

CADD Workspaces & Design Tools Selection & Use

Frequently Asked Questions

Question 1

Does MDT have a process for converting a survey map that was created in the Legacy workspace to the Enhanced workspace?

Yes, MDT has developed a DI converter macro. The macro is available on the ftp site. A tutorial is being finalized for publication. In the meantime, if you have questions on running the macro, please contact MDT CADD support.

Question 2

Of the new file types, which file should culverts, existing and proposed, be drawn in?

Existing culverts should be in a UMA file. It may be beneficial to have a separate UMA for proposed culverts. By having a separate file, it may be easier to differentiate between existing culverts that are being replaced with a new pipe in the same location. At this time, there is not a preferred method for proposed culverts. For now, please keep in mind there will still need to be a 2D plan graphic showing existing and proposed culverts. The culverts will then need to be manually drawn on the cross-sections.

Currently, we do not have a preferred method for modeling 3D culverts.

Question 3

Will an error occur if a consulting firm creates their own feature definition for visualization purposes?

Special care needs to be taken when considering creating a Feature Definition that does not exist in the MDT Library.

- If altering the visualization of an existing MDT Feature Definition, there should be no error.*
- Adding Feature Definitions for null points and/or points that relate to structures (points that will not produce a 3D line string to be included in an i-model) such as guardrail, should not be an issue.*
- If an additional Feature Definition is needed, please contact MDT. The Feature Definition will need to be created and added to the MDT Library.*

Ultimately, Feature Definitions are the basis for how the model is conveyed to the end user (MDT and Construction/Contractor). The end user may be confused about the model if a Feature Definition is added and used in the Top or Bottom Mesh creation. The end user will not have knowledge of any Feature Definition outside of the MDT Library.

We recommend any consulting firm considering creating a new Feature Definition contact John (JJ) Walsh at 406.494.9615 or jowalsh@mt.gov. He will determine if the Feature needs to be added to the MDT Library and will provide guidance on a case by case basis.

Question 4

What is AccuDraw and when should it be used?

Civil AccuDraw is the civil-specific version of MicroStation AccuDraw. Both are intuitive, precision drafting tools. Civil AccuDraw goes beyond MicroStation AccuDraw by supporting civil-specific drafting functions, including stations and offsets, bearings and distances, elevations and others.

Civil AccuDraw Toolbars

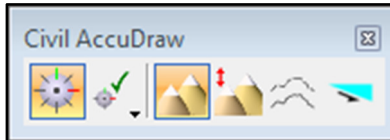
Civil AccuDraw toolbars are different depending on the active view.

*When the **Default Model view (plan view)** is active, the toolbar looks like the toolbar below.*



Civil AccuDraw toolbar - Default Model view

*The Civil AccuDraw toolbar changes based on the tools available for use in the **Profile view**, as shown below.*



Civil AccuDraw toolbar - Profile view

Heads-Up Display – Plan View

While MicroStation AccuDraw allows input in either polar or rectangular coordinates, Civil AccuDraw allows many more coordinate options such as:

- *Input a coordinate by distance and direction from a single origin point*
- *Input a coordinate by distance from one origin point and direction from a second origin point*
- *Input a coordinate by distance from one origin point and distance from a second origin point*
- *Input an absolute coordinate by direct (X-Y-Z) entry*
- *Input a coordinate by relative (dX-dY-Z) location from a single origin point*
- *Input a coordinate by station and offset*
- *Input a coordinate by relative station and offset*

Heads-Up Display – Profile View

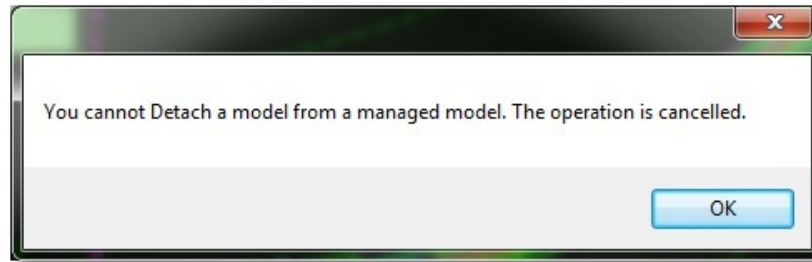
There are 4 standard Civil AccuDraw toggles that can be used to design vertical geometry. They are:

- **Station and Elevation** will enable the heads-up display to show the Station and Z field in addition to the Length and Slope option.
- **Station and Delta Elevation** will enable the heads-up display to show the Station and dZ field which is showing the elevation difference from the previous point in addition to the Length and Slope option.
- **Station and Profile Offset** will enable the heads -up display to show the Station and also the Profile Offset of whichever profile is set to be active in addition to the Length and Slope option.
- **Station and Slope** will enable the heads-up display to show the Station and the slope which is showing the slope from the last point or origin in addition to the Length and Slope option.

Civil AccuDraw Settings allow you to add, edit, or delete coordinate entry functions. To manage these settings, open the Civil AccuDraw Settings and go to the Favorites tab.

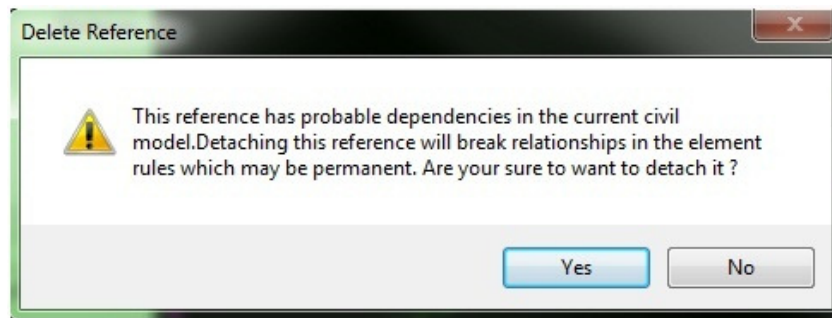
Question 5

I am unable to detach a reference file in MicroStation. I receive the message: "You cannot Detach a model from a managed model. The operation is cancelled."



If you attempt to detach a reference in either the Legacy/MicroStation or Enhanced/MicroStation workspace (without GEOPAK loaded), you will be unable to do so and will receive the above message. This is due to the fact that one of the references contains a civil model. When only the basic MicroStation program is started, the program acknowledges that there is a managed (civil) model referenced into the file, but without GEOPAK or OpenRoads activated it cannot determine which of the reference files it is. If a user were to detach a reference with dependencies, they could permanently break relationships between civil elements. A safeguard was placed in the basic MicroStation program (no GEOPAK or OpenRoads) that does not allow any references to be detached once a managed (civil) model has been detected.

To detach references, open the DGN file in either the Legacy/GEOPAK or Enhanced/OpenRoads workspace. Reference files without managed (civil) models will detach normally. When the user tries to detach the managed model reference file, they will receive the message below. Selecting "Yes" will detach the reference but will break any civil relationships between the active file elements. Selecting "No" will cancel the operation.



Note: *Managed model reference files should only be detached if the user is positive that detaching the file will have no repercussions to the civil model.*

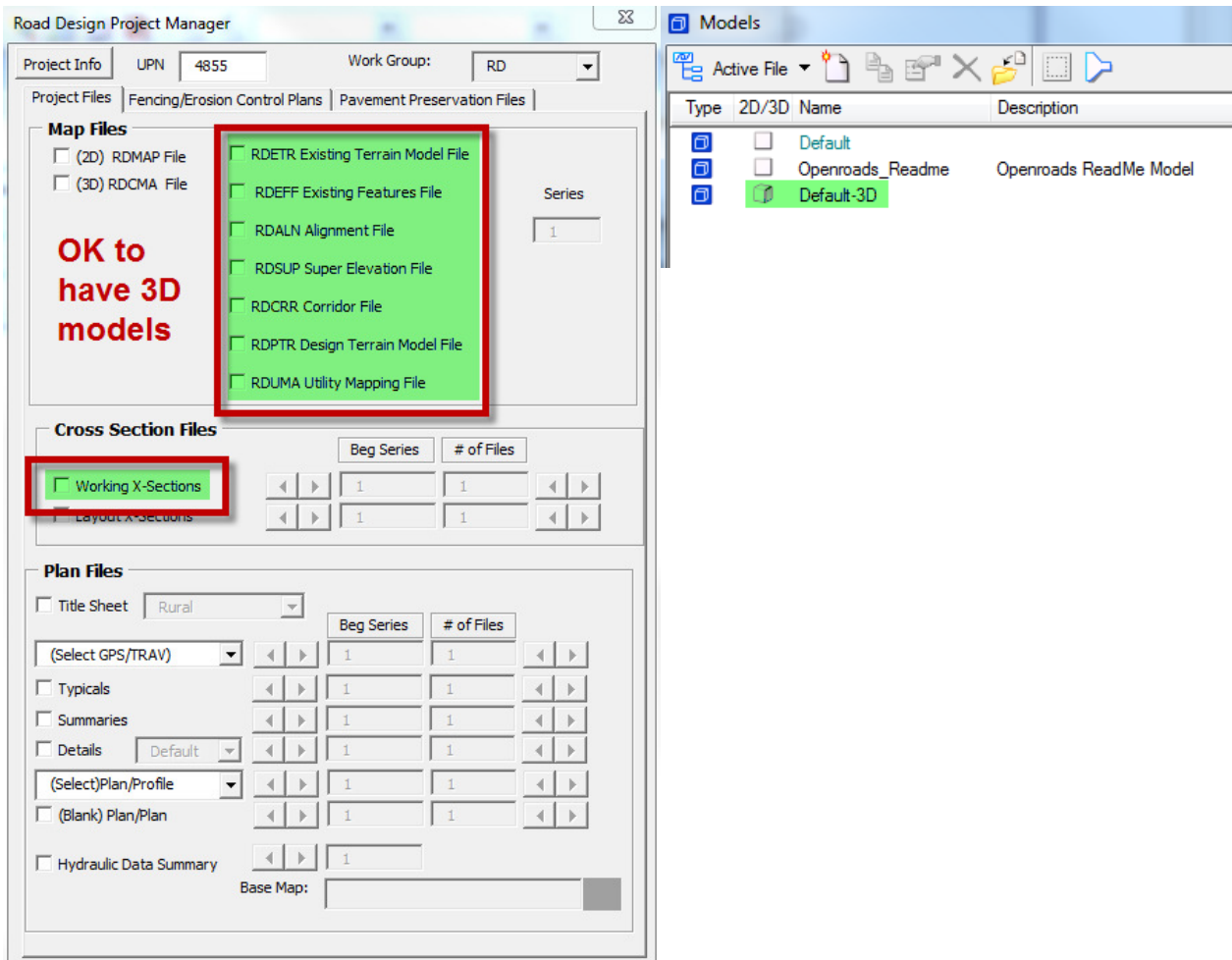
Additional Info:

The Default-3D model of a file cannot be detached from itself.

Issues with current workflows:

This can be approached in a couple of ways:

First is to educate the users that they can only have the OpenRoads managed model Default_3D in the modeling/design files. Sheet files cannot have managed models.



Second is to change the workflow process that the other workgroups use to create their own files. There are 2 workflows identified below. Workflow 1 has issues if there are managed models in any of the sheet files not shown above in green (TTL, DET, PLP, etc.). Workflow 2 will not have managed model issues.

As the OpenRoads implementation moves forward, users need to be vigilant about keeping their design files clean. There should be no extraneous linework outside of the plan sheet borders or off in space in the map files. This can inadvertently cause 3D models to be created, and once created they cannot be undone or detached.

Workflow 1:

Use the existing Road Design file as the seed file by opening it up and doing a **save-as** function. This method will create a copy of the existing file with a new name. If there is a managed model in the existing file, it will also be in the new copy.

Workflow 2:

Use a standard seed file to create a new file. This method will create a new file with no managed models in the file. Attach as a reference the file the user is creating and select the option to copy attachments.

Overview of workflows

The first workflow is how Utilities creates their files, I am not sure what other workgroups follow that procedure as well. It explains why the issue is hit and miss in the files.

The second workflow is what most of the right-of-way users do today, which is why it's not an issue. Even if the managed model existed in one of the road design files, it would not be in their file.

Question 6

I was wondering what the desired text height and width are for the new true type fonts in the enhanced workspace. Do they still match the those outlined in MDT's CADD Standards Text Guide.pdf?

Yes, please do continue to use MDT CADD Standards as a text height/width guide for the new True Type Font in the Enhanced workspace, for now. We have not yet worked on our text style set-up, but it is on the to-do list. We will release a CADD memo explaining the changes when we complete them.