
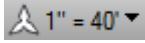





What's New in Civil 3D 2009?

Base ACAD Changes:

- Layer Management – layer dialog now “modeless”
- Menu Browser – can help save screen space
- Expanded Tooltips
- Choice of smaller icons instead of words in status bar
- More settings in status bar
 - Workspaces 
 - Annotation scale  1" = 40'
 - Quick Properties 
- Different icons
 - Explode 
 - Properties 
- LOTS MORE!

CAD/Project Management:

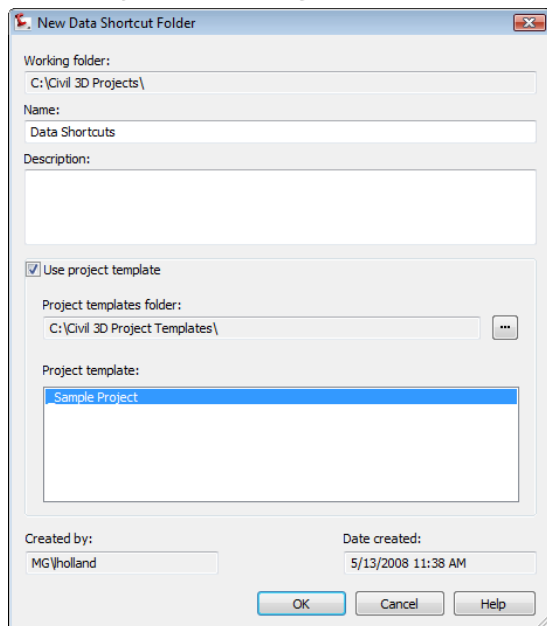


Figure 1: Setting data shortcut folder

- Easier Data Shortcut use

Data shortcuts now have a similar workflow to Vault. Data shortcuts now require a Working folder to be specified (as seen in Figure 1).

For companies sharing data, this can be on a local network location.

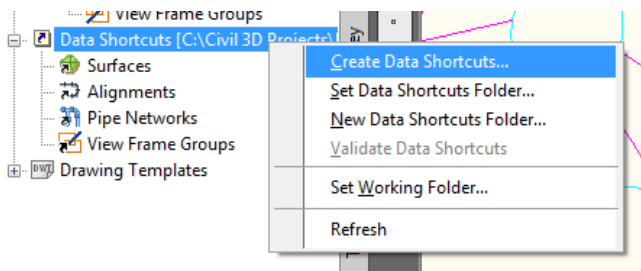


Figure 2: Create data shortcuts

Once the working folder is set, you can create data shortcuts directly from the Prospector (as seen in Figure 2). To see the data shortcut area, set the view to Master View.

There is also a new separate application called the Data Shortcut Editor. If drawing locations change or the link between objects and data is lost, use the data Shortcut editor to repair the links (See Figure 3). This feature can be found by going to **Start > All Programs > Autodesk > AutoCAD Civil 3D 2009 > Data Shortcuts Editor**

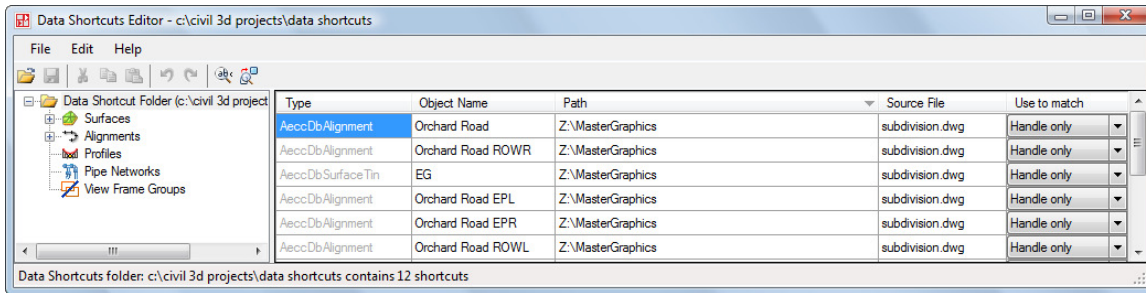


Figure 3: Data Shortcuts Editor

- Improved exporting/exporting to/from Microstation versions 7 & 8.
 - Can control “Layers” and linetypes of an attached DGN.
- Many new 3D blocks to aid in visualization.

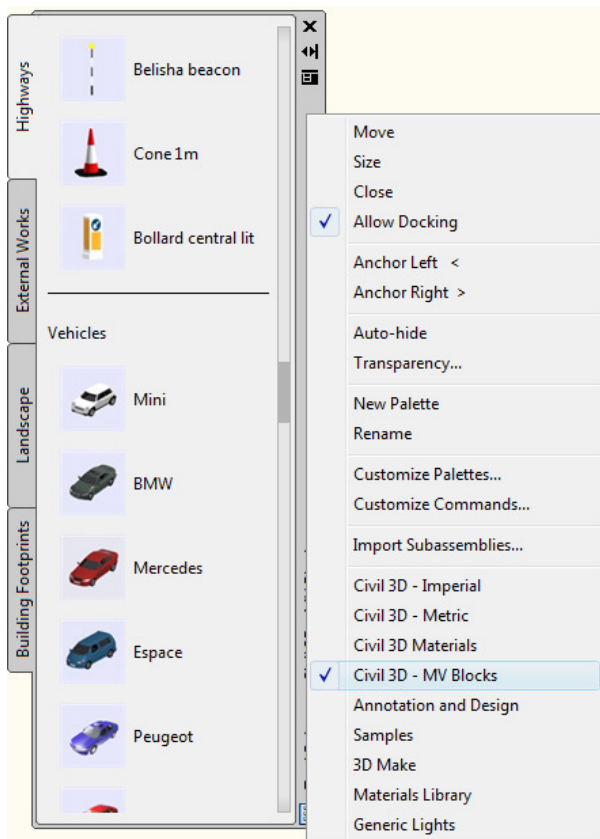


Figure 4: New 3D blocks

To access these new blocks you can right click on the edge of your tool palette and select Civil 3D – MV blocks.

Surveying:

- Ability to translate and/or rotate a survey database. This utility can be accessed from the **Survey** menu > **Translate Survey Database**.

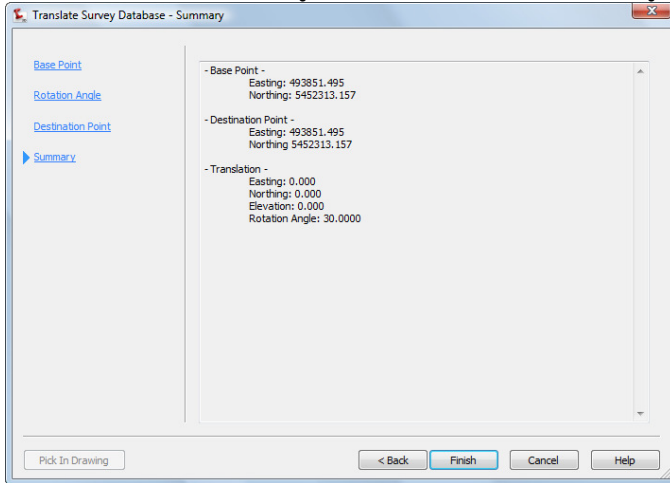


Figure 5: Last step of the Translate Survey Database Wizard

- Map Checks from labels. This utility is also found under the **Survey** menu > **Mapcheck Analysis...**

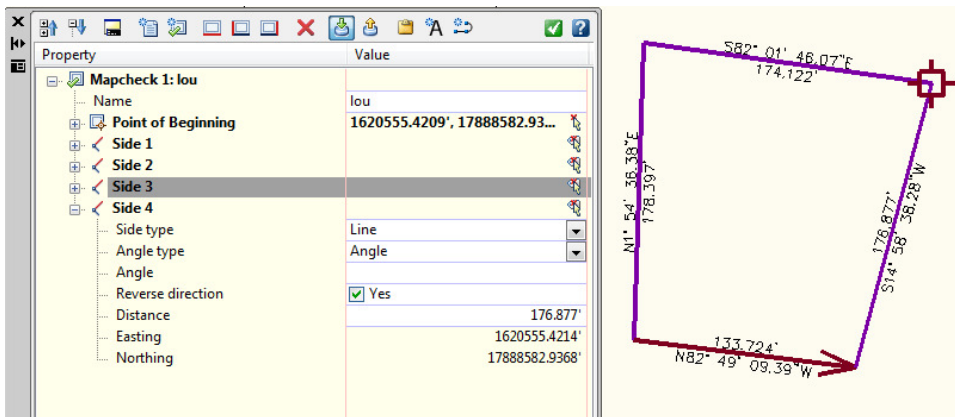


Figure 6: Mapcheck Analysis dialog and graphic

- Leading zeros on labels. This functionality can be seen anywhere bearing labels are used.

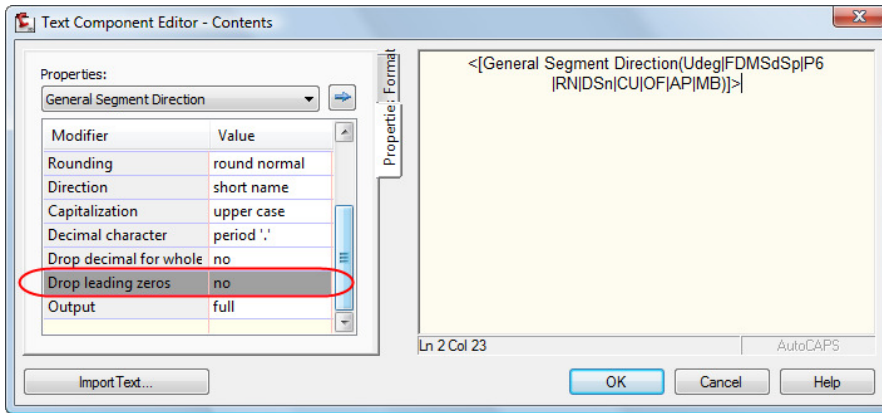


Figure 7: Additional option in the Text Component Editor

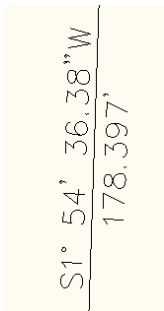


Figure 8: Before Leading Zero

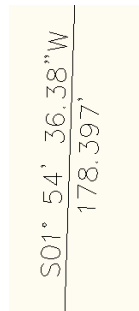


Figure 9: After Leading Zero

Surfaces:

- Handling of large surfaces (good for working with LIDAR data)
 - Simplifying – found in the surface definition under Edits

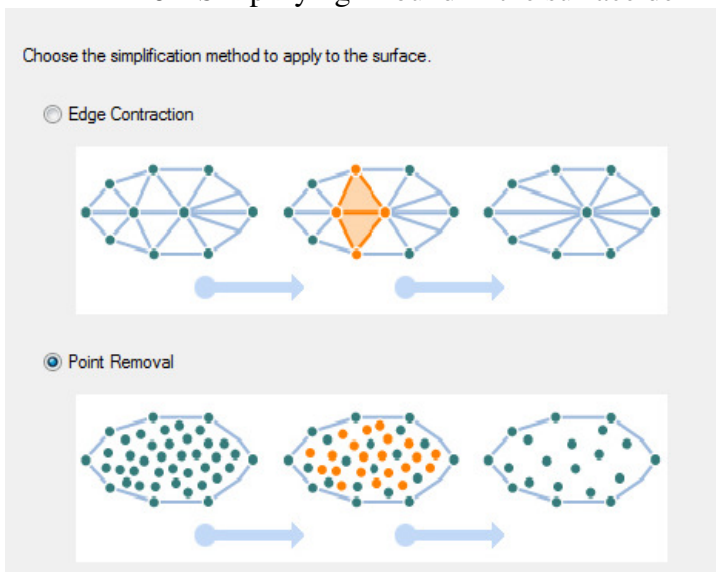


Figure 10: Surface simplification methods

- External mms file automatically created when surface reaches ~250 meg in size (or more than 2.5 million points).

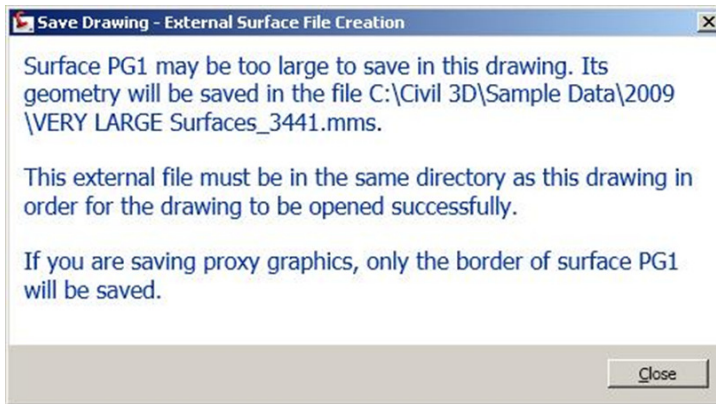


Figure 11: Warning dialog for MMS creation

- Data clip boundary type – under Surface Definition under Boundaries.

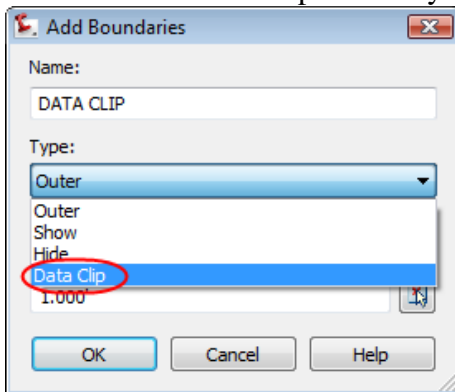


Figure 12: Data clip

- Catchment Area tool - found in the Surfaces menu > Utilities > Catchment Area
- Watersheds in toolpace

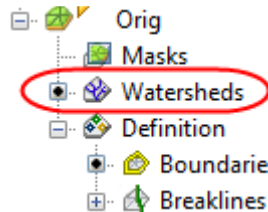


Figure 13: Watersheds

- Compaction factors can be added to volume surface calculations. This can be found in the **Surfaces** menu > **Utilities** > **Volumes**

Index	Surface Pair		Volume							
	Base Surface	Comparison Surface	Cut	Fill	Cut Factor	Fill Factor	Cut (adjusted)	Fill (adjusted)	Net	Net Graph
1	Orig	Proposed Grading	87394.63 Cu. Yd.	29605.37 Cu. Yd.	1.200	0.850	104873.56 Cu...	25164.56 C...	57...	

Figure 14: Cut/Fill factors

Grading:

- Improved stability
- Grading to Grading cleanup. Grading objects on the same site can now overlap and civil 3D will resolve the slope where the two gradings meet (see Figure 15). Note that the grading object on the left in Figure 15 is not a circle. Grading cleanup works best when there are no arcs in the feature.

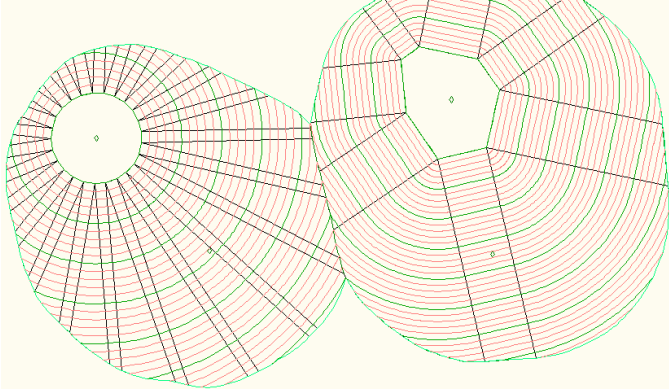
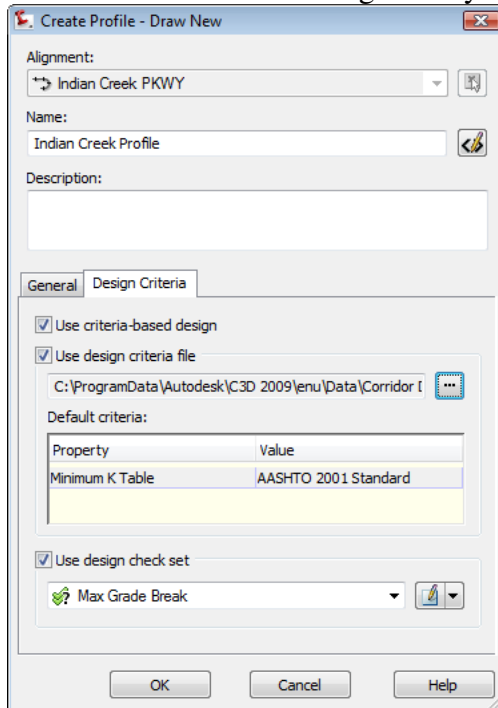


Figure 15: Overlapping grading objects

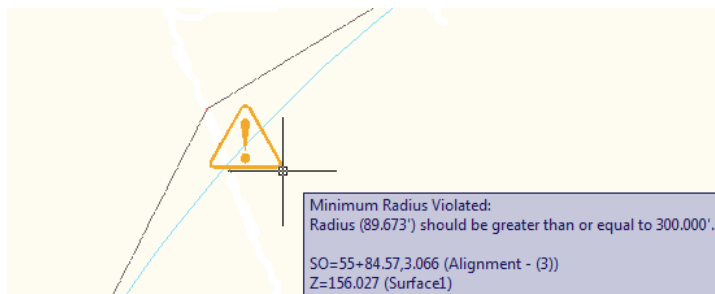
Alignments, Profiles & Corridors:

- Vertical and horizontal geometry checks.



As you set up an alignment or profile, you have the option to use design criteria.

Figure 16: Vertical design criteria



If your geometry does not meet the design criteria, a warning symbol will appear with information as shown in Figure 17.

Figure 17: Design criteria warning

- Stacked profile views (not widely used in the Midwest)

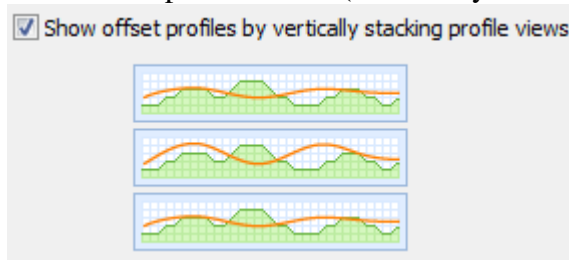


Figure 18: Stacked profile view option

- Ability to target polylines, feature lines or pipes in a corridor.
- Easier to add assemblies to a tool palette.

XREFS:

- “If you can XREF it, you can label it.” Many objects can be labeled through an XREF. Surfaces, lines, corridors etc.

Feature Line Tools:

- Corridors can target feature lines.
 - Can give Feature lines names.
- Feature lines extracted from corridors are now dynamic.

Mass Haul Diagrams:

- Automatically generated

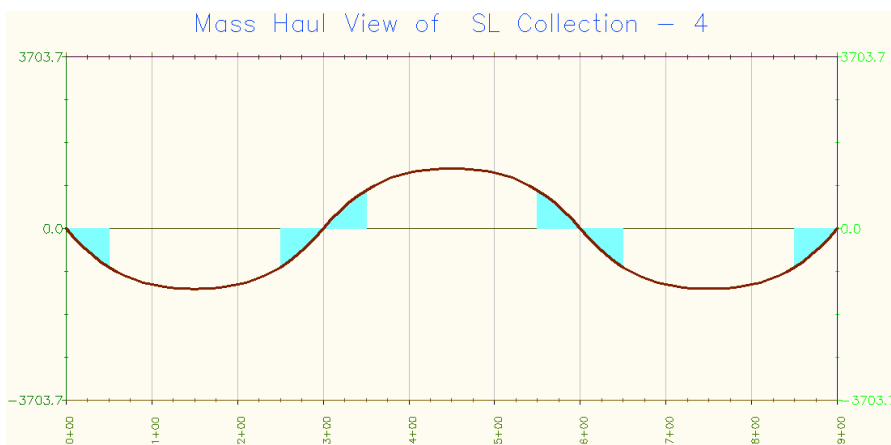


Figure 19: Mass Haul Diagram

Water Analysis Programs Included:

- Hydraflow Storm sewers
- Hydraflow Express (calculator)
- Hydraflow Hydrographs

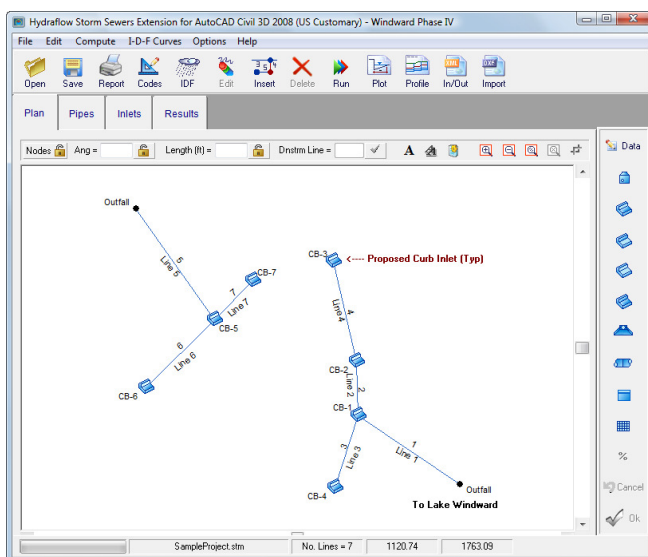


Figure 20: Hydraflow Storm Sewer Main Screen

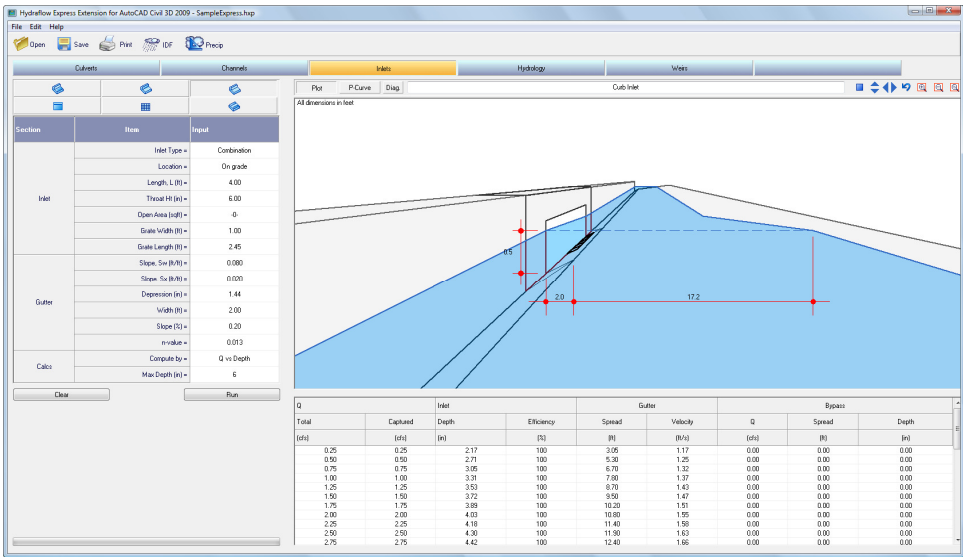


Figure 21: Hydraflow Express Inlet Calculation Screen

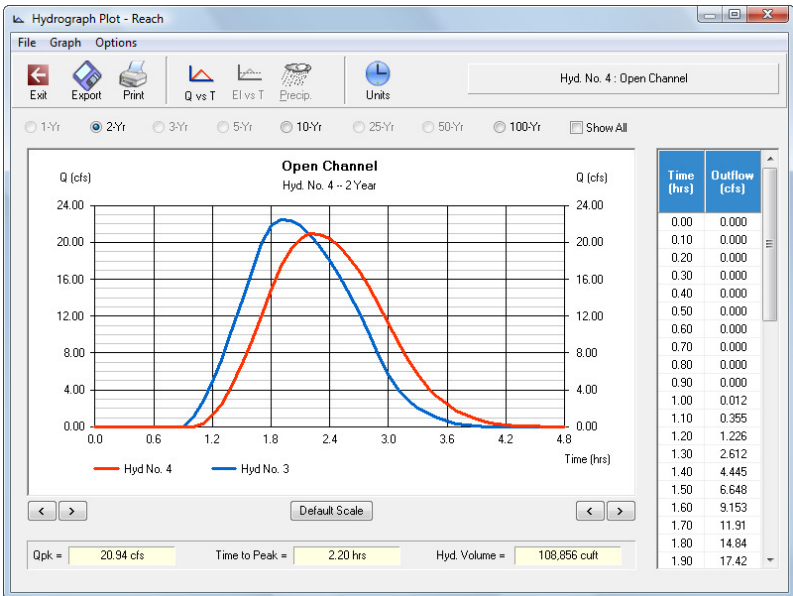


Figure 22: Hydraflow Hydrographs Extension