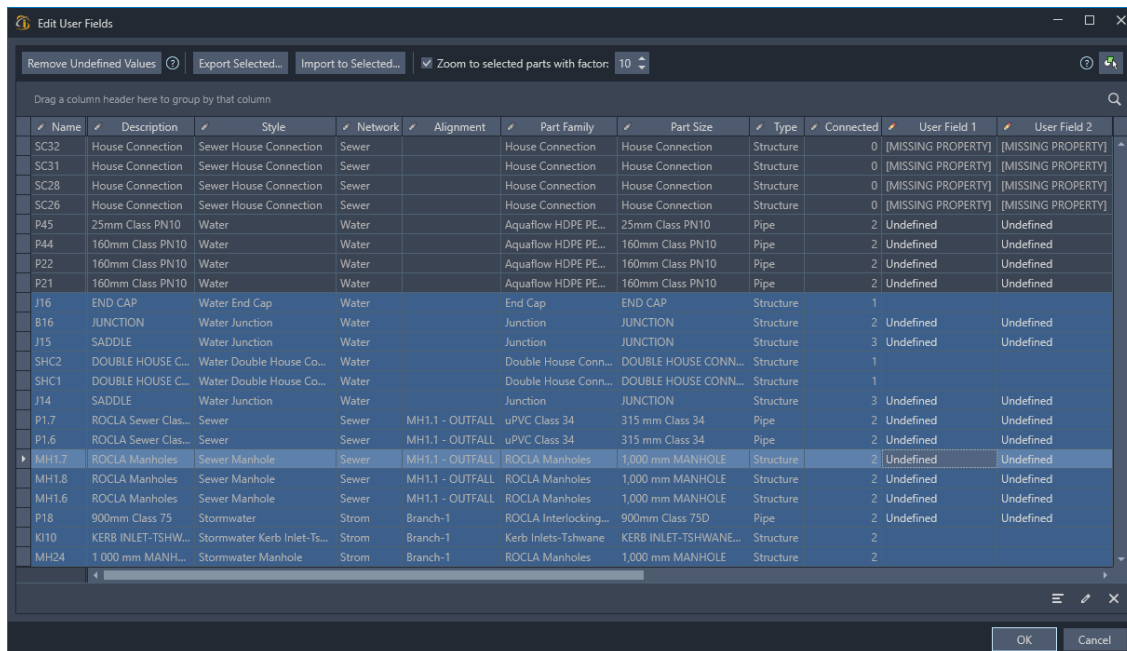
☐ Limit stations to primary profile range

☐ Export stations as raw stations

OK Cancel

## Edit network parts user fields command replaced

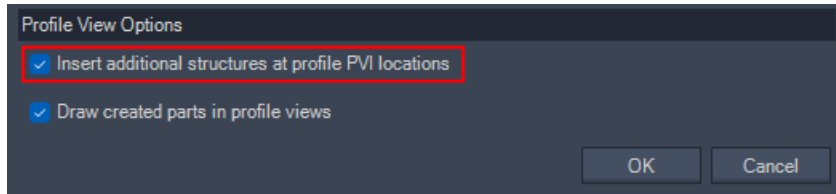
The edit user fields command has been replaced. The new command allows batch editing of selected network parts with option to easily filter the selected parts to make editing simpler.



## COMMAND IMPROVEMENTS

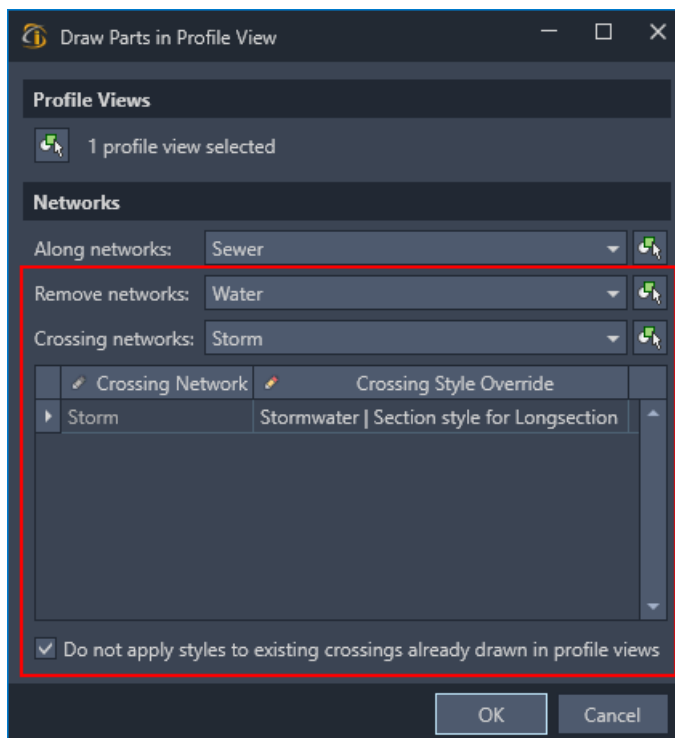
### Create Parts along Alignment PVI option and draw in profile view

Added an option to create structures at profile PVI points in addition to alignment PI points. Also added an option to draw the newly created parts in profile views. The user can select which profile views to draw the parts in.



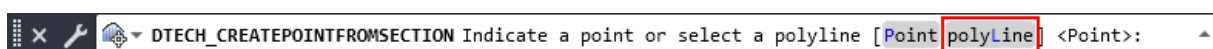
### Draw parts in profile view crossing pipes and styles

The draw parts in profile view command has been improved by adding additional options for: crossing networks; removing networks; assigning crossing styles.



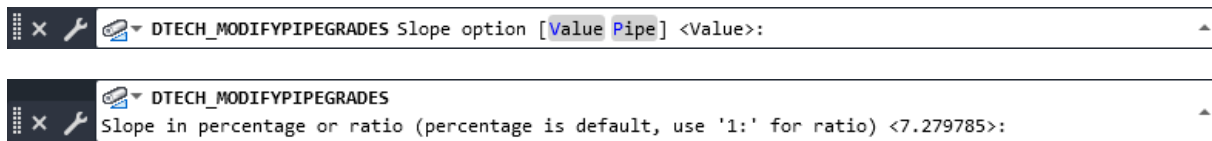
### Points from Section View polyline option

An option has been added to the points from section view command that allows a polyline to be selected from which to generate COGO points. Additionally, a bug that would always create the COGO points perpendicular to the alignment, has been fixed. COGO points will now be created on top of the sample line regardless of the sample line shape and rotation.



## Slope option added to grade pipe command

The option to provide a slope in either percentage or rise over run has been added to the grade pipe command. An option to select an existing pipe to get the slope from has also been added.



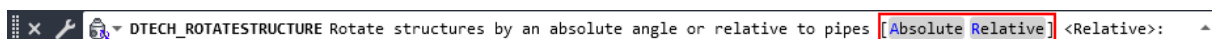
## Downhill vacuum lift

Previously sewer vacuum lifts could only be calculated in an uphill direction. This has now been expanded upon and the calculation can now also be made in a downhill direction.



## Rotate structures command rotates structures relative to pipes

The Rotate Structures command now includes an option to rotate structures relative to the connected pipes. This helps quickly rotate multiple structures (such as headwalls, outfalls, etc.) into the correct locations. If a structure is connected to two pipes then the average angle between the pipes is used.



## Offset points from alignment

The offset point from alignment command used to process all points in the drawing, this has now been changed to a selection of points. A bug that would cause points to be created from points far away from the alignment has also been fixed. If some points fail to be created then the failed points are reported on the command line.

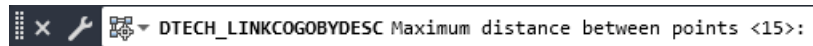


## Link points creates polyline instead of 3D polyline

The link points command will now create a 3D polyline instead of a regular polyline. The 3D polyline's vertices' Z values will match the COGO points' Z values. A option for maximum distance between COGO points has also been introduced.

## Link Points command changing point description

Added a prompt for a maximum distance between points that are to be linked with a polyline. Fixed a bug where COGO points processed by this command would get their description changed to "F1". The description will now not be changed.

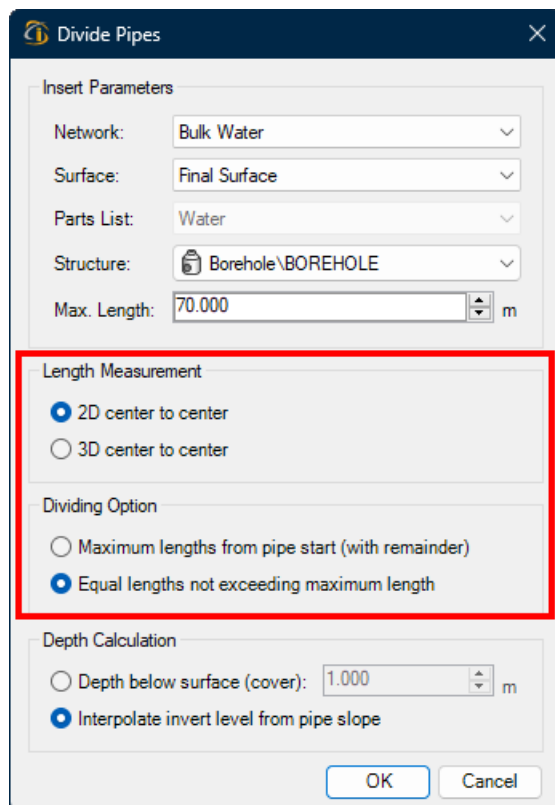


## Divide pipes command has more options

The Divide Pipes command includes options to specify how pipe length is measure, **either 2D center to center** or **3D center to center**. Additionally, you can choose how the pipe is divided:

**Maximum lengths from pipe start (with remainder)** – the pipe is divided into segments of the specified maximum length, with any remainder added to the last segment.

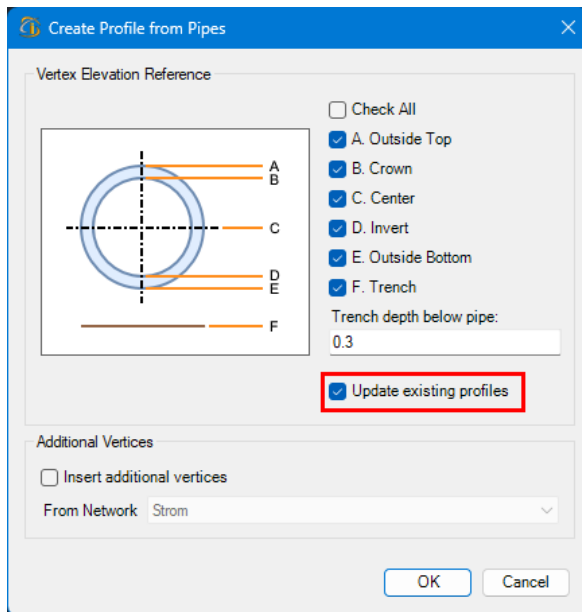
**Equal lengths not exceeding maximum length** – the pipe is divided into equal segments that do not exceed the specified maximum length.



## Profile from pipes update existing profiles

An option has been added to the profile from pipes command that allows the geometry of an existing profile to be updated instead of creating a new profile. This is used to update an existing profile that is already in use (referenced by band labels).

Pipes can now also be drawn in the opposite direction to the alignment and the command will still correctly draw the profile.



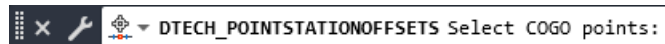
## COMMAND BUG FIXES

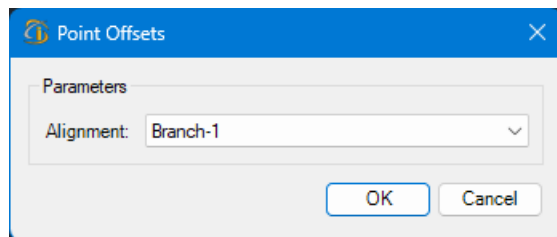
### SA Lo System command displays incorrect coordinates

Fixed an issue where the coordinates were not reprojected into Hartebeeshoek and remained in geographic degrees.

### Point Station Offset command interface

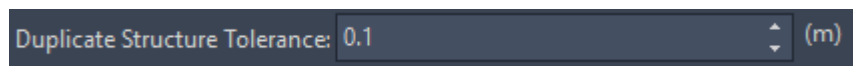
Changed the prompt to indicate that COGO points need to be selected and removed the point group option from the dialog as it was not implemented and was included in the dialog by mistake.





### Gravity and reticulation wizards not recognising surfaces

Fixed an issue where a surface with a name starting with an underscore would prevent the OK button from being clicked. Surface names can now start with an underscore. Changed the description in the dialog from **Minimum Structure Spacing** to **Duplicate Structure Tolerance** to make it clearer what the setting does.



### ProjectWise ribbon items missing

If ProjectWise is installed then part of ProjectWise's ribbon will disappear when iDAS loads its CUI on Civil 3D startup. This is a bug with ProjectWise that occurs whenever any CUI is loaded (manually or programmatically). The iDAS CUI used to be reloaded every time when Civil 3D was opened, but the loading mechanism has now been changed so that it does not reload the CUI every time Civil 3D is opened, and will only load the CUI if it is not already loaded. This means that the ProjectWise ribbon will only be affected the first time Civil 3D is opened after iDAS has been installed, or after the iDAS CUIs have been switched between Compact and Extended. To fix the ProjectWise ribbon restart Civil 3D.

### Add profile from surface to multiple profile views

When selecting multiple profile views belonging to the same alignment, duplicate profiles would be created for each profile view. This has now been fixed and only one profile per surface per alignment will be created.

### Move structure in profile view reference surface problem

When using the Move Structure command to move a structure in the profile view sometimes the structure would not move. This was due to a missing reference surface. A message box has been added to inform the user as to why the structure will not move.

## Vacuum lift preview shown from 0 elevation

The preview of the vacuum lift would always display from 0 elevation making it difficult to see the results when large elevations were used. This has been changed to make the lowest elevation displayed dynamic, so that the preview is always as large as possible.

## Insert structure command dialog not remembering settings

The insert structure in the profile view command was not remembering the interpolation settings between command runs. This has been fixed and it will now recall what was last provided by the user.

## Civil 3D 2025.2 related errors

Due to changes made by Autodesk in Civil 3D 2025.2 some commands were adversely affected. The commands that were affected modified profile view bands, and when they did so an error message would be displayed. Updates to these commands have been made to ensure they are compatible with the changes made by Autodesk to Civil 3D 2025.2. The following commands were affected:

- Import Band Set
- General plan production
- Add surfaces to profile views
- Corridor Wizard
- Plan production wizard
- Bulk water wizard

## Import Parcels not working for INP files from PC SWMM

Importing parcels from a PC SWMM INP file would fail. This was due to slight differences in the formatting of the INP file that PC SWMM generates. This has been fixed and parcels can now be imported from PC SWMM INP files.

## Support command opens the support page on the Devotech website

The old support dialog has been removed. Now, when running the command, Devotech's support page on our website will be opened instead.

## Survey grid command creates unused layers

The survey grid command creates unused, empty layers. This has been fixed, and no additional layers will be created.

## Profile feature lines command crashes if using a reference corridor

The profile feature lines command crashes if a reference corridor is selected as a target to extract elevations from to use as a profile. A check has now been added, and a reference corridor will now not be offered as a valid choice.

## Set reference surface command not assigning a surface

If the surface used in the set reference surface command contained double spaces then it would not be assigned to network parts as the reference surface. This has been fixed.

## Set reference surface command error if no networks in the drawing

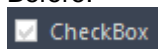
The reference surface command would crash if it was run when there are no networks in the drawing. This has been fixed and an error dialog will now inform the user that there are no networks present

## Checkboxes theming makes it difficult to see if it is checked or not

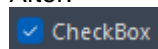
In Civil 3D 2025 and 2026 the checkbox checkmark in the command below are very light making it very difficult to see. This has been corrected by updating the theme. Affected commands:

- Convert Coordinate File
- Bulk Water Wizard
- Swap Air and Scour Valves
- Create Parts Along Alignment

Before:



After:



## Edit Structure command crashed if the pipe catalog is set incorrectly

When selecting a structure in the **Edit Structure** command, an error would occur if the structure family was not present in the pipe catalog. This has now been fixed.

## Edit Structure command crashed if structure is outside the surface

When selecting a structure in the **Edit Structure** command, an error would occur if the structure locations was not on top of the reference surface. This has now been fixed.

## Error if an incorrect pipe catalog is set

If a pipe catalog does not contain a part from the selected parts list in one of the commands below then a crash occurs. This has been fixed and now an error message will be displayed indicating that the pipe catalog is not properly set. Affected commands:

- Bulk Water Wizard
- Storm Wizard
- Sewer Wizard
- Reticulation Wizard
- Break pipe
- Divide Pipe
- Insert structure

## Bulk water wizard crash for some alignments

When alignments that contain duplicate PI points are used in the bulk water wizard, it would result in zero length pipes, which in turn would lead to a crash. A check has been added for duplicate PI points, so no zero length pipes will be created, and thus the crash has been fixed.

## PIPE MANAGER IMPROVEMENTS

### Multiple surface channels fail to analyze

If one surface channel flows into another surface channel the analysis would fail due to the Manning coefficient of the connecting conduit being set to zero. This has been fixed and a network of surface channels can now be properly analyzed.

### Surface channel node depth displayed incorrectly

The surface channel node depth displayed on the profile graph was being calculated relative to the channel invert and not the structure sump elevation. This was only a graphical bug and has now been fixed.

### Surface channel surface column renamed

The column called **Channel Surface** has been renamed to **Channel Surface (Sampled)**. This was done to help prevent confusion and clearly indicate that a sampled surface that is part of the sample line group attached to the alignment is required in the column.

	Alignment Name	Alignment Length (m)	Sample Line Group	Channel Surface (Sampled)	No. off Cross Sections
1	Channel	230.553	Channel 2	NGL	16
2	Channel-Left (0.100m)	230.568	Channel-Left (0.100m) 3	NGL	4

### Surface channel profiles update after analysis

Profiles created from surface channels will now automatically update after a successful analysis is run. This streamlines the process of updating the profiles.

No. off Cross Sections	Flow to Node	Result Profiles
16	MH7	Use the profile buttons above to create and update profiles.
4	MH9	Node Depth (Max Node Water)   EGL (Max EGL)

### Sewer HC line starting at 0,0

If a house connection structure was placed on top of a sewer main line then the house connection line is drawn from coordinate 0,0 to the house connection location. This has now been fixed.

### Double space in surface name causes an invalid surface warning

If a surface name contains multiple spaces between word the pipe manager would not recognize the surface as being valid. This has now been fixed.

## Water pump power vs curve interface options

The way either a water pump's power or curve is assigned has been changed. Now, if a curve is assigned to the pump the curve will be used in the analysis. If the curve is set to **<None>** then the power value will be used instead of the curve. If the curve is set to **<None>** and the power is set to **0** then the analysis will fail.

## Deleted alignments show an error dialog in Civil 3D 2025

If alignments, that were previously used in the pipe manager, are deleted from the drawing, then an error dialog would be shown when the pipe manager was opened. This only affected Civil 3D 2025 and has now been fixed.

## Depth groups import incorrectly

When importing depth groups from a spreadsheet the depths categories would be imported incorrectly and the grid headers would disappear. This has now been fixed.

## Import EPASWMM and SSA results error

When importing results from EPASWMM or SSA an error is displayed and the results are not imported. This has been fixed and the maximum results from the results files are imported.

## Climate change effects option keeps disabling

The Climate Change Effects option would always be disabled when the pipe manager was closed and reopened. This has been fixed. The option will now be remembered. For existing drawings the options default value will be off, but for new drawings the default value will be on.

## Added Tees and Crosses to BOM bends (fittings)

The **Bends (Water Networks)** tab in the BOM section of the pipe manager has been renamed to **Fittings (Water Networks)**. The table has been reformatted to provide additional information: all the pipe sizes are listed in one column; the structure names have been added to a column; the bend type column is now called fitting, which includes crosses and tees.

	Pipes	Structures	Fitting	Quantity
1	160mm Class PN10, 160mm Class PN10	B3	90°+45°	1
2	160mm Class PN10, 160mm Class PN10	B7	STRAIGHT	1
3	160mm Class PN10, 160mm Class PN10	B11	22.5°+11.25°	1
4	160mm Class PN10, 160mm Class PN10	B13	90°+45°+11.25°	1
5	160mm Class PN10, 160mm Class PN10	B16	45°+11.25°	1
6	160mm Class PN10, 160mm Class PN10, 180mm Class PN10	J3	TEE	1
7	160mm Class PN10, 160mm Class PN10, 25mm Class PN10	J14, J15	TEE	2
8	160mm Class PN10, 160mm Class PN10, 40mm Class PN10	J4	TEE	1
9	160mm Class PN10, 160mm Class PN10, 90mm Class PN10	J13	TEE	1
10	160mm Class PN10, 300mm Class T2, 300mm Class T2, 90mm Class PN10, 90mm Class PN10	J8	More than four pipes	1
11	160mm Class PN10, 90mm Class PN10, 90mm Class PN10	J6, J11	TEE	2
12	180mm Class PN10, 180mm Class PN10	B1	45°	1
13	40mm Class PN10, 40mm Class PN10, 90mm Class PN10, 90mm Class PN10	J2, J5	CROSS	2
14	40mm Class PN10, 90mm Class PN10, 90mm Class PN10	J1, J7, J9, J10	TEE	4

## Remapping parts not updating the current profile

When applying a new mapping to pipes and structures the current profile would not update to reflect the new mappings, and in some situations the profile tables would appear empty. This has been fixed and the profile will now update after a mapping has been updated.

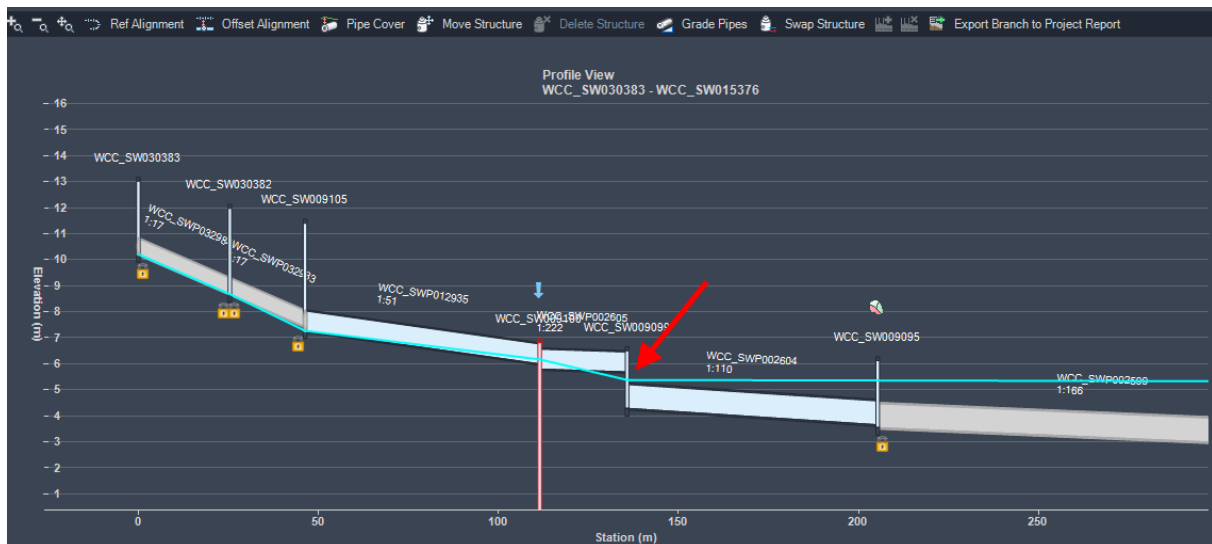
## Profile pipe cover error

When setting the pipe cover from the tables below the profile there would occasionally be an error displayed when closing the pipe manager. This error was the result of the sump elevation being above the rim elevation. This has been fixed and no error message should now occur.

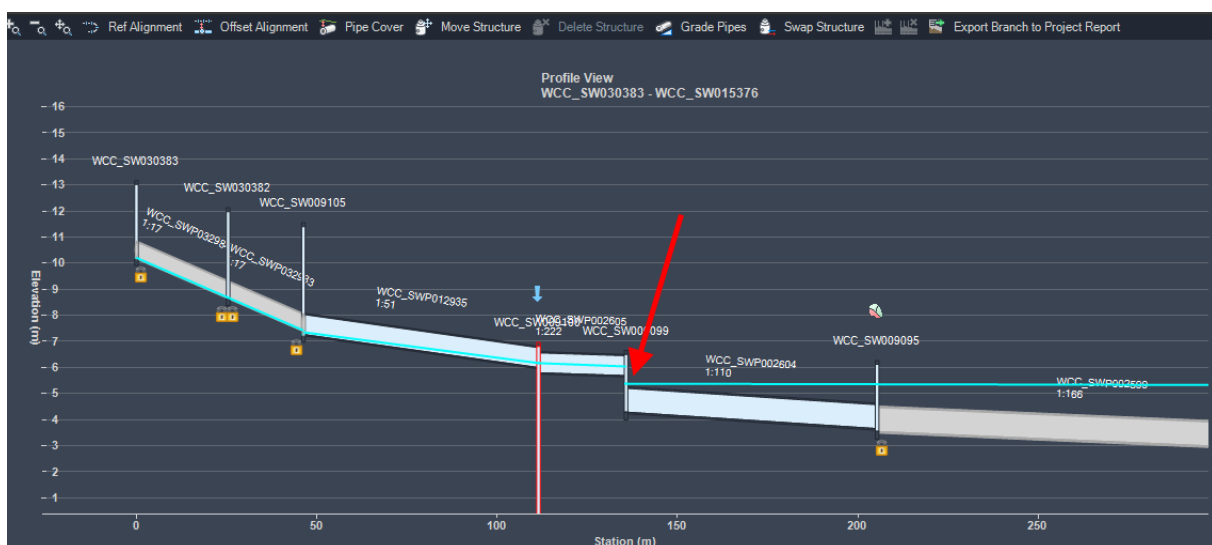
## Improved HGL calculation

The HGL calculation was enhanced to improve its appearance in various situations.

Before:



After:



## Library hydrograph interface simplified

Unused buttons from the library hydrographs has been removed in order to make the interface simpler.

## Improved as built text detection

Improved the method used for determining which text to assign to pipes or structures. The new method increases the amount of positive matches, thus reducing the need to manually move the text closer to pipes and structures.

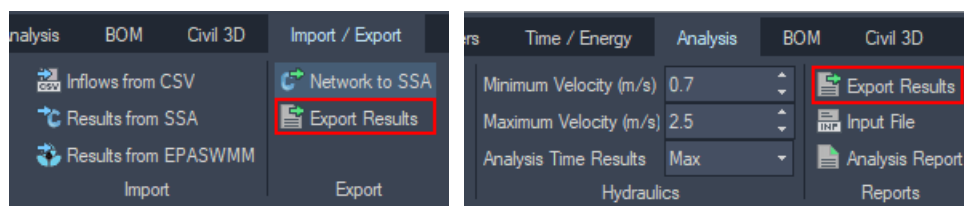
## Water report file deletion

The water report file generated by the Epanet engine was deleted after an analysis was completed. This has been changed, and now the report file will be created in the same directory as the INP file and the drawing file. This aligns the behavior of the Epanet engine with the Epa Swmm engine.

## Export analyzed results

A button has been added to the ribbons to export all the analyzed results (for all timesteps) to a CSV file. The results file has been formatted to allow for easy filtering and processing in spreadsheet software.

The button's location for water networks is **Analysis Tab** → **Reports Panel**. The button's location for storm and sewer networks is **Import / Export Tab** → **Export Panel**



## Add pond to the results summary grids

Ponds were missing from the result summary grids, and the only place to get their results was through the results file. Ponds have now been added to all relevant result grids.

## Graphs missing surface ponds and surface channels

The graph results were missing surface ponds and surface channels. These have now been added to the graphs. Also, weirs, orifices and outlets did not report their flow because they are modelled as links in the SWMM engine but structures in iDAS. In order to remedy this, the weirs, orifices, and outlets have been moved from the **Structures** tab to the **Conduits** tab.

## Control structures missing 'Link To Structure'

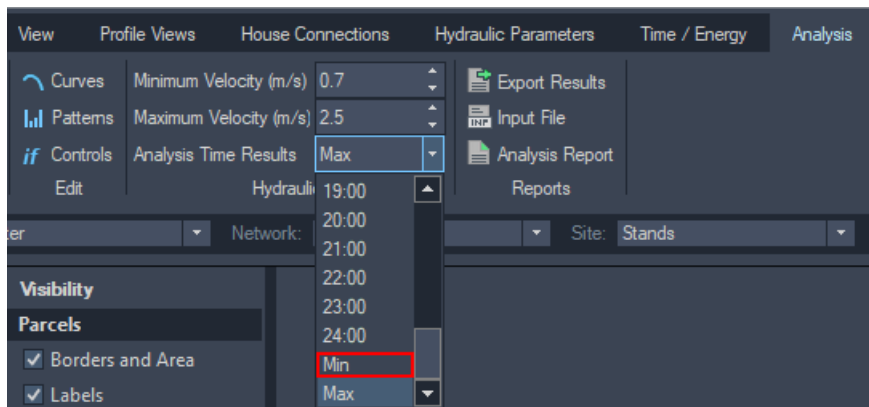
The first time the pipe manager is opened after adding an orifice, weir, or outlet the **Link to Structure** cells would only contain the **<None>** option, and no additional options would be present until the pipe manager was closed and then reopened. This has now been fixed and all valid **Link to Structures** are immediately available to choose from.

## Water peak flow analysis changes the end analysis time

When running the water peak flow analysis the end analysis time would be changed in order to correctly analyze the peak. Unfortunately, after the analysis was complete the end analysis time did not revert back to the original value. This has now been fixed.

## Water minimum analysis time result and more time steps

An option to view the minimum result values for a water network has been added. Also, all result timesteps have been added, where previously the timesteps were limited to the report time steps.



## Force main pipes added to stormwater and sewer networks

A Darcy-Weisbach roughness height property has been added to the conduit grid for stormwater and sewer networks. When this value is not equal to zero the conduit will act as a pressurized pipe when full and use the Darcy-Weisbach roughness height instead of the Manning's roughness coefficient. This is needed to more accurately model pump rising mains.

P_1 Remove Space(s) from Name(s) Swap Size Apply Minimum Size					
	Minimum Pipe Inner Diameter (mm)	Manning's Roughness Coefficient	Darcy-Weisbach Roughness Height for Force Main (mm)	Number of Barrels	
1	0	0.0130	0.010000	1	
2	0	0.0130	0.000000	1	
3	0	0.0130	0.000000	1	
4	0	0.0130	0.000000	1	
5	0	0.0130	0.000000	1	

## Units added to result graphs

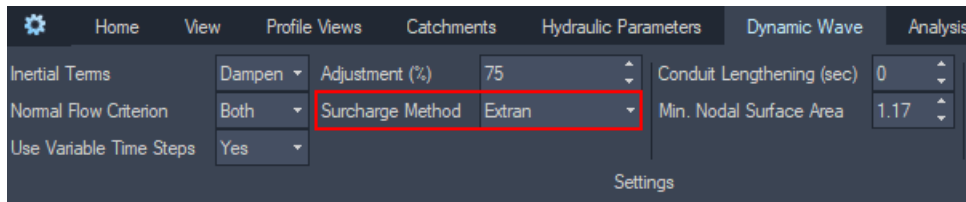
Units have been added to the Y axis of the results graphs to more easily interpret the values that are displayed in the graph area.

## SWMM engine version upgraded to 5.2.4

The SWMM engine has been upgraded to version 5.2.4. With the upgrade a new analytical property has been added to the **Dynamic Wave** properties. The property is called **Surcharge Method**. The SWMM documentation describes the property so:

*Selects which method will be used to handle surcharge conditions. The **Extran** option uses a variation of the Surcharge Algorithm from previous versions of SWMM to update nodal heads when all connecting links become full. The **Slot** option uses a Preissmann Slot to add a small amount of virtual top surface width to full flowing pipes so that SWMM's normal procedure for updating nodal heads can continue to be used.*

This property can assist in stabilizing some networks that are unstable.



## Flap Gate property added to conduits

A flap gate property has been added to the conduits grid for storm and sewer networks. This option allows for the modelling of one-way pipes.

Pipes					
P_1 Remove Space(s) from Name(s) Swap Size Apply					
	Initial Flow (m³/s)	Maximum Flow Allowed (m³/s)	Flap Gate	Inlet Structure	
1	0	0	<input type="checkbox"/>	KI6	
2	0	0	<input type="checkbox"/>	MH14	
3	0	0	<input type="checkbox"/>	MH10	
4	0	0	<input type="checkbox"/>	KI4	

## Answering No to recalculating sewer house connects does not work

When clicking on the **Calculate HC** button in the sewer house connections tab, the displayed dialog displays a Yes/No question asking if the user wants to continue. When answering **No** to the question the command continues anyway. This has now been fixed, and answering **No** will stop the command from proceeding.

## Exclamation mark missing from link Slope (Ratio) column

The exclamation mark, indicating an invalid slope, was missing from the Link's **Slope (Ratio)** column. The exclamation mark has now been added.

	Start Cover (m)	End Cover (m)	Slope (%)	Slope (1:Ratio)
1	0.506	1.411	1.250	80.000
2	1.411	1.829	0.500	200.000
3	1.829	1.986	0.500	200.000
4	1.199	1.136	1.000	100.000
5	1.084	0.506	1.250	80.000
6	0.506	0.687	! 2.658	! 37.625
7	0.737	0.771	0.948	105.504

## Design surface change not updating cover levels

When the design surface was changed the grids displaying pipe and structure cover levels would not get updated. This has been fixed, so cover levels will now update correctly.

## Invert levels and slope columns added to culverts

New columns have been added to the culverts grid to display the culvert inverts and slope.

Pipes								
Culverts		Invert Length (m)	Outlet Structure	Start Invert (m)	End Invert (m)	Slope (%)	Slope (1:Ratio)	Maximum / Full Flow
Channels								
Direct								

## Networks inside blocks error

If a network is contained inside a block various errors could occur in the pipe manager. A check has been added to exclude networks contained in blocks from the pipe manager.

## Line on map from surface channel to 0,0 point

In some situations a line would be drawing from the end of a surface channel to the 0,0 point on the map. This has been fixed.

## Catchment auto flow paths displays error if no catchments selected

If the **Auto Flow Paths** button is clicked when no catchments are selected in the grid then an error message is displayed. This has been fixed.

## Description columns added to all conduit grids

A description column containing a pipe's description property has been added to all conduit grids.

Pipes			
Culverts		Culvert Name	Description
Channels			
Direct			
Links			
1	P2	W 600 H 450 WALL 100 BARRELS 2	

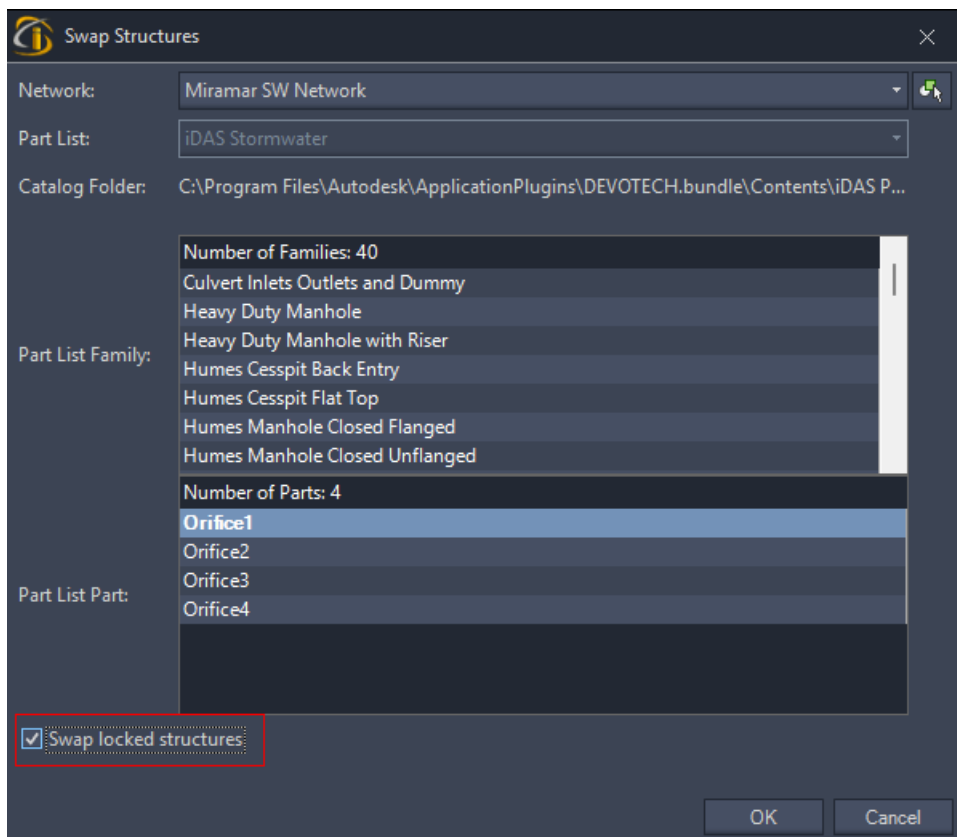
## Add alignment length column to surface channels

A column containing the alignment length has been added to the surface channels grid.

	Alignment Name	Alignment Length (m)	Sample Line Group
1	Channel	230.553	Channel 2
2	Channel-Left (0.100m)	230.568	Channel-Left (0.100m) 3

## Swap locked structures

An option has been added to the swap structures dialog to force locked structures to swap.



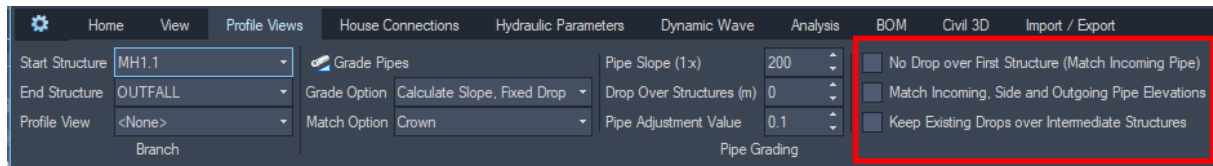
## “Ctor” error displayed when opening some networks

An error dialog containing the word **ctor** would sometimes be displayed for networks containing catchments. This error has been fixed.

## Improved pipe grading tool

### New additional options

The existing additional options were modified with the following options:



- **No Drop over First Structure (Match Incoming Pipe)** — use this option if you want the incoming pipe level (invert, center or crown based on the Match Option setting) match the first selected pipe.
- **Match Incoming, Side and Outgoing Pipe Elevations** — use this option to ensure that all pipe levels (whether invert, center, or crown, depending on the Match Option setting) align at the structures. Note that pipes from other branches may also be adjusted, which could result in adverse slopes.
- **Keep Existing Drops over Intermediate Structures** — use this option if you want to adjust the pipes while preserving the current drop values over structures. The pipes can be graded or moved vertically, but the drop values over the structures will remain unchanged.

### Improved keyboard shortcuts

When using keyboard shortcuts with the numeric keys to grade or move pipes, the Ctrl and Alt keys now serve the same function. This simplification removes the need for users to choose between them.

## IDAS CIVIL 3D TEMPLATE IMPROVEMENTS

### Direction arrow style adjustment

The direction arrow style was adjusted to display at the pipe middle.

Before:

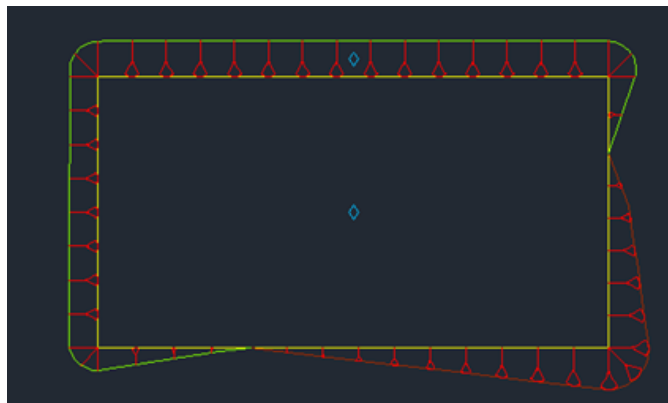
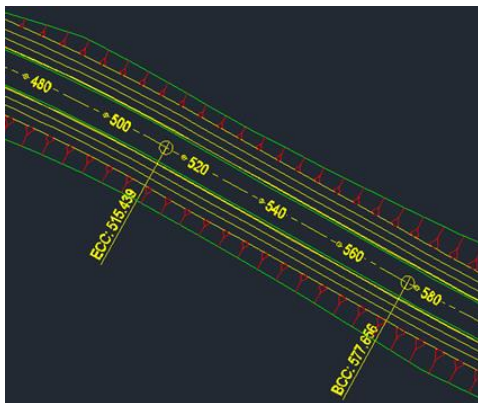


After:



### Tadpole slope pattern style

A new tadpole slope pattern style was added to the template. It can be used for the roads and platforms:

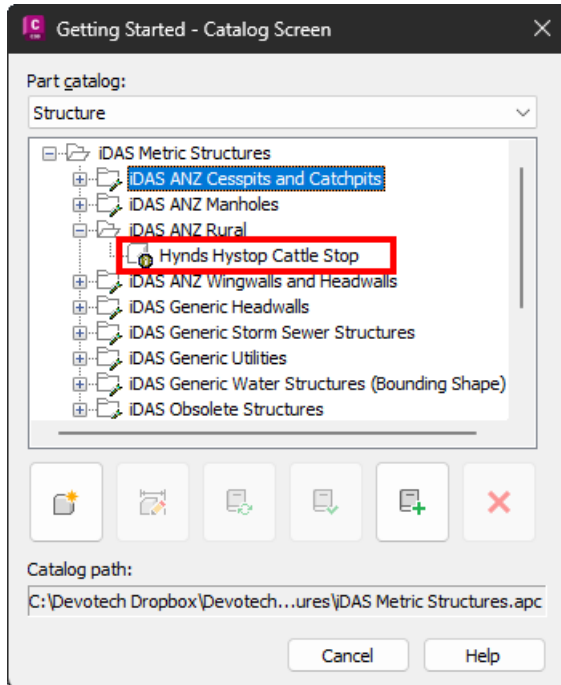


## PIPE CATALOG IMPROVEMENTS

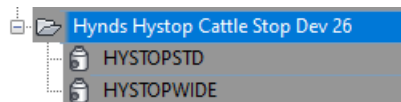
### New structures

#### Hynds Hystop Cattle Stop

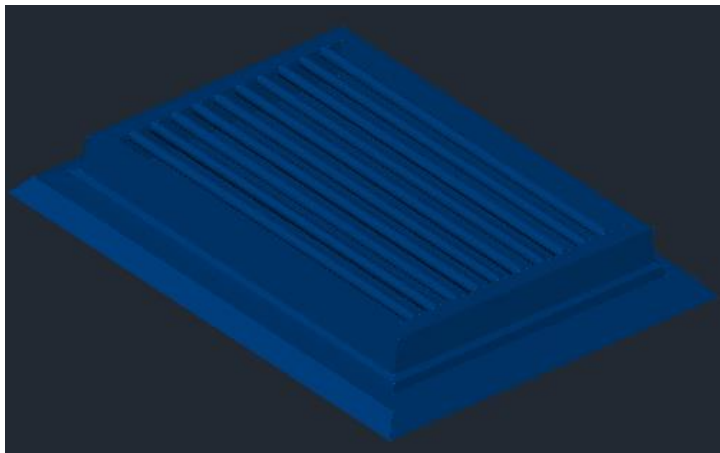
This structure can be found in the **iDAS ANZ Rural** subfolder:



It contains two sizes as per Hynds catalog:

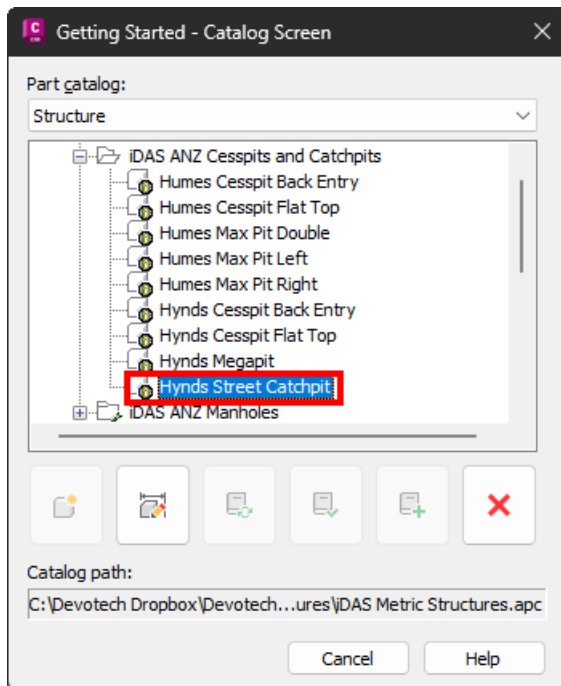


3D view:

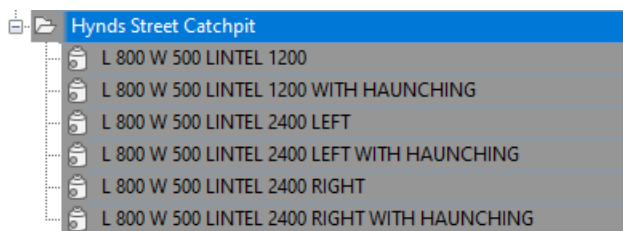


## Hynds Street Catchpit

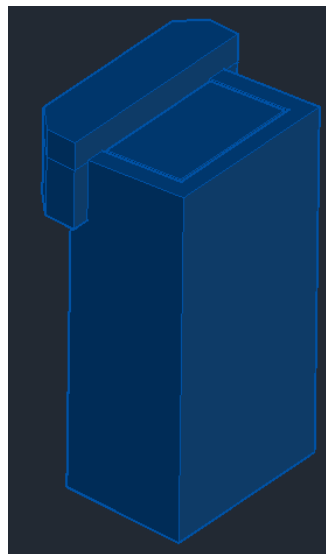
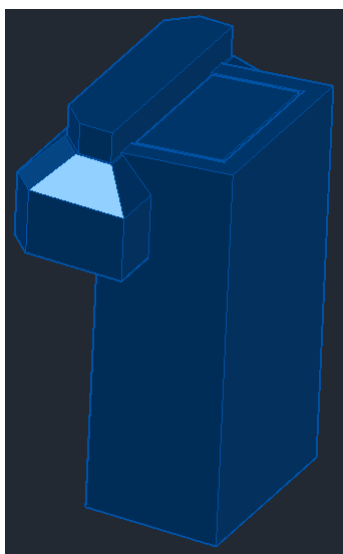
This structure can be found in the **iDAS ANZ Cesspits and Catchpits** subfolder:



It contains the following sizes:

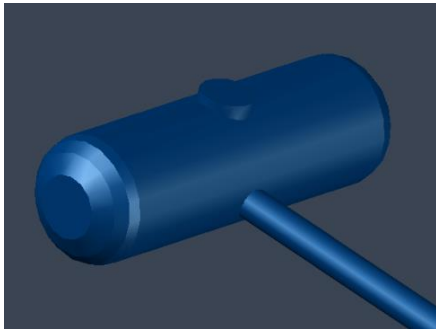


Example of a structure with and without haunching:

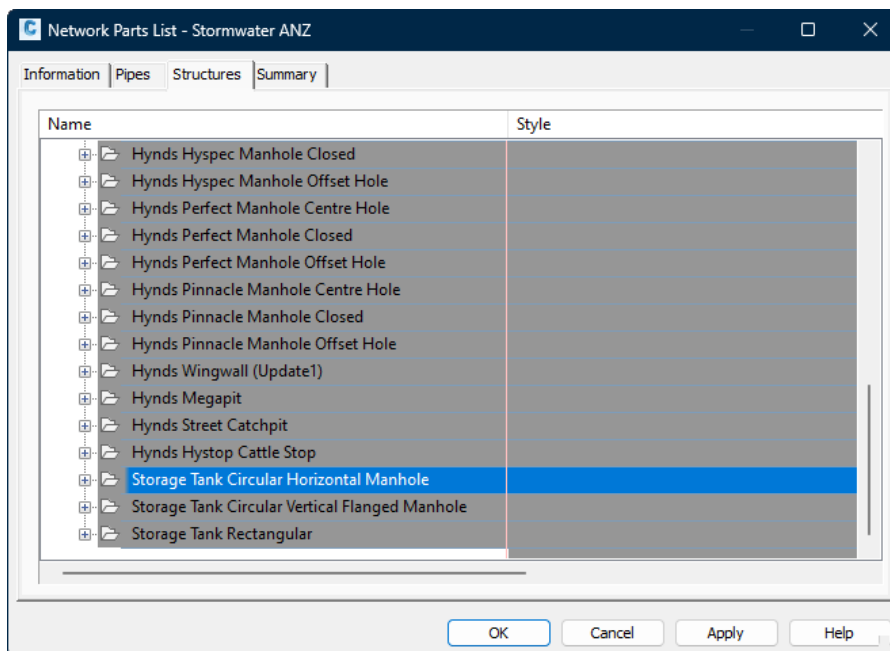


## Storage Tank Circular Horizontal Manhole

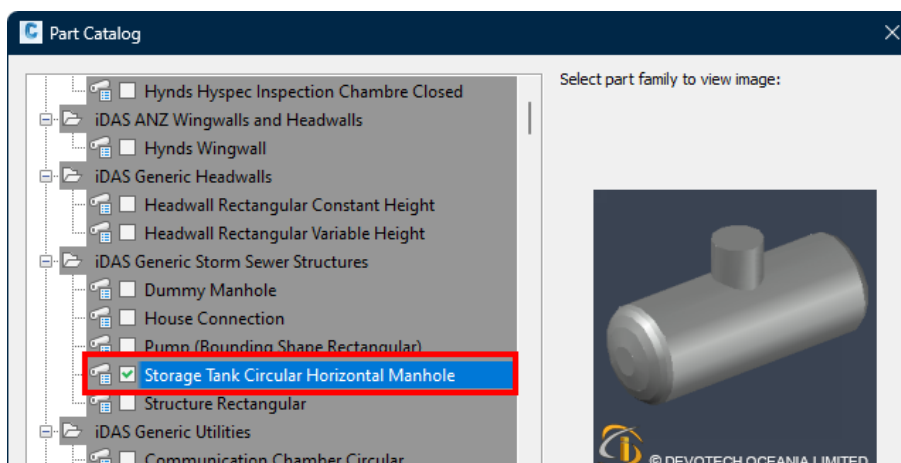
A new structure for horizontal circular tanks was developed:



It can be found in the **Stormwater** part list but only one size was imported as there is so many sizes, therefore, users must import the correct sizes as per project needs.



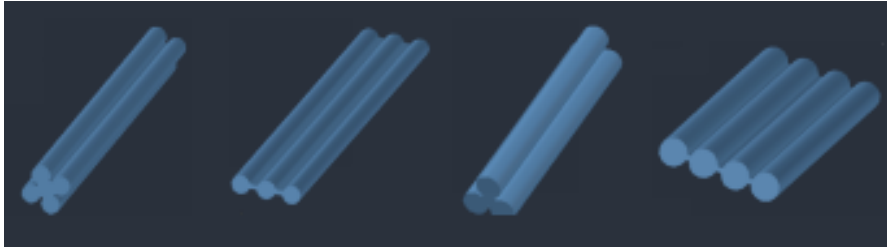
If you want to import this part into a different part list, you can find it under iDAS Generic Storm Sewer Structures:



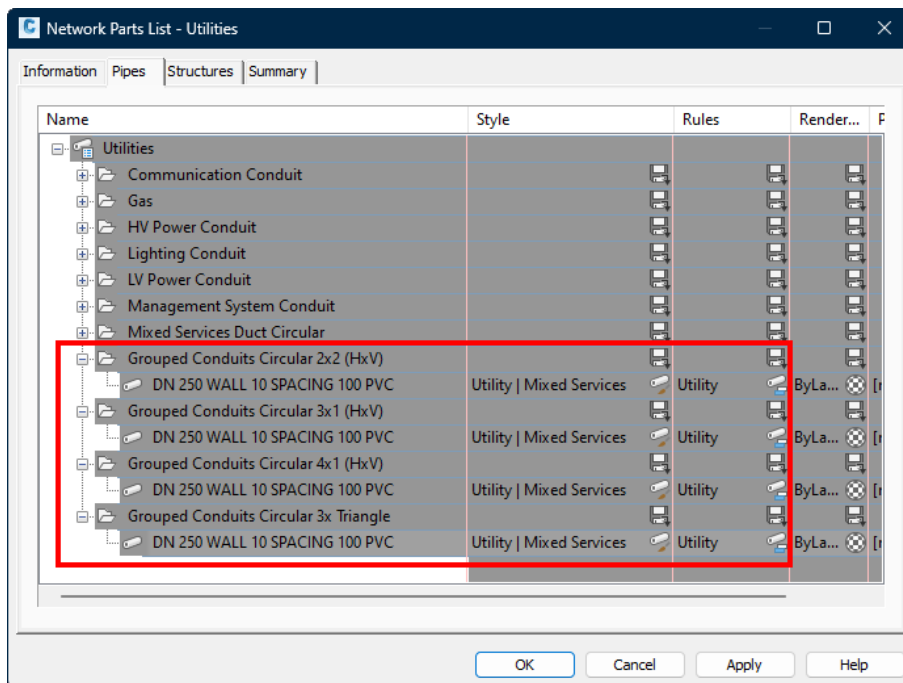
## New pipes

### Grouped Conduits

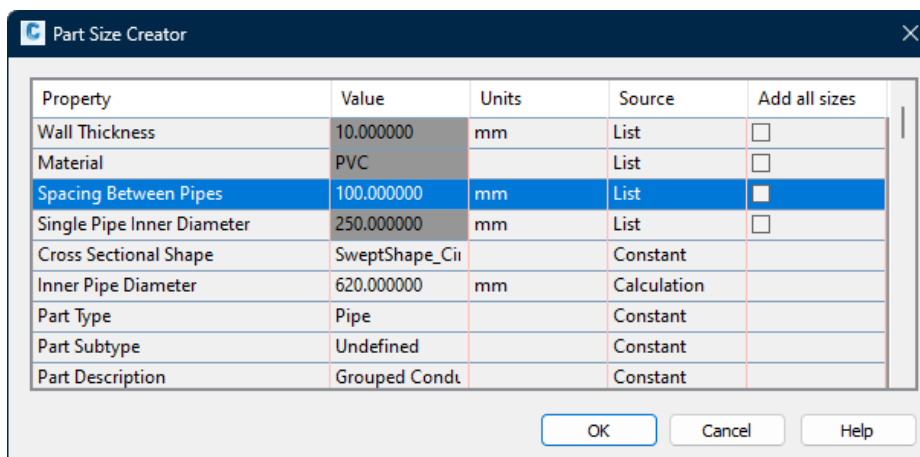
New grouped conduits families were developed for the utilities but they can also be used for other services:



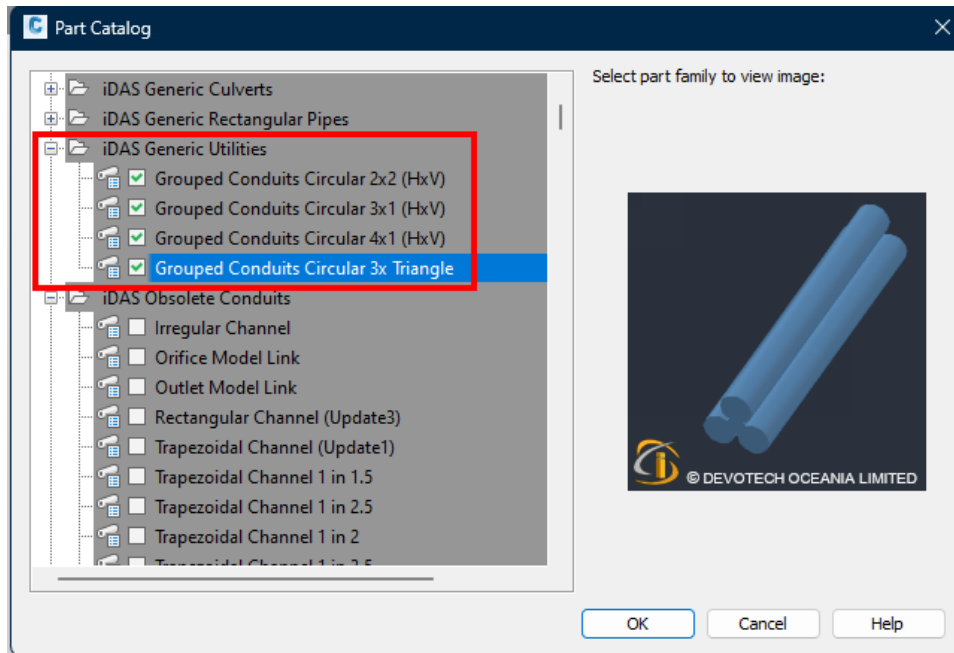
They can be found in the **Utilities** part list but only one size was imported for each type as there is so many sizes, therefore, users must import the correct sizes as per project needs.



When importing different sizes, the spacing between pipes can be defined for each size:



If you want to import them into a different part list, you can find them under iDAS Generic Utilities chapter in the iDAS Pipe Catalog:

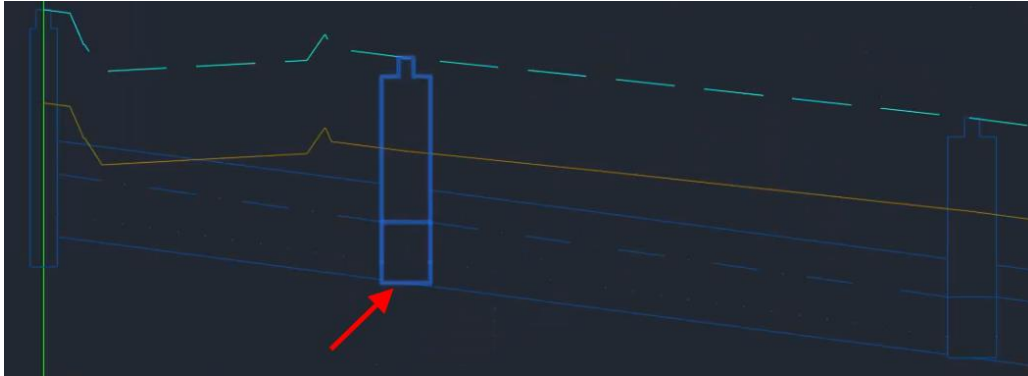


These conduits can be used for various services and since they are modeled in Part Builder, they can also be used for the clash detection.

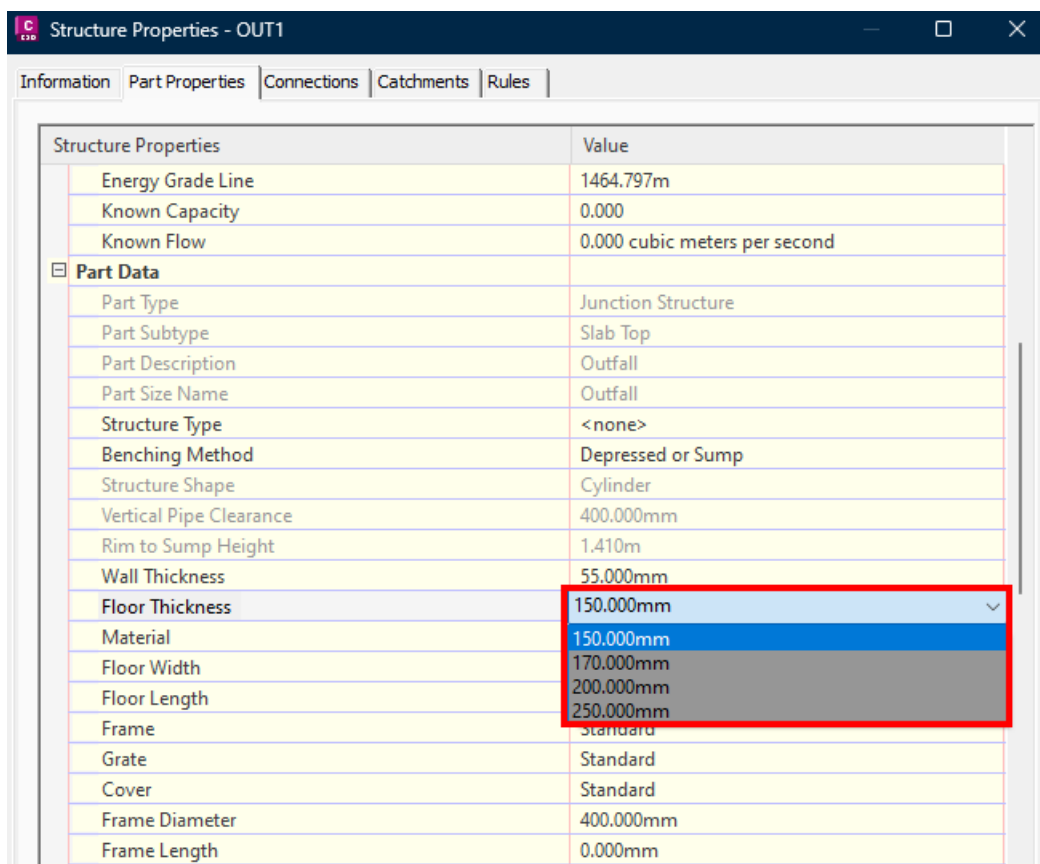
## Updates to existing structures

### Floor thickness 0 mm added to some structures

Some clients prefer displaying the structure's outside bottom level at the pipe invert level in the profile view:



This visual appearance can be achieved by setting the structure's floor thickness to 0 mm. However, some structure families did not offer 0 mm thickness to be used for floor thickness:



The 0 mm floor thickness was added to the following structures:

#### RSA storm sewer structures

- Drop Inlets
- Field Inlets
- Grid Inlets

- Grid Inlets (Update 1)
- Grid Inlets-Double
- Grid Inlets-GT
- Grid Inlets-Triple
- Inlets
- Inlets SA
- Junction boxes
- Outfall
- Outlet-Pond
- Rocla-Manholes (Update 2) - New family
- Salberg Manholes (Update 1) - New family
- Storage Units

#### Generic storm sewer structures

- Dummy Manhole
- House Connection
- Outfall Rectangular
- Storage Tank Circular Vertical Flanged Manhole
- Storage Tank Rectangular
- Structure Rectangular

Example of 0 mm thickness available for floor thickness:

Structure Properties	Value
Energy Grade Line	0.000m
Known Capacity	0.000
Known Flow	0.000 cubic meters per second
<b>Part Data</b>	
Part Type	Junction Structure
Part Subtype	Slab Top
Part Description	Outfall
Part Size Name	Outfall
Structure Type	<none>
Benching Method	Depressed or Sump
Structure Shape	Cylinder
Vertical Pipe Clearance	400.000mm
Rim to Sump Height	1.004m
Wall Thickness	55.000mm
Floor Thickness	150.000mm
Material	0.000mm
Floor Width	150.000mm
Floor Length	170.000mm
Frame	200.000mm
Grate	250.000mm
Cover	Standard
Frame Diameter	400.000mm
Frame Length	

## IDAS SUBASSEMBLIES

### Devotech SANRAL Cut Fill Ver 21 Improvements

Fixed the bug where fill slope never used a positive value if the **Create High Fill Drain** parameter was set to **Never**:

Design

Display

Extended Data

Object Class

Subassembly

Information

General

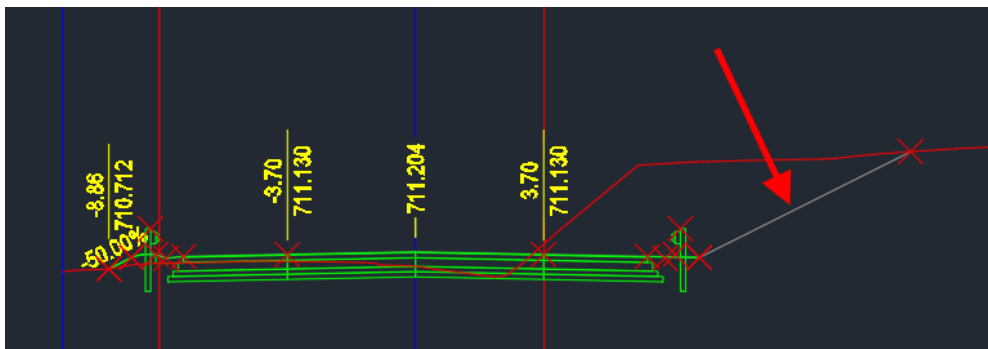
Data

ADVANCED

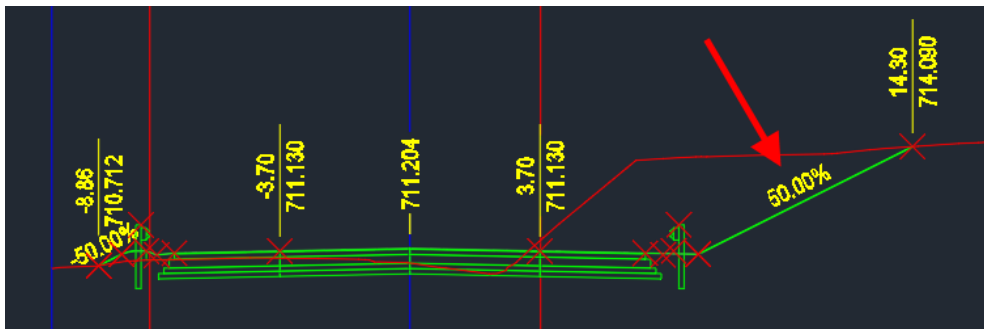
Parameters

Side	Right
Created by Devotech Africa for Devotech Afric...	0.000
Attach Berm to Drain Outside Point in Shallow...	No
Berm Height	0.500m
Berm Offset	3.000m
Berm Side Slope	1:1.00
Berm Top Width	0.500m
Create Berm in Deep Cut	Only When Surface Crossslope is Towards Road
Create Berm in Shallow Cut	Only When Surface Crossslope is Towards Road
Create Hight Fill Drain	Never
Deep Cut Bench Slope (Positive Up, Negative...	1:4.00
Deep Cut Bench Width	1.500m
Deep Cut Drain Flowline Point Code	Channel_Flowline_Concrete
Deep Cut Range 1 Max Depth	2.000m
Deep Cut Range 1 Slope	1:2.00
Deep Cut Range 2 Max Depth	5.000m
Deep Cut Range 2 Slope	1:1.00
Deep Cut Range 3 Max Depth	9999.000m
Deep Cut Range 3 Slope	1:0.50
Guardrail Offset From Road Edge	0.700m
Guardrail Point Code	Guardrail_R
High Fill Drain Backslope Height	0.110m
High Fill Drain Backslope Width	0.300m
High Fill Drain Flowline Point Code	Curb_Flowline
High Fill Drain Foreslope Height	-0.050m
High Fill Drain Foreslope Width	0.500m
High Fill Drain Slab Thickness	0.190m
High Fill Shoulder Rounding	Yes
High Fill Slope (Positive Up, Negative Down)	1:2.00
Low Fill and High Fill Daylight Point Code	Daylight,Daylight_Fill

In the example below, the **deep cut** condition was overridden to **high fill** with the slope value being positive (going up). The daylight link (gray line) was not created:



The following image shows the result when updated subassembly was used:



## Devotech SANRAL Cut Fill Ver 22 Improvements

1. A new target parameter **High Fill Unsurfaced Shoulder Width** was added to override the width of unsurfaced shoulder in the high fill condition:

Target Mapping

Corridor Name:  
CD Alignment\_1

Baseline Start Station:  
0.000

Baseline End Station:  
2112.860

Offset and Elevation Surface

Subassembly ▼	Baseline ▼	Region ▼	Start Station	End Station
V-Drain and Level Drain Foreslope Width	Baseline Alignment_1	Region	0.000	800.000
DevotechSANRALCutFillVerDevelopment134	Baseline Alignment_1	Region	0.000	800.000
Create Berm in Deep or Shallow Cut at Target	Baseline Alignment_1	Region	0.000	800.000
Trim Fill at Target	Baseline Alignment_1	Region	0.000	800.000
Deep Cut Bench Width	Baseline Alignment_1	Region	0.000	800.000
Apply Deep Cut at Target	Baseline Alignment_1	Region	0.000	800.000
Apply High Fill at Target	Baseline Alignment_1	Region	0.000	800.000
Apply Low Fill at Target	Baseline Alignment_1	Region	0.000	800.000
Concrete Drain Backslope Width (Shallow and Deep Cut)	Baseline Alignment_1	Region	0.000	800.000
Concrete Drain Foreslope Width (Shallow and Deep Cut)	Baseline Alignment_1	Region	0.000	800.000
Shallow Cut Bench Width	Baseline Alignment_1	Region	0.000	800.000
Apply Shallow Cut at Target	Baseline Alignment_1	Region	0.000	800.000
Shallow Cut Unsurfaced Shoulder Width	Baseline Alignment_1	Region	0.000	800.000
High Fill Unsurfaced Shoulder Width	Baseline Alignment_1	Region	0.000	800.000
Low Fill Unsurfaced Shoulder Width	Baseline Alignment_1	Region	0.000	800.000
V-Drain and Level Drain Backslope Width	Baseline Alignment_1	Region	0.000	800.000
V-Drain and Level Drain Foreslope Width	Baseline Alignment_1	Region	0.000	800.000

2. Fixed the bug that caused the unsurfaced shoulder in high fill condition to not to change the shoulder width if the high fill drain was not used.

## SABS Fig 4 curb

SABS Fig 4 curb was added to Assemblies drawing.



