MONTANA
Department of Transportation

PROPOSED SURFACE CREATION

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Overview

This document contains the workflow necessary for creating a proposed surface in Civil 3D.

Process Guide

Application/Tool(s):	AutoCAD / Civil 3D
Version(s):	13.6.2123.0 Civil 3D 2024.4.6 Update
Environment:	MDT Civil 3D State Kit r2024 v2.3.1
Released/Revised:	3/11/2026



SUPPORT
Open a Case

Statement of Need

A workflow specific to creating a proposed surface was not covered in the Civil 3D production training. For that reason, the Road Design Workflow Subcommittee identified the need for more thorough documentation covering the topic.

Disclaimer: Because the State Kit is continuously being updated and improved, the styles and layers in this documentation may vary from what is in the current version of the State Kit.

Acronyms/Definitions Used in This Document

ACC – Autodesk Construction Cloud, Autodesk's new cloud storage ecosystem with enhanced tools, which will replace BIM 360 when it is retired.

References

Coordinate System Settings Support Document

Revisions

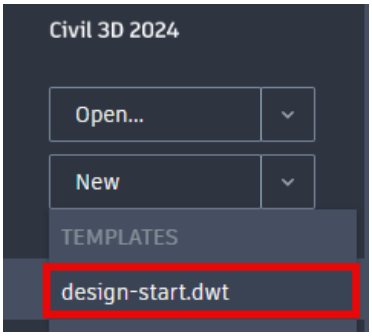
3/11/2026	Updates for ADA Accessibility

Process Description and Examples

Section I. Create Combined Proposed Surface

Procedure – File Setup

1. Create a new file using the ***design-start.dwt*** template. Save it as ***[UPN#]RDPSU001.dwg*** (for example, *9555000RDPSU001.dwg)* in the RD directory of the project on BIM 360/ACC. Use ***CTRL+S*** or navigate to the C3D icon in the top left and save the file.



2. Assign the project's coordinate system to the drawing according to the *Coordinate System Settings* support document.

3. Set the Working Folder that contains the project files. ***Toolspace > Prospector tab > Right-click Data Shortcuts > Set Working Folder….***

4. Set the Data Shortcuts Projects Folder for the Civil 3D Project. ***Toolspace > Prospector tab > Right-click Data Shortcuts > Set Data Shortcuts Project Folder….***

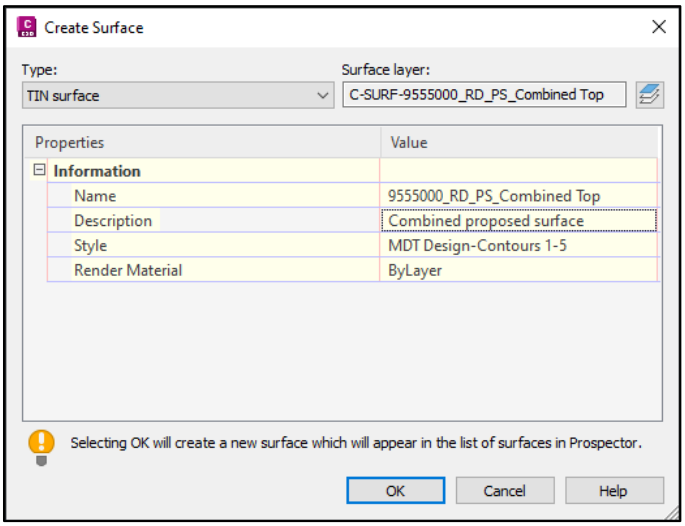
5. Associate the Civil 3D Project to the Current Drawing. ***Toolspace > Prospector tab > Right-click Data Shortcuts > Associate Project to Current Drawing….***

6. Create data references. ***Toolspace > Prospector tab > Data Shortcuts > Right-click object name > Create Reference.***
    - Existing surface
        - Style: ***_MDT-No Display***
    - Top and bottom corridor surface(s)
        - Style: ***_MDT-No Display***

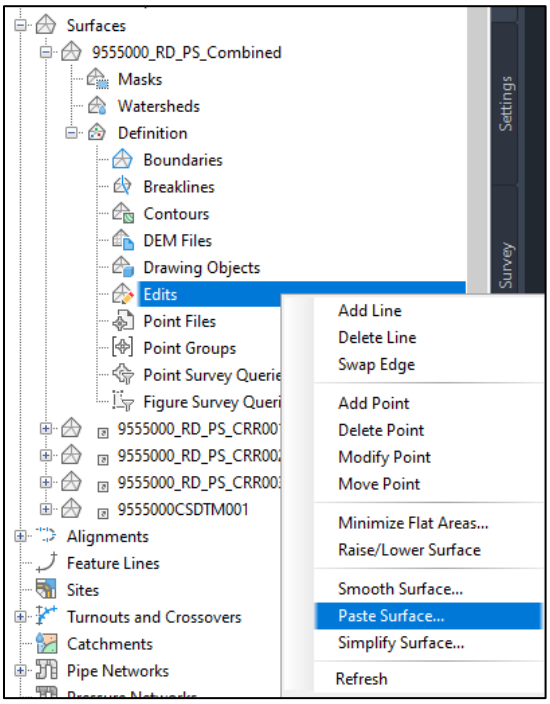
Procedure – Create Combined Surface

1. Create a new surface. ***Ribbon > Home tab > Create Ground Data panel > Surfaces dropdown > Create Surface*** *<OR>* ***Toolspace > Prospector tab > Right click Surfaces > Create Surface….***

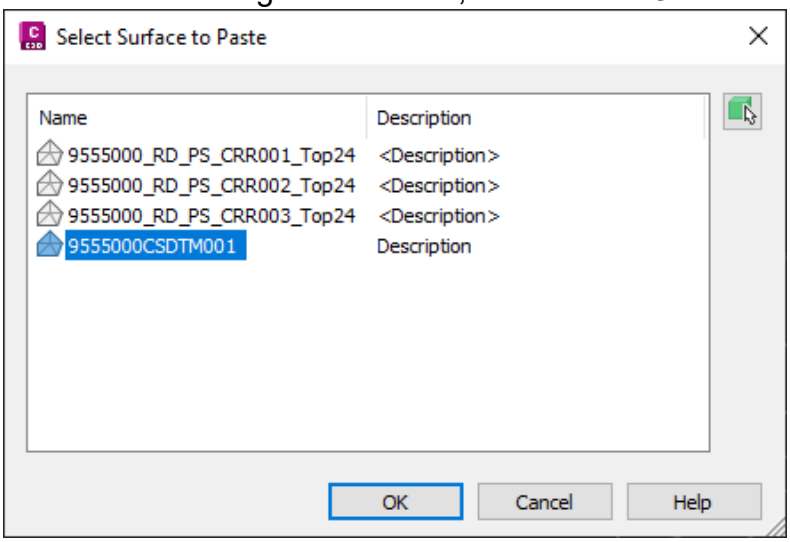
2. Name the surface ***[UPN#]_RD_PS_Combined Top*** (for example, ***9555000_RD_PS_Combined Top***). Set the style to ***MDT Design-Contours 1-5***. Then select ***OK***.



3. Paste surfaces. ***Toolspace > Prospector tab > Surfaces > [UPN#]_RD_PS_Combined Top > Definition > Right click Edits > Paste Surface…***

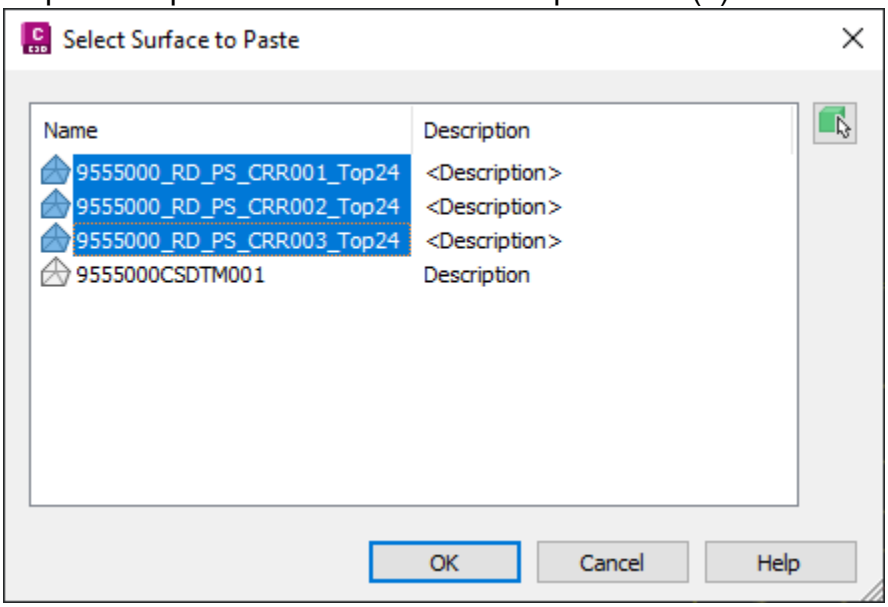


4. Select the existing surface first, then select OK.

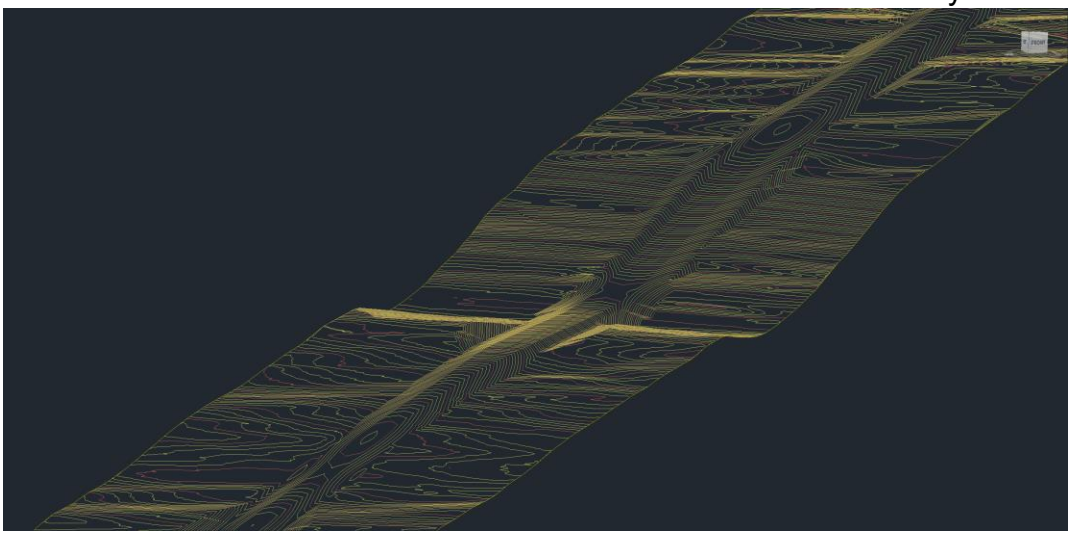


NOTE: The existing surface must be pasted first because the remaining surfaces will be pasted/layered atop it.

5. Repeat Step 3 and shift+select the top surface(s).



Examine the new surface to ensure the top corridor surfaces are pasted atop the existing ground surface. Use the Object Viewer to look for locations of cut and fill from the corridor and for the normal crown of the roadway.



6. If necessary, repeat the process for creating a proposed surface containing the bottom surfaces. Name the surface ***[UPN#]_RD_PS_Combined Btm.***

7. Create a data shortcut for the new surface(s). ***Toolspace > Prospector tab > Right click Data Shortcuts > Create Data Shortcuts...***
   Then select the newly created surface(s) and click ***OK.***

   NOTE: Edits to the surface can be viewed and changed in the ***Surface Properties*** dialog. Select the surface, right click ***Surface Properties*** and select the *Definition* tab. The operation type will list the order of edits in which they were performed, with the lowest priority item at the top of the list and the highest priority item at the bottom. Items can be reordered by selecting the appropriate parameter and clicking the up/down arrows on the left of the window.

