MONTANA
Department of Transportation

August 2025

MDT Civil 3D State Kit - Control Profile Editor

YOUTUBE VIDEO DOCUMENTATION

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OVERVIEW

The Civil 3D profile object is generally intended for using station/elevation information to establish vertical geometry and function as a graphical representation of roadway, rail, drainage, waterway, or other features, but Civil 3D profile objects can be used for more than these purposes.

If a Civil 3D profile object is thought of as acting as nothing more than a numeric "container" at a given location, the "container" could be used to hold other values such as slope, width, elevation, or logical switches, etc. Then, this profile could be used as a corridor target and control various parameter values of subassemblies.

For example, instead of station/elevation, a profile value could represent station/slope to create smooth transitions or represent station/logical switch to activate or deactivate subassembly behavior at specific locations.

Leveraging the use of profile objects in this way can reduce the number of corridor regions or the number of assemblies needed to convey design intent in a Civil 3D model.

The **Control Profile Editor** command can quickly create profiles and/or allow editing of profile values without the need for a graphical profile view.

The **Control Profile Editor** command is developed and provided by WisDOT.

COMPANION DOCUMENTATION

YouTube Video Link: https://youtu.be/jc6BXOIyL-c?si=BjSmejoEZJPZjQ2Q

USING THE COMMAND

1. Type **MDTControlProfileEditor** at the command line or press the **Control Profile Editor** ribbon button.
2. The **Control Profile Editor** dialog box will open.

Control Profile Editor Dialog Box

The **Control Profile Editor** runs in a floating dialog box, so it is possible to interact with the Civil 3D application while the command is active. The dialog box includes a minimize button, so it can be reduced to the taskbar if additional screen space is needed.

Because the **Control Profile Editor** dialog box is modeless, changes in the drawing are not immediately reflected in the dialog box. Use the Refresh buttons, when needed, to

reread the drawing database and refresh the information displayed by the **Control Profile Editor**.

Entering Stations and Values

- Stations can be entered in the format 555+55.43 or 55555.43.
- Station equations are fully supported. All stations entered are the stations *with* equations. Raw stations (station as if no equations are used) are displayed for reference.
- Values can be entered as whole numbers or decimals.
- Slope values are represented as (*ft/ft*). For example, for a slope value of 4:1, enter it as 0.25 (*ft/ft*). Values entered as "*Run:1"* or "*grade%"* are automatically converted to *ft/ft*.
- If there is an issue with an input value, a red icon is displayed next to the value. Hover the cursor over the icon to see why the value did not pass validation.

Control Profile Names

A profile name prefix of *"ZCP-"* is hard-coded into all control profile names. (The *"Z"* puts the control profiles at the bottom of the profile list alphabetically in the **TOOLSPACE > Prospector tab**. *"CP"* stands for Control Profile.)

The **Control Profile Editor** will only interact with profiles that have a "*ZCP-*" profile name prefix **and** do not have any vertical curves. Profiles created by any other method must be named or re-named with a profile name prefix of *"ZCP-"* to be recognized by the **Control Profile Editor**.

Create tab

The **Create tab** is where control profiles can be created. Station limits and a default Value can be defined.

Creating an Individual Profile

1. Select a parent alignment in the **Control Profile Editor** dialog box.
2. Enter a new profile name in the Name box.
3. The parent alignment station limits are automatically populated when the alignment is selected. The Start and End station values can be changed by either editing the stations in the box, or by using the pick buttons to select stations in model space.
4. Set the default Value for the profile. In most cases, this will be the most common value for the profile range.
5. Click "Create".

6. A message will appear indicating the profile has been created. (The profile does not have to be visible in a profile view to add/edit/remove values. This can be done in the Edit tab of the **Control Profile Editor** dialog box.)
7. Repeat steps 1-6 to create additional individual profiles or click “Close” to exit.

Creating Multiple Profiles at Once

1. Create a Control Profile CSV file to create control profiles in bulk. (If you have already created a Control Profile CSV to use, skip to step 2.)
    a. Select the “View Default” button in the **Control Profile Editor** dialog box to open the default Control Profile CSV located here: **C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Content\en-US\CreateSlpCntlProfs.csv**
    b. Do not edit the default file. **Save a copy** of the default file **to a different location**.
    c. Edit the copy as needed. (Multiple Control Profile CSVs can be created for different scenarios/projects.)
        i. The **Create? ('X')** column determines whether the control profile for that row is created. Insert an "X" to create.
        ii. The **Profile suffix** column contains standard object naming content. The resulting profile will be named “*ZCP-“* + *suffix*. Each control profile in the CSV must have a unique name.
        iii. The **default** column contains the default Value for the control profile.
        iv. The **Description** column is for a short description of the intended use of the control profile.
    d. **Save** and **close** the Control Profile CSV.
2. Select a parent alignment in the **Control Profile Editor** dialog box.
3. Check the “From File:” checkbox. (The Individual section of the dialog box will then be grayed out.)
4. Use the File Open button to browse and select a Control Profile CSV file. (The CSV file must be closed before selecting.)
5. Click the “Create” button.
6. When using the create multiple profiles option, a dialog box will appear allowing to preview the profiles, make changes to the profiles, and select/deselect specific profiles to process. (Changes made in this dialog do not alter the contents of the input Control Profile CSV file.)
7. Click the “Continue” button to create the selected profiles.
8. The profiles will be created. (The profiles do not have to be visible in a profile view to add/edit/remove values. This can be done in the Edit tab of the Control Profile Editor dialog box.)

9. Repeat steps 2-8 to process additional Control Profile CSVs or click “Close” to exit.

Edit tab

The **Edit tab** is where control profiles can be refined. Station/Value pairs can be added, edited, or removed.

Editing Control Profiles

1. Select the parent alignment of the profile to be edited. Only alignments that have Control Profile children are listed.
2. Select a control profile to be edited.
3. To add a station, type in the Station box or use the pick button to select a station in model space.
4. Enter a Value in the value box.
5. Click “Add”. (If the parent alignment contains station equations that result in the possibility of multiple instances of the specified station, a dialog will appear asking for the desired instance based on raw station.)
6. The table on the right lists each Station/Value pair. This is an interactive table and can be edited by clicking in the cells. The Raw Station and Transition Ahead columns are read-only and automatically computed.
7. To remove Values, select stations in the table and click “Remove”.
8. Repeat steps 1-7 for different alignment/profile combinations or click “Close” to exit.

The “Refresh Table” button refreshes the values in the **Control Profile Editor** Profile Table. **Note**: A refresh is necessary if the profile was edited in model space, either with the Civil 3D Profile Layout Tools or with grip edits, or if the Undo button was used.

Creating a Profile View

As a convenience, a Profile View can be generated from the **Control Profile Editor** dialog box.

1. Enter the name for the Profile View in the box.
2. Select a Profile View style, Profile style, and Profile View Label Set style.
3. Click “Create”.
4. Pick a location for the Profile View in model space. (Insertion point is the lower left limits of the Profile View.)
5. A Profile View will be created.