

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

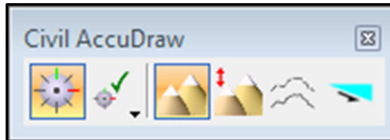
Civil AccuDraw toolbars are different depending on the active view.

*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

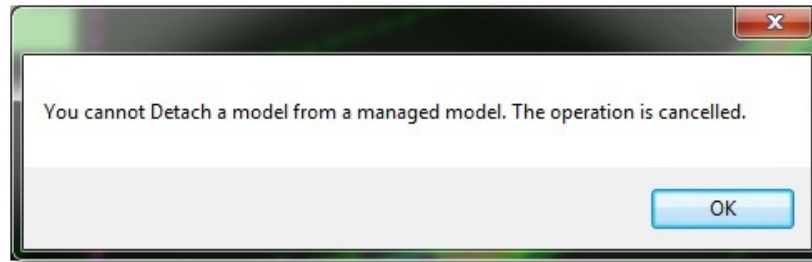
There are 4 standard Civil AccuDraw toggles that can be used to design vertical geometry. They are:

- **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.

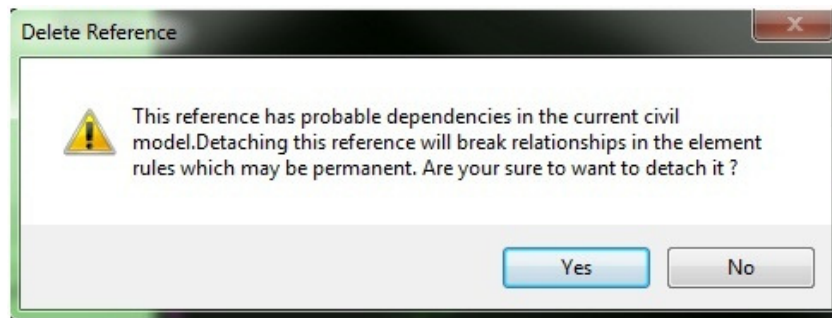
Question 5

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.*

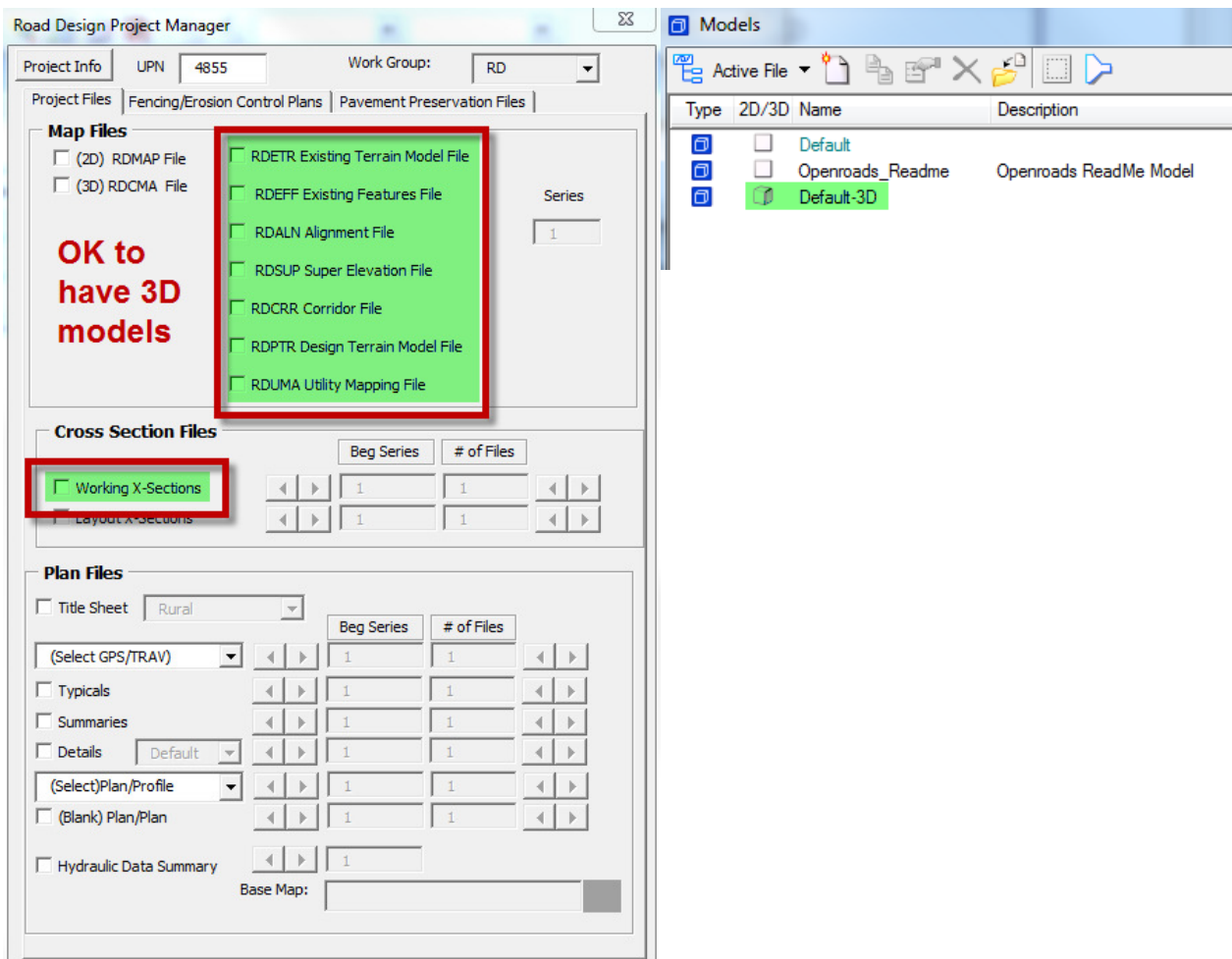
Additional Info:

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 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.

Question 7

I am a consultant on an MDT project, and I am having problems locating the installation file for GuideSIGN. Is there any specific place/folder to find it on the FTP server?

Please contact Roger Schroeder 406-444-0085 for guidance on GuideSIGN installation and setup.

Question 8

How do I convert an existing MicroStation file to use in the enhanced workspace?

CONVERTING LEGACY DESIGN FILES TO ENHANCED

- 1. Access the legacy file to be converted (MDT - Check file out of DMS)*
- 2. Append file name with '_old'*
- 3. Open MicroStation in the Enhanced workspace (MDT - use Preconstruction Startup)*
- 4. Create new file (MDT - Road Tools > File Utilities > Create DGNs)*
- 5. Open the new file*
- 6. Reference in the old file using the Coincident World orientation*
- 7. Turn on ALL of the levels in the referenced file*
- 8. Merge the reference file into the new file - References > Tools > Merge into Master*
- 9. Discard the old file*
- 10. Retain the new file (MDT - Check the new file back in to DMS)*

CONVERTING LEGACY SHEET FILES TO ENHANCED

- 1. Access the legacy file to be converted (MDT - Check file out of DMS)*
- 2. Append file name with '_old'*
- 3. Open MicroStation in the Enhanced workspace (MDT - use Preconstruction Startup)*
- 4. Create new file (MDT - Road Tools > File Utilities > Create DGNs)*
- 5. Open the new file*
- 6. Reference in the old file using the Coincident World orientation*
- 7. Turn on ALL of the levels in the referenced file*
- 8. Change the Nested Attachments drop-down to Copy References*
- 9. Merge only the initial referenced file into the new file - References > Tools > Merge into Master*
- 10. Discard the old file*
- 11. Retain the new file (MDT - Check the new file back in to DMS)*

Question 9

There are two Projects (also known as Workgroups) for Road and Traffic Safety. Should I use Road/Traffic Safety or Road 2018/Traffic Safety 2018?

All design projects started after June 2018 should be designed using Road 2018/Traffic Safety 2018. The 2018 Projects were developed to meet MDT's needs for 3D corridor modeling that weren't being met while not interrupting projects already in progress. The following lists areas where differences between the two versions can be identified.

Level Names and Descriptions

E – Existing
 P – Proposed
 ES- Existing Surface
 PS – Proposed Surface
 DL – Design Line
 TL – Template Linear
 TC – Template Component
 TM – Template Mesh
 S – MDT Sheets

Feature Definition Libraries

Survey
 ROW
 Environmental
 Geometry
 Templates
 Terrains
 Project Settings

Element Templates

Survey
 ROW
 Environmental
 Road
 Geometry
 Templates
 Terrains
 Cross Sections
 Project Settings

Level Filters

Corridor Graphics
 Corridor Meshes
 Cross Sections
 Geometry

- Alignments
- Profiles

 Modeling

- Components
- Linear

 Terrains

Feature Naming

EFS – Existing Spot Feature
 EFL – Existing Linear Feature
 RW – Right Of Way
 WL – Wetlands
 HA – Horizontal Alignments
 DL – User Defined Feature Design Line
 TC – Modeling Template Component
 TL – Modeling Template Linear Feature
 TD – Modeling Terrain Display

ITL Files

- \\server\caddstdor\openroads\data\Template_Library\mdt_civil_templates_imperial_ss4.itl
- \\server\caddstdor\openroads\data\Template_Library\mdt_civil_templates_imperial_2018.itl

Question 10

I use aerial photographs as a background for all of the projects I work on. These images are downloaded from the Montana State Library, Geographic Information Clearinghouse web site and originate from the U.S. Farm Services Agency National Agricultural Imagery Program (NAIP). Up until 2013 the photography was made available in MrSid MG3 format. MicroStation loads these images with no problems. Starting in 2015 these images are being made available only in MrSid MG4 format. MicroStation will not load these images. Is there a way to get MicroStation to load the MrSid MG4 format images? Also is there a way to setup an image server to display these images from instead of downloading them from the web each time I need one?

MicroStation V8i SS4 doesn't support the newer MrSid MG4 images. An image server has been set up. There is a vba available in the Enhanced workspace that will attach a selection of image base maps including the aerial imagery for 2013, 2015 and 2017 from CADDSTDOR. These base maps include the imagery that is available for the entire state.

Select MDT APPS > MDT Maps. Select the appropriate raster model and choose attach.

This imagery isn't recommended for plans production plotting because of the delayed image processing time resulting in the image failing to plot. It's advised to revert to the 2013 and prior MrSid MG3 downloaded images for plans production plotting. For other tasks using fence plotting with the MrSid MG4 images, ensure the image is fully loaded before printing.