MONTANA
Department of Transportation

Project Development & Delivery Digital Design Support

CIVIL 3D USER MAINTENANCE SUPPORT GUIDE

ISSUE:

Corrupted features can sometimes lead to performance issues and unexpected behavior.

SOLUTION:

Regularly maintaining your drawings and program performance tasks helps minimize the risk of file corruption, reduces the drawing size, and improves performance. It's advisable to perform these tasks consistently and frequently.

A list of custom MDT tools and standard AutoCAD tools are available to help with maintaining drawings. Corrupted drawings can often be recovered with the provided AutoCAD commands.

Application/Tool(s):

AutoCAD / Civil 3D

Version(s):

13.6.2020 Civil 3D 2024.4.3 Update

Environment:

MDT Civil 3D State Kit r2024 v2.2.1

Released/Revised:

9/24/2025

SUPPORT

Digital Design Support

https://montana.servicenowservices.com/citizen?id=sc_cat_item&sys_id=13ac75551bc1091049e0ed3ce54bcb3d

QUICK REFERENCE

DRAWING MAINTENANCE

Commands within Autodesk Civil 3D:

1. MDTDWGCLEAN - Cleans drawing and fixes errors
2. AUDIT - Evaluates the integrity of a drawing and corrects some errors
3. MDTPURGEALL - Removes all unused items
4. PURGE
5. DELETE DUPLICATE OBJECTS - Removes overlapping, duplicate geometry
6. QSELECT - Locate Redundant Objects
7. ZOOM EXTENTS - Remove Unneeded Objects
8. RECOVER – Repair Drawings
9. WBLOCK – Delete Corrupt Data

WORKING WITH XREFS

Improve performance in drawings with xrefs:

1. Unload xrefs that aren't currently being used.
2. Detach unloaded xrefs if not needed.
3. Use Overlay instead of Attach
4. Use Relative Paths
5. Check drawings for orphaned (missing) xrefs.

PROGRAM PERFORMANCE & TROUBLESHOOTING

1. Reboot Computer Daily
2. Exit Autodesk Desktop Connector
3. Clear Temp Files
4. Reset Settings to Default
5. Remove Current (MDT) Profile
6. Report Autodesk Errors

DRAWING MAINTENANCE

Keeping drawings free of unneeded data is a necessary task to prevent drawings from becoming too large and/or possibly corrupt. **Drawing maintenance should be performed on a regular basis.**

MDT DRAWING CLEAN

MDT Drawing Clean is a convenient way to run a string of commands that will clean up a drawing by fixing errors and removing unused and/or unseen objects. It automates the process instead of running commands one by one. A clean drawing will open and save quicker, use less memory, and perform faster.

Run frequently!

Type **MDTDWGCLEAN** at the command line or press the DWG Clean from the MDT Tools ribbon.

1. A dialog will appear. This drawing will be saved during the DWG Clean process; Do you want to continue? Yes or No?
    a. Click “Yes” to continue. Message appears: “Audited drawing to fix errors. Removed: zero-length geometry, empty text objects, orphaned data, and unreferenced registered applications.”
        i. Click “OK” to exit.
        ii. (Optional) Press **<F2>** on keyboard to open the AutoCAD Text Window to see results.
    b. Click “No” to cancel.
        i. Process will be cancelled. Command will exit.

* Note: These tools are included in the **MDTDWGCLEAN** command but may be used separately.

- ***AUDIT**

  The Audit command evaluates the integrity of a drawing and corrects some errors.

   Applications Menu > Drawing Utilities > **AUDIT**

  (or type **AUDIT** on the command line)

  When the routine is done, it will give you a status report of how many objects it audited and how many errors it found and corrected. Running Purge prior to an Audit may reduce the number of auditing items.

- **MDT PURGE ALL**

The MDT Purge All command removes unused items from the drawing, including block definitions, detail view styles, dimension styles, groups, layers, linetypes, materials, multileader styles, plot styles, shapes, text styles, multiline styles, section view styles, table styles, and visual styles. This can help improve the drawing's performance and reduce its file size.

CAUTION: All unused items will be removed automatically. To choose specific items to remove, exit this command and use the AutoCAD PURGE command instead.

1. Type **MDTPURGEALL** at the command line or press the Purge All Unused from the "MDT Tools" ribbon.
2. Do you want to continue? Yes or No?
   a. Click "Yes" to continue.
      i. All unused items will be removed.
      ii. Click "OK" to exit.
      iii. (Optional) Press on keyboard to open the AutoCAD Text Window to see results.
   b. Click "No" to cancel.
   c. Process will be cancelled. Command will exit.

ADDITIONAL CLEANUP TOOLS

Civil 3D offers built-in tools that can be used individually for specific tasks to handle specific cleanup tasks.

- **PURGE**

  The **PURGE** command removes selected unused layers, blocks, styles, etc., and nested items from the drawing.

   Applications Menu > Drawing Utilities > **PURGE**

  (or type **PURGE** on the command line)

- **DELETE DUPLICATE OBJECTS**

  Delete Duplicate Objects removes duplicate geometry as well as overlapping lines, arcs, and polylines. It also combines partially overlapping or contiguous ones.

  Ribbon Tab: Home > Modify > Modify > **DELETE DUPLICATE OBJECTS** 

- **LOCATE REDUNDANT OBJECTS**

  QSELECT is a great tool for finding redundant objects in a drawing, especially if you have a rough idea of what should be in your drawing. QSELECT creates a selection set based on filtering criteria.

  For example, if you know there should only be one alignment in the drawing, you can use QSELECT to select all alignments. If more than one is shown, you'll know there are extras alignments to clean up.

  Ribbon Tab: Survey > General Tools > **QUICK SELECT**

  (or type **QSELECT** on the command line)

- **REMOVE UNNEEDED OBJECTS**

  Using the **ZOOM EXTENTS** command is a fast way to see if there's anything outside the main drawing area. Delete random or unwanted objects to clean up drawings and reduce the file size.

  Ribbon Tab: Home > View > Navigate 2D > **EXTENTS**

  (or type **ZE** on the command line)

- **REPAIR DRAWINGS**

  Use the **RECOVER** command when a drawing file is corrupt to repair damaged data in a drawing.

  1. Open AutoCAD (but don't open the damaged file yet).
  2. Click  Application menu > Drawing Utilities > **RECOVER**
  3. Browse to the damaged drawing file.

- **DELETE CORRUPT DATA**

  If your drawing is corrupted and other fixes don't work, try using the **WBLOCK** command to save everything into a new file. This can eliminate corrupt data and reduce the file size.

  Things to keep in mind when using **WBLOCK** with Civil 3D:

  1. Don't set an insertion point – doing so will shift the coordinates.
  2. Use Design Center (Ctrl+2) to drag and drop layouts into the new drawing.
  3. For large or complex Civil 3D objects, WBlock might not be enough.
     a. Export to LandXML, then import into a new drawing.
     b. Export to AutoCAD, which explodes Civil 3D objects. Use the resulting lines and shapes to rebuild objects.

WORKING WITH XREFS

Drawings with xrefs can take a long time to open and perform slowly. The following best practices are recommended to ensure loading, navigation, and editing remain efficient:

1. Unload xrefs that aren't currently being used. When needed, reload the xrefs.
2. Detach unloaded xrefs if not needed.
3. Use **Overlay** instead of **Attach** whenever possible. Attached xrefs can get nested, which slows down performance.
4. Use **Relative Paths** when sharing drawings. This lets others store project folders wherever they want, if the folder structure remains the same the xrefs will still work.
5. Check drawings for orphaned (missing) xrefs. AutoCAD will search for orphaned xrefs until it times out and causes drawings to open slower.

PROGRAM PERFORMANCE & TROUBLESHOOTING

REBOOT COMPUTER DAILY

Reboot your computer regularly, either at the beginning of the day or at the end of the day. Civil 3D caches information locally as you're working in it throughout the day. Restarting your computer will clear the cache and ensures that the programs operate as expected. If you do not restart your computer, you will find that Civil 3D can become slow and laggy. Civil 3D may freeze entirely or may consistently crash. Issues like this can be indicators to restart your computer.

EXIT AUTODESK DESKTOP CONNECTOR

Upon user signing off or shutting down the computer, Autodesk Desktop Connector (DC) prevents the completion of sign out. The DC takes some time to close - this is "as designed" behavior. Choosing "Sign out anyway" is not advisable, as it could disrupt any ongoing tasks in the Autodesk Desktop Connector.

To prevent this from happening, close the DC before logging off or shutting down the computer. It's recommended to wait for the DC app to close. The DC is in the System Tray or on the Task Bar at the bottom right corner of the screen. Right click on the DC from the system tray and choose Exit before logging off. **Make it a habit to close the DC before "Shut down or sign off".**

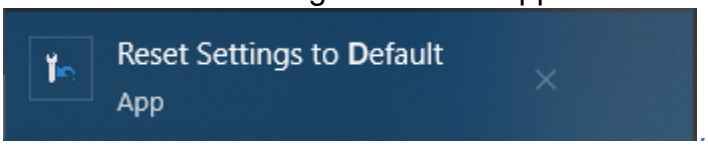
CLEAR TEMP FILES

The Temp folder is for Autodesk temporary files. Close Civil 3D. Run the Clear Temp Files batch file to delete temp files from the Temp folder. The batch file is in C:\mdoh\StateKit\Civil 3D\20XX\Tools.

RESET SETTINGS TO DEFAULT

If the issue seems program-related rather than drawing-related, Reset Settings to Default (from start menu) will restore Civil 3D settings. Run this following significant performance, crashing, and other issues. The MDT State Kit must be reinstalled after the reset.

1. Close Civil 3D.
2. Click on the Windows Start menu  (or Search) type “Reset Settings to Default”
3. Navigate to the Autodesk Civil 3D 20xx folder
4. Click the Reset Settings to Default App



REMOVE CURRENT PROFILE

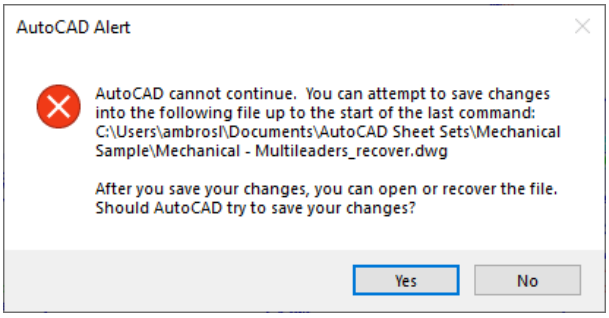
For various reasons, an AutoCAD profile may need to be reset: to fix an error or user interface issue, to restore settings that were changed, or to load a more current version.

The Remove Current Profile command will remove the Civil 3D user profile that is set current and then close Civil 3D. The removed profile is then able to be cleanly restored from file. This command can be used to restore the MDT Civil 3D State Kit profile, “MDT_20XX”. (20XX = Civil 3D version in use; 2024, 2025, 2026, etc.)

1. SAVE and close any open drawings.
2. Type **MDTRemoveCurrentProfile** at the command line or select the **Remove Current Profile** on the MDT Tools ribbon.
3. Message appears “You are about to remove the current profile and exit Civil 3D. Do you want to proceed? Yes or No?”
    a. Click “Yes” to remove the current profile.
    b. Current profile will be deleted, and Civil 3D will close.
    c. Click “No” to abort.
        i. Command will exit.
4. Open Civil 3D using the Civil 3D 20XX Montana Desktop Shortcut.
5. If this shortcut is used, Civil 3D will open and automatically restore the MDT_20XX profile.

REPORT AUTODESK ERRORS

When Autodesk encounters a problem and shuts down unexpectedly, report the errors. When this happens, you should be prompted to save each open drawing that has unsaved changes. These drawings will have "_recover" appended to their names to ensure the previously saved drawing file is not overwritten.



After saving any open drawings with unsaved changes, the AutoCAD Error Report dialog box should be displayed. From this dialog box, you can send an error report to Autodesk. The error report includes information about the current state of the program and your workstation and can include optional information, such as what you were doing at the time of the error. Error reports are used to improve the stability of the product.

MDT meets quarterly with Autodesk to review error reports submitted by MDT users. The error reports can help troubleshoot issues related to MDT users.

SUPPORT CONTACT:

Please submit an MDT Engineering Systems CADD Support Request for assistance. MDT internal users may Open a Case via the MDT Service Desk.