MONTANA
Department of Transportation

MANAGING SUBASSEMBLY REFERENCE FILES (PKT) IN A DWG AND FOR PROJECTS

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Overview

Guidance is provided on managing subassemblies and assemblies. Subassemblies and assemblies may be updated with MDT Civil 3D State Kit updates. Users may also need to develop and save customized subassemblies and assemblies for project specific needs. Updating or maintaining use of applied subassemblies and assemblies, whether using MDT Civil 3D State Kit delivered or user-created, in project files is explained for successful outcomes.

Process Guide

Application/Tool(s):	AutoCAD / Civil 3D
Version(s):	13.8.1704.0 Civil 3D 2026.2.1 Update
Environment:	MDT State Kit 2026.1.0
Released/Revised:	7/29/2026



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Statement of Need

Subassemblies and assemblies are a cornerstone to design activities. Proper management with subassembly version updates and storage is essential to avoid loss of data.

References

Civil 3D 2022 to 2024 Subassembly Updates

MDT Civil 3D State Kit User Tool Palettes – Release 2026

Autodesk Civil 3D 2024 - New in Subassembly Workflows

Civil 3D 2024 to 2026 Custom Subassemblies and Assemblies

Revisions

9/4/2024: Original release

7/29/2026: Updates to Updated Subassemblies in DWG File section in support of Civil 3D 2026 and MDT State Kit 2026.1.0 updates to minor and major subassembly versioning.

Process Description and Examples

The MDT State Kit Updater delivers subassembly PKT files with the MDT State Kit beginning with release 2024. These PKT files are updated through the state kit release process. MDT State Kit delivered PKT files are located at:

C:\MDOH\StateKit\Civil 3D\20XX\Subassemblies

Customized subassembly and assembly files are prepared in a dedicated location and saved with project files in Forma (or identified document management location for consultants external to MDT). The MDT State Kit delivered User folder is located at:

C:\mdoh\StateKit\Civil 3D\User

Section I. Updated Subassemblies in DWG File

Autodesk Civil 3D 2024 brought a significant change to subassembly functionality where linking directly to PKT files is supported. General information on those enhancements included with Autodesk Civil 3D 2024 and beyond is available for review:

Autodesk Civil 3D 2024 – New in Subassembly Workflows

Procedure – Update PKT Subassembly to New Version (Minor Updates)

When a subassembly PKT file that is referenced into a drawing is updated with minor changes, it is released in the MDT State Kit with a minor version update and no PKT file name changes. Symbols and tooltips will be displayed within Civil 3D next to the items in the Prospector tree to alert you.

1. Right-click the out-of-date subassemblies in the PROSPECTOR and select UPDATE ALL SUBASSEMBLIES to update them in the drawing. This will update the subassemblies to the latest minor version update.

Procedure – Update PKT Subassembly to New Version (Major Updates)

Major subassembly updates are released in the MDT State Kit having new PKT files saved with a version number appended to the file name. No indication of major updates is observed within Civil 3D. MDT State Kit update notifications will communicate available updates, or they can be observed within the subassembly

folder. This is to prevent significant updates from creating design difficulties as there may be instances where the subassemblies are automatically updated without user acknowledgement.

Switching the reference to the latest PKT file version is necessary to use the updated PKT.

1. Right-click the out-of-date items in the PROSPECTOR tree and select CHANGE SUBASSEMBLY PKT FILE.
2. Browse to C:\MDOH\StateKit\Civil 3D\20XX\Subassemblies and select the PKT file of the subassembly having the new version appended to the subassembly name.

   Example: If the current version of MDT Lane in the dwg is linked to MDT Lane_2.pkt, then it may be updated to the latest major update by selecting MDT Lane_3.pkt.

Procedure – Update or Maintain Non-PKT Subassemblies

See ***Civil 3D 2022 to 2024 Subassembly Updates***.

Section II. Save and Use Modified Project Specific PKT Files & Assemblies

Procedure – Save and Share a Project Specific Custom Subassembly

Option 1 - Customized PKT files can be created using Subassembly Composer for project specific needs and saved in the project specific folder location: \\ACCDocs\Montana Dept of Transportation\~*Project Name*~\Project Files\RD - Road Design\Subassemblies.

Subassembly PKT files saved in the project folder may be imported directly into a dwg from the project Subassemblies folder using the ToolSpace Prospector without the need to add or access a subassembly on a palette.

Option 2 – A Subassembly may be added to a user's tool palette from a PKT file as a means to create a sharable subassembly palette for project users. See ***MDT Civil 3D State Kit User Tool Palettes – Release 2026***

1. Create a New tab in the User palette with a Unique Name (i.e. ~Project~ - Subs)

2. Import the PKT subassembly to the local User palette and close Civil 3D so the palette ATC file can be saved in the C:\MDOH\StateKit\Civil 3D\User\Toolpalette\Palettes\ folder.

3. The ATC file can then be copied to the project Subassembly folder \\ACCDocs\Montana Dept of Transportation\~*Project Name*~\Project Files\RD - Road Design\Subassemblies.

Procedure – Use a Shared Project Specific Custom Subassembly

Option 1 - Import the Subassembly from the project Subassemblies folder into the dwg. Refer to ***Autodesk Civil 3D 2024 - New in Subassembly Workflows***

Option 2 –

1. With all instances of Civil 3D closed, copy the shared palette ATC file from the project Subassembly folder to C:\MDOH\StateKit\Civil 3D\User\Toolpalette\Palettes\.

2. Open Civil 3D and navigate to the User palette using the button on the MDT Tools ribbon.

3. Select a subassembly from the project tab and add it to an assembly in the dwg.

Procedure – Save and Share a Project Specific Custom Assembly

Customized assemblies can be created in any DWG file for project specific needs and added to a tool palette for sharing between DWG files. An Assembly may be added to a User palette from a DWG file as a means to create a sharable assembly for project users. See ***MDT Civil 3D State Kit User Tool Palettes – Release 2026***.

1. Create a New tab in the User palette with a Unique Name (i.e. ~Project~ - Assemblies) Make sure that the DWG file that contains the assembly to be shared is saved in the project folder and not in a local location.

2. Add the Assembly to the local User palette by dragging the assembly onto the palette from the DWG.

3. Close Civil 3D so the ATC file will be saved in the C:\MDOH\StateKit\Civil 3D\User\Toolpalette\Palettes\ folder.

4. The ATC file can then be copied to the project Assembly folder \\ACCDocs\Montana Dept of Transportation\~*Project Name*~\Project Files\RD - Road Design\Assemblies\.

Procedure – Use a Shared Project Specific Custom Assembly

To use a shared project specific custom assembly, a palette will need to be added to the User palette location.

1. Close all instances of Civil 3D.

2. Copy the shared palette ATC file from the project Assembly folder to C:\MDOH\StateKit\Civil 3D\User\Toolpalette\Palettes\.

3. Open Civil 3D and navigate to the User palette using the button on the MDT Tools ribbon.

4. Select an Assembly from the project tab and add it to a DWG file.

Procedure – Upgrade Shared Project Specific Custom Subassembly and Assembly Files

Upgrading project specific custom subassembly PKT files and assembly DWG files to be compatible with the current Civil 3D version is important. See ***Civil 3D 2024 to 2026 Custom Subassemblies and Assemblies***.