

# Readme for Advanced Road Design for Civil 3D, AutoCAD and BricsCAD

## V16.00

This readme contains important information regarding the installation and use of Advanced Road Design versions as described above.

Advanced Road Design for Civil 3D is available for:

- Multiple AutoCAD Civil 3D based releases:
  - AutoCAD Civil 3D 2012 to AutoCAD Civil 3D 2016

Advanced Road Design for AutoCAD is available for:

- Multiple AutoCAD based releases:
  - AutoCAD 2012 to AutoCAD 2016
  - All AutoCAD derivatives (eg: AutoCAD Civil 3D, AutoCAD Map 3D) release versions 2012 to 2016
- BricsCAD V15 (32bit and 64bit installs)

## Installation Instructions

**You do not need to uninstall any previous versions of Advanced Road Design.** This installation will install over the top of any previous ARD installation.

## Network Installation Notes

A new version of the Network License Manager is available – this version addresses issues with proxy servers. See more details and install from the Civil Survey Solutions Subscription Centre – <http://www.advancedroaddesign.com/index.php/subscripton-login>

## Installation Location Change

For Autodesk installations, there has been a requirement to change the installation location for the software. Previously the software was being installed to the C:\ProgramData folder. All installations new install the software to C:\Program Files.

## About Licensing

This version uses the Infralution Licensing.

For the ARD V16, release, all subscription customers will have received a new Serial Number (Activation Key) for this version.

The V16 license key will activate any ARD V16 across **all** platforms (eg: ARD V16 on AutoCAD 2016 and ARD V16 on AutoCAD 2012 will both access the same license file).

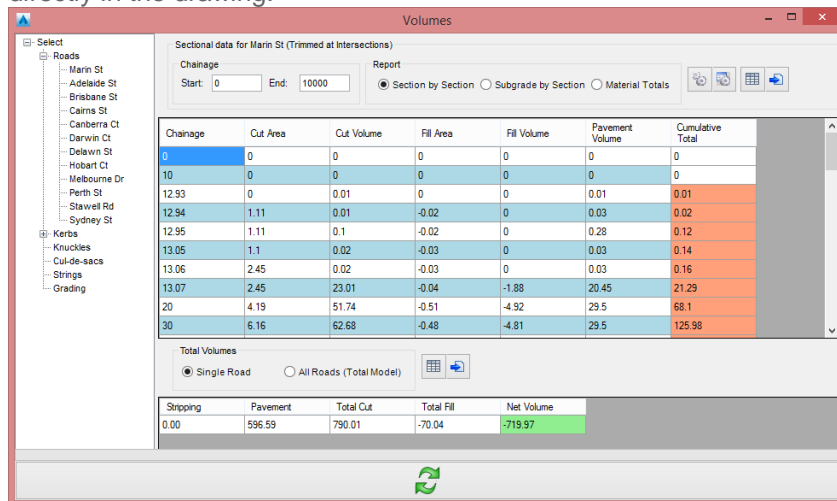
You can obtain your Serial Number directly from the Civil Survey Solutions Subscription Centre:

<http://www.advancedroaddesign.com/index.php/subscripton-login>

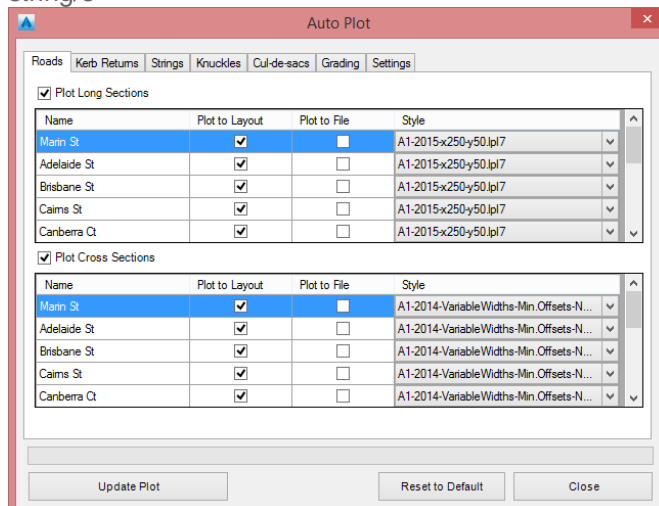
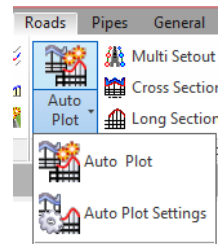
# New Features

## Roads

- **Volumes Report**
  - The Volumes report has been completely re-written. You can now toggle between any strings to review volume reports in an interactive display window, and display summary volumes. You can establish your own column display outputs for volume information, and output to .csv files and as Tables directly in the drawing.



- The new Volumes report will display when the volumes button is selected on the Vertical Grading Editor window
- **Auto Plotting**
  - You can now plot all Strings at once, for both long and cross sections
  - You can set default plotting behaviour to apply to new projects
  - Whenever new strings are introduced, the Auto Plot Settings form will display for you to manage outputs of the new string/s



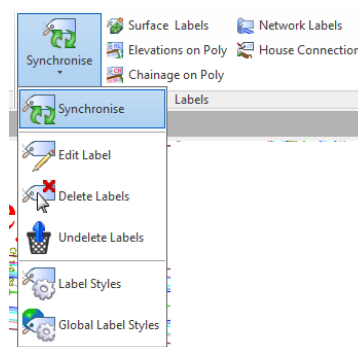
## Pipes

- The software now includes Pipe design tools. The analysis algorithm is based on Rational Method and applies principles as found in Australian Rainfall and Runoff
- You can create pipe networks for stormwater, sewer and underground services. You can set pipe elevations, slopes and assign user defined pits and pipe sizes.
- Pipe network reports can be created and inserted in the drawing
- Pipe network profile views can be created

## General

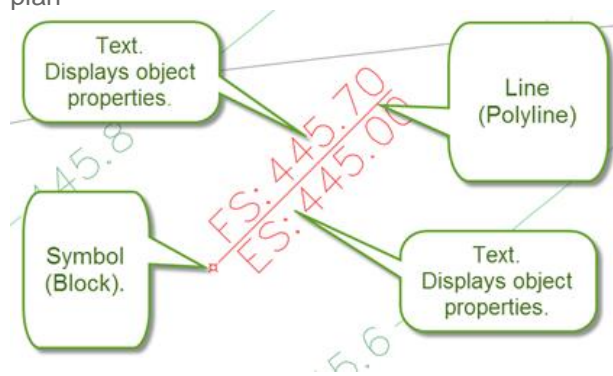
- **Labels**

- New Labeling tools have been introduced. Users can establish Label Styles to manage display of labels for different objects. Labels can consist of any combination of blocks, text objects and polyline objects. Grip edit of objects within the label group is fully supported, and text can be oriented relative to any line in the label style. Depending on the label, grip edit relocation of the label marker is also supported.



You can now create Label Styles and generate Labels for the following objects:

- In Plan:
  - Surface Labels: this includes spot elevations and slope direction labels
  - Elevations on Polyline: displays elevation and other information at the vertices of a polyline
  - Station at Polyline: displays chainage (station) information for an alignment at a polyline vertex – the text position can be moved along the polyline and oriented relative to the polyline.
  - Pipe Network labels: display pit and pipe information on plan
  - House Connection Labels: display house connection information on plan

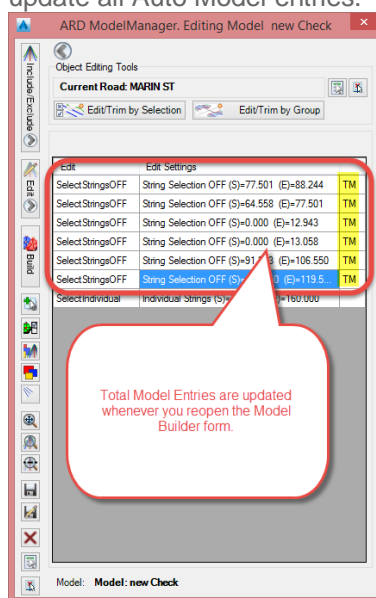


- Labels can be access from the General Ribbon Tab, Roads Ribbon tab and Pipes Ribbon tab.
- AutoCAD and BricsCAD users will have direct menu/ribbon access to the following additional label types
  - Multi String – labels codes in plan along a String
  - VC Labels – labels vertical geometry on plan, along an alignment
  - Distance – labels distances along polyline tangents
- Backup option now includes the 7zip format. 7zip is a free file zip utility.

## Enhanced Features

### Roads

- Model Builder and Auto Model
  - Previously, including Auto Model created a trimmed model of all roads, kerb returns, cul-des-sacs, knuckles and roundabouts, from which you could then append additional string objects and edit the model. If Auto Model changed, with inclusion of new strings or changes to kerb return radii, the entries in the Model Builder form did not update. Now, when you reopen your Model it will update all Auto Model entries.



## Resolved Issues

### Roads

- The Reference Line command incorrectly calculated crossfalls when the Crossfall from Table option was selected
- Model builder didn't correctly trim intersections that included roundabouts, when users opted to start with the automatic road model
- Model builder included LBAT and RBAT codes on strings that did not have templates assigned, with these two codes set with an elevation of zero. These codes are now not included
- When you edited a String in the Multi Setout form, it would reset the Point Number and Order columns back to zero.
- The NSW Super Tables allow for a centreline offset to be included – this was not being applied.

### Pipes

- House connections now display on the Vertical Grading Editor – in the previous version the linework of the house connection did not display
- In the Pipe Properties, the Level Adjustment was not being applied when From Surface was selected for the pit top lid level
- The Plot to File option now includes more control over the output .dwg – previously the software built a .dwg using ACAD.dwt as the originating drawing

## Known Issues

- The Plot to File option may use ACAD.dwt as the originating drawing when creating output files. We are still working on resolving this. Users impacted by this would need to set the Units of the drawing and type ADC at the command line to transfer data from a 'good' drawing/template to the output drawing.
- Labeling
  - If using a text Anchor to Symbol control, the symbol that is being anchored must be above the text in the list and flagged to be an anchor for text
  - Changing label styles in the Surface Label Styles form, then using Move Label, will result in an apparent duplication of labels using the old and new style. Click on Add/Update labels to restore the labels correctly
- Grading
  - The new Volumes tool will not correctly describe grading volumes. Use the Civil 3D volume tools or the Advanced Road Design Surface Volumes command, or the Volumes button on the Grading form
  - Grading Strings are not output to long and cross section outputs in the Auto Plot routine
  - Grading will trim between two adjoining sections only – it will not resolve grading between non-adjacent lines without overlapping
- When creating a kerb return, there is an option to set the Connection Point Code. This can only be applied at the time of creating the kerb return – changing it later will not update the kerb connection. The kerb return would need to be deleted and recreated using the Delete button on the kerb return form.
- Adding a curve to a service pipe that results in intersecting of a sewer or drainage network twice, will not register any intersections/clashes.
- In Advanced Road Design for BricsCAD, ensure MTFLAGS (for multi-threading), is turned OFF. Some users have experienced the software crashing when this system variable is turned on.
- When assigning Sewer Manhole symbols, it is possible to automatically assign the symbol from one Pit Type to the next selected Pit Type, if that second Pit Type did not already have a symbol actively defined. Once the symbol is set by the user, it does not get edited when toggling between Pit Types.
- If curved pipes are given a negative radius they will not update display on road long and cross sections, even if they are subsequently deleted. First, change the radius value on curved pipes to a positive value, then edit/delete as appropriate.

## Tables (BricsCAD Customers Only)

- If you cannot create BricsCAD tables from the Advanced Road Design table output commands, there is an option to revert to standard CAD entity tables. The process is:
  - Open the Active Drawing Settings > Styles Tab
  - Tick on the option 'Draw Tables as Lines and Text'

When you select table output, the pick list of available table styles will change to match with the ARD Table Styles you have set up.

### About Editing the BricsCAD Table output – ARD Table Styles

Users can edit the table output by opening the file **ardtablestyles.txt** in the **ARD Settings** folder – this table sets out the text font, text heights (and row heights) for the title, headings and data rows. Edit in Notepad as required: A view of a sample file is below for your reference and to 'see' the format of the file

```

1 #Arial-3.5 to 2.5mm Font
2 Title,Arial,7.5,3.5
3 Head1,Arial,6.5,2.5
4 Head2,Arial,6.5,2.5
5 Data,Arial,5.5,2.5
6 #Arial-5.0 to 2.5mm Font
7 Title,Arial,9.0,5
8 Head1,Arial,6.5,2.5
9 Head2,Arial,6.5,2.5
10 Data,Arial,5.5,2.5
11 #Arial-5.0 to 2.5mm Font-2 line Title
12 Title,Arial,13.0,5
13 Head1,Arial,6.5,2.5
14 Head2,Arial,6.5,2.5
15 Data,Arial,5.5,2.5
16 #Arial-3.5 to 2.5mm Font-2 line Title
17 Title,Arial,11.5,3.5
18 Head1,Arial,6.5,2.5
19 Head2,Arial,6.5,2.5
20 Data,Arial,5.5,2.5
21 #ISOC-3.5 to 2.5mm Font
22 Title,ISOCP,11.5,3.5
23 Head1,ISOCP,6.5,2.5
24 Head2,ISOCP,6.5,2.5
25 Data,ISOCP,5.5,2.5
26 #ISOC-5.0 to 2.5mm Font-2 line Title
27 Title,ISOCP,13.0,5
28 Head1,ISOCP,6.5,2.5
29 Head2,ISOCP,6.5,2.5
30 Data,ISOCP,5.5,2.5
31 #ISOC-5.0 to 2.5mm Font-2 line Title
32 Title,ISOCP,13.0,5
33 Head1,ISOCP,6.5,2.5
  
```

**Callout boxes:**

- A Table Style highlighted, left**: Points to the first line of a table style definition.
- After the # is the name of the Table Style**: Points to the text 'Arial-3.5 to 2.5mm Font'.
- Do not edit this part. Describes each row type**: Points to the first line of a table style definition.
- Text Font Style. Type in a name matching text style names in the drawing**: Points to the text 'Arial,7.5,3.5'.
- This is the height of the Row (top to bottom line of the row)**: Points to the number '3.5'.
- This is the height of the text inside the row. It will always be set middle centre in each cell**: Points to the number '7.5'.

## Important information - .NET Framework 3.5.1

If you're experiencing issues running Advanced Road Design (i.e. you receive an *'Unknown command'* whilst running the software), ensure that Microsoft .NET Framework 3.5.1 is turned on. You can turn on Microsoft .NET Framework 3.5.1 by following these steps...

1. Type 'Windows Features' in the Windows Start menu
2. Run 'Turn Windows Features on or off'.
3. Ensure Microsoft .NET Framework 3.5.1 is ticked on.

