TITLE AND NOTES SHEETS IN AUTODESK

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Overview

This document contains workflows necessary for creating title sheets and notes sheets. This workflow is intended for use with any MDT road project requiring a full plan set, such as reconstruction and pavement preservation projects.

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:	4/7/2026



SUPPORT
Open a Case

Statement of Need

Workflows specific to title sheets and notes sheets were not covered in depth in the Civil 3D production training classes. 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.

References

Coordinate System Settings Support Document

MDT Title Sheet Map Creator

Montana Railroads ArcGIS Map

Import NAIP TIFF Imagery into Civil 3D

Summary Sheets in Autodesk

Centerline Coordinate Tables in Autodesk

Revisions

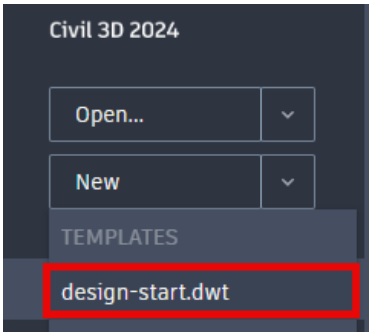
4/7/2026	Updates for ADA Accessibility

Process Description and Examples

Section I. Title Sheet

Procedure – File Setup

1. Create a new file using the ***design-start.dwt*** template. Save it as ***[UPN#]RDTTL001.dwg*** (for example, *9555000RDTTL001.dwg)* in the RD directory of the project on Autodesk Forma. Use ***CTRL+S*** or navigate to the C3D icon in the top left and save the file.

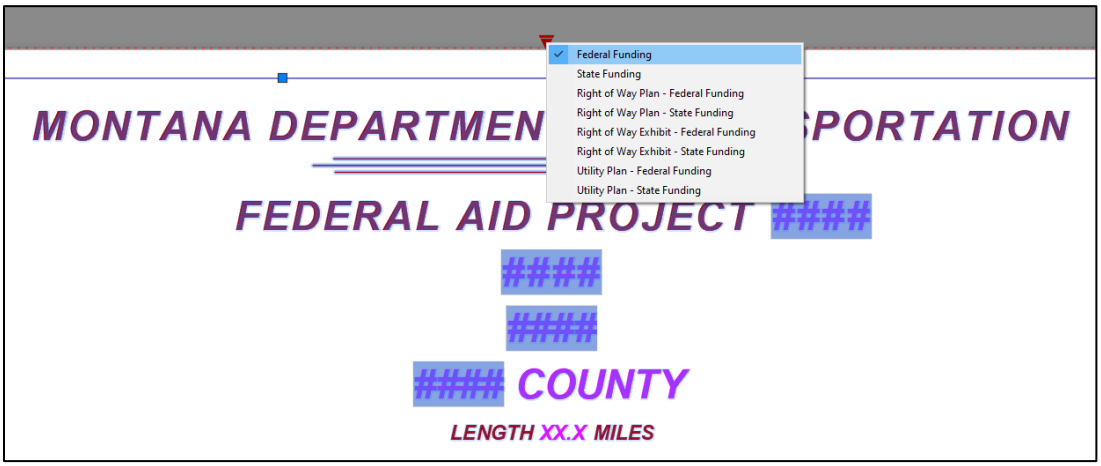


2. **Assign the project's coordinate system to the drawing according to the** *Coordinate System Settings* **support document.**

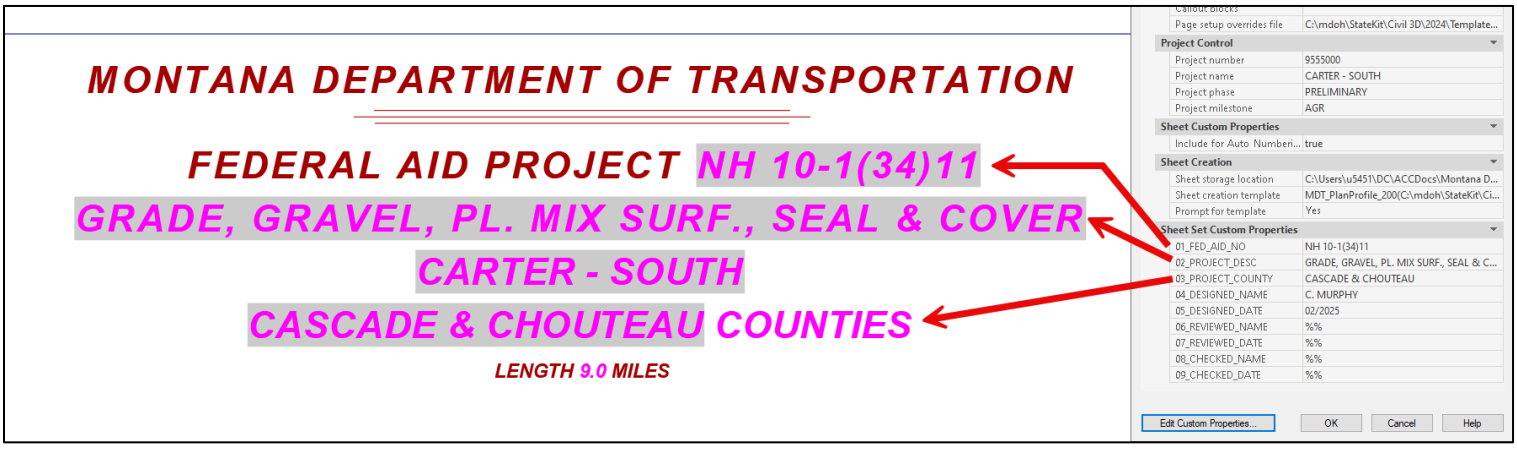
3. In the *MDT Tools* tab in the ribbon, select the *MDT Sheet Layouts* dropdown from the *MDT Sheets* panel and select the *Road Layouts* button. Then select the ***RD-Title*** layout and click ***OK*** to add it to the drawing.

Procedure – Project Heading Block

1. To change the funding designation or plan type, select the ***C-ProjectHeading*** block, then select the block visibility state dropdown. Select the appropriate designation if not federally funded.

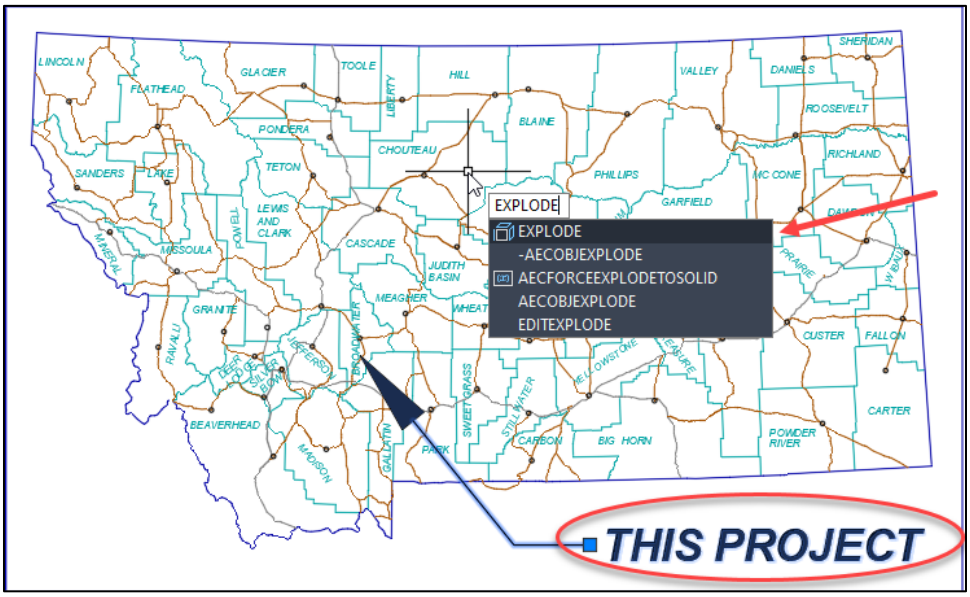


2. ***Explode*** the block by typing the command ***X*** or ***Explode***, or by selecting the explode icon from the ***Modify*** panel in the ***Home*** tab. Only edit the project length. The federal aid project number, project type description, project name, and county name placeholders with gray backgrounds are fields that are tied to the *Sheet Set Manager* and should not be edited or overwritten, since they will automatically update when linked to a sheet set with the custom properties populated.

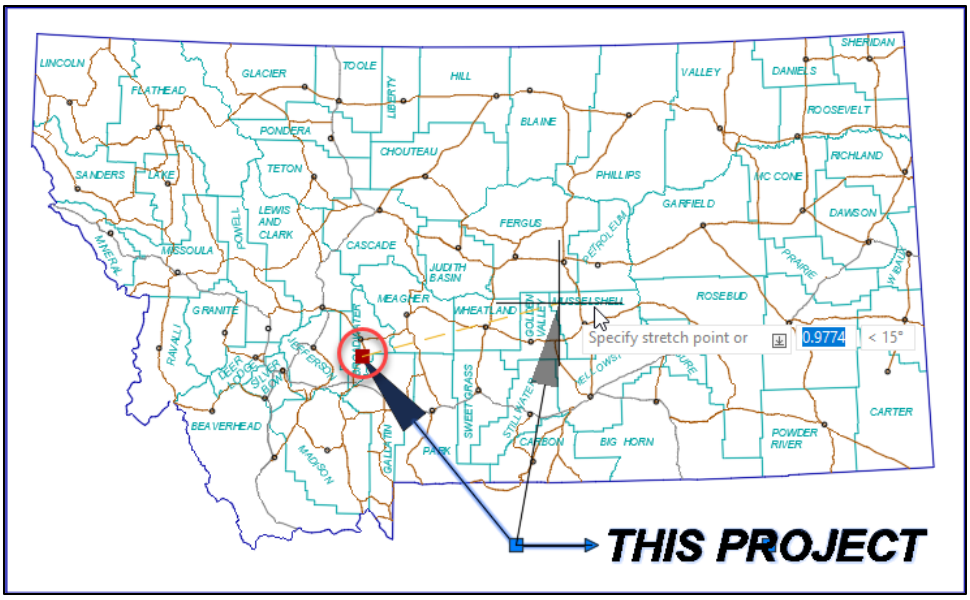


Procedure – Project Location

1. ***Explode*** the "THIS PROJECT" callout as outlined in the Project Heading Block procedure.

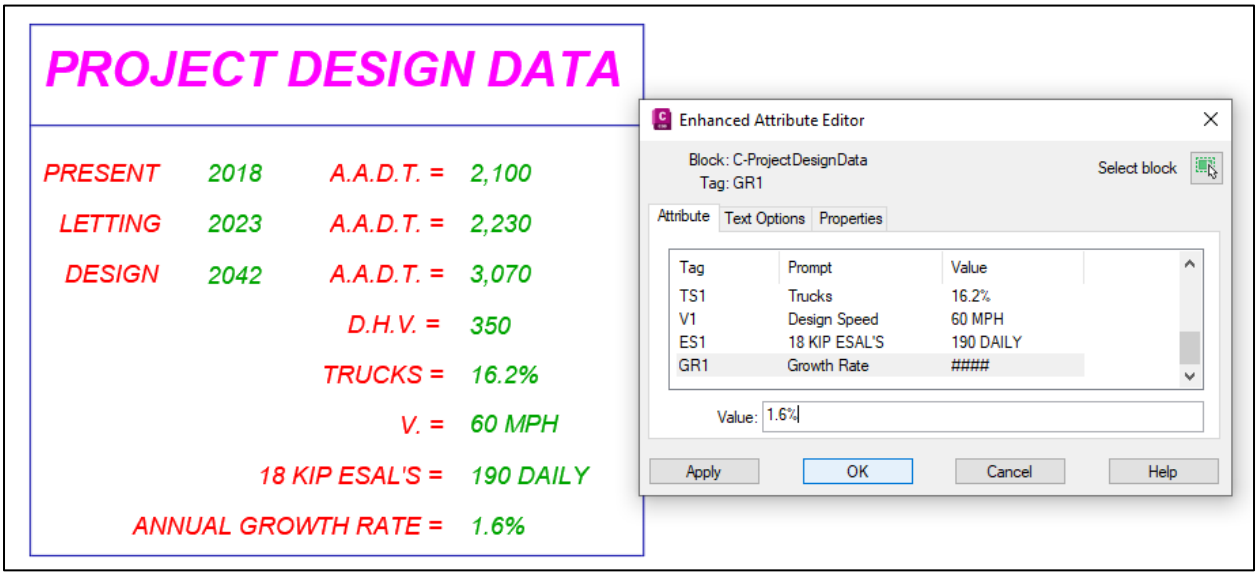


2. Use the grip on the tip of the arrowhead to move the arrow to the project location.



Procedure – Edit Project Design Data, Associated Project Agreement Numbers, and Related Projects Blocks

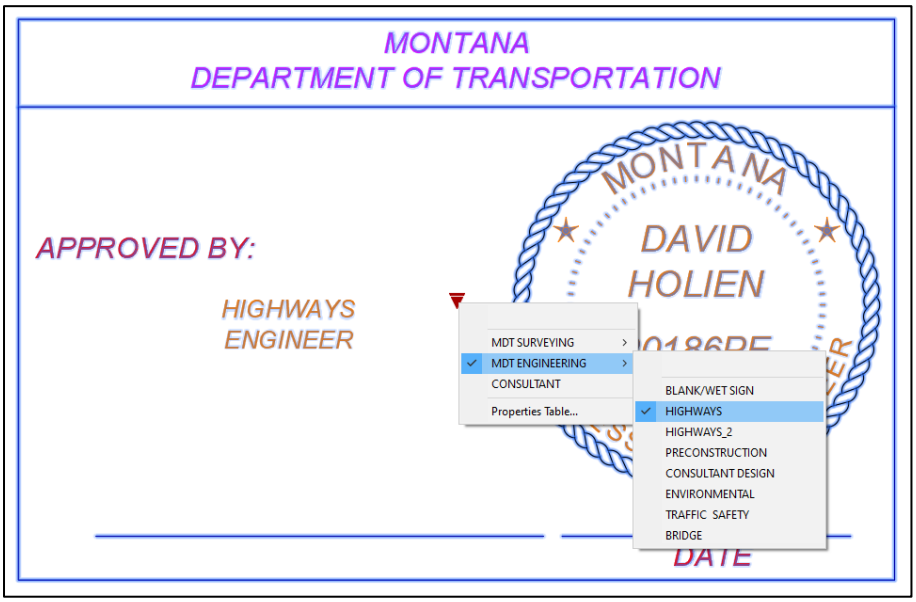
1. Double click within the ***C-ProjectDesignData*** block to open the *Enhanced Attributes Editor* dialog to edit each field. Click ***Apply*** after editing each value. When complete, click ***OK*** to exit the editor.



2. Repeat the process above to edit the ***C-ProjectAssociatedAgreementNumbers*** and ***C-ProjectRelatedProjects*** blocks, if applicable.

Procedure – Engineer's Stamp Block

1. Select the ***C-MDT_SEAL_BLOCK*** and select the visibility state dropdown arrow in the center of the block to change the format to the required department/engineer, if necessary.



Procedure – County Map

This procedure may need to be completed multiple times for large-scale projects so that the section numbers can be captured on the map rather than the township and range numbers. See Step 13 for additional information regarding multiple TIFFs.

If any issues are encountered with the Title Sheet Map Creator, please contact these support groups: *MDT Altis Support & MDT AGOL Admins.*

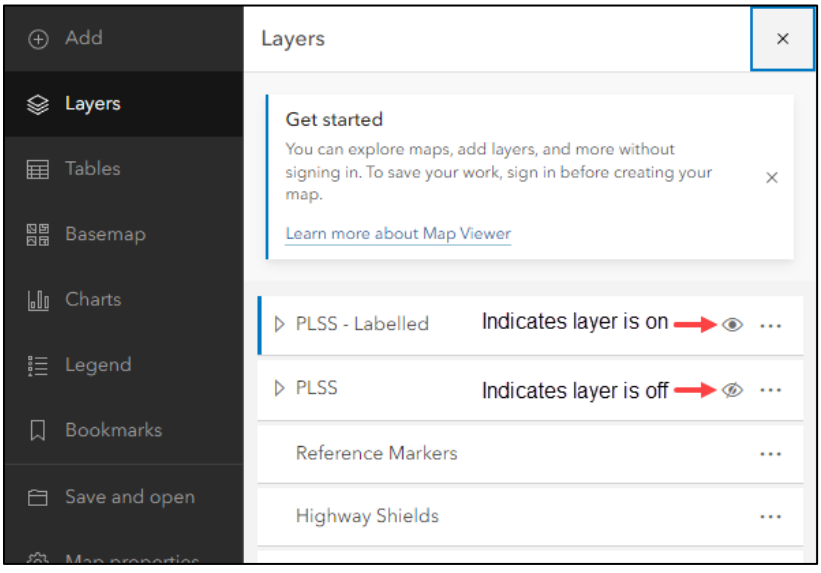
1. Access the *MDT Title Sheet Map Creator*.

   This map can also be accessed via MDT's website:
   https://www.mdt.mt.gov/business/engops/road.aspx
   Applications and Tools > *MDT County Maps* tile

2. Use any combination of ***Pan***, ***Zoom***, and ***Search*** to generate the approximate project area for the project basemap.

   NOTE: If the map must be rotated to fit better on the title sheet (i.e., a long north-south project needs to be shown on the title sheet but rotated to the east-west direction to fit the width of the layout), the MDT Title Sheet Map Creator can be rotated by right clicking and dragging the mouse.

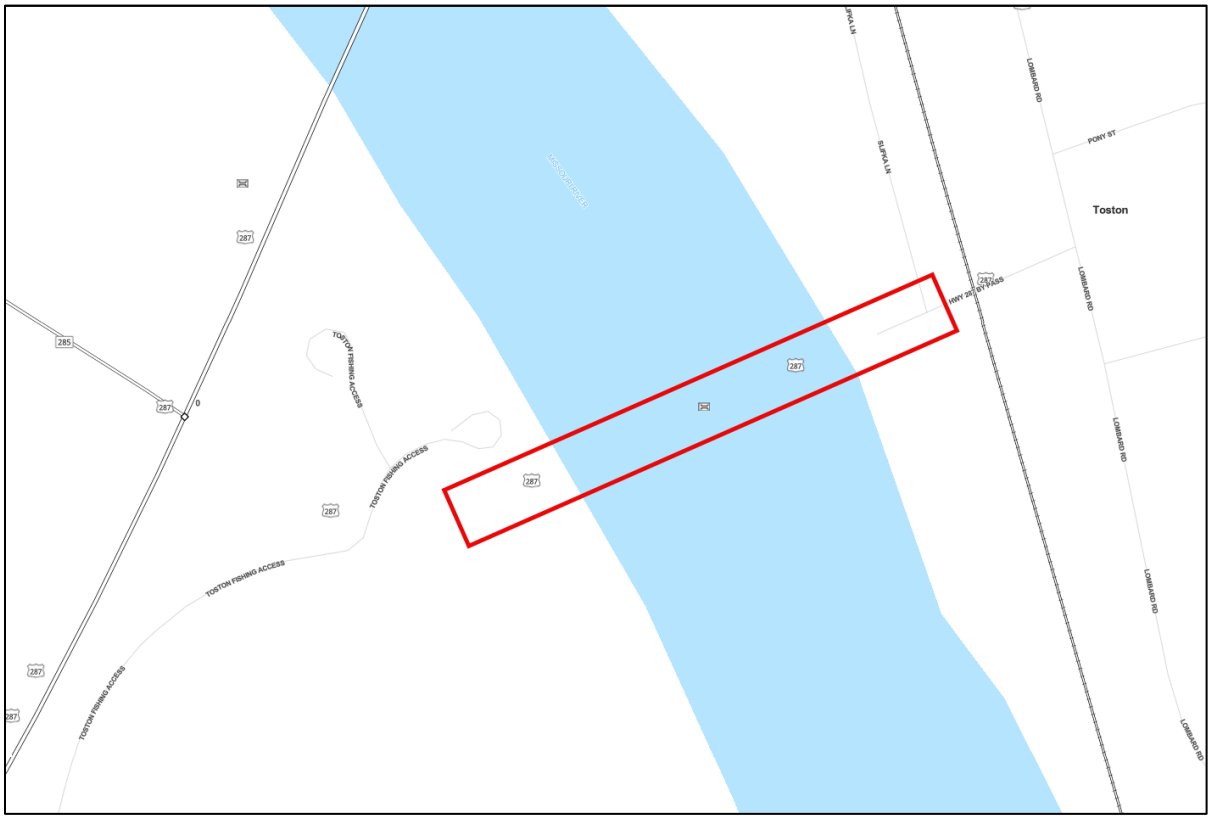
3. Click ***Layers*** and toggle visibility for individual data layers as needed. Hover the mouse over the layer to toggle the visibility.



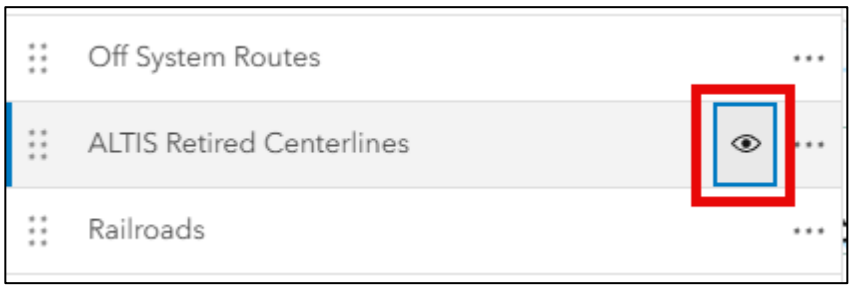
NOTE: If the following error is encountered with the web map, the internet browser cache must be cleared in order for the reference markers to populate on the map.



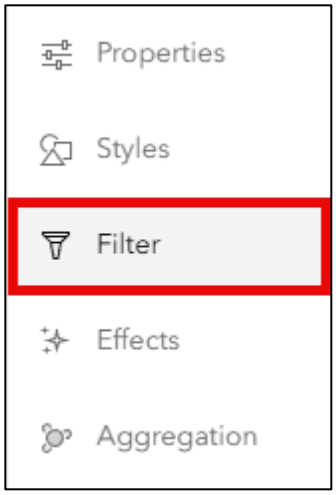
In the rare instance that the project is located on a route that is closed/retired and is not shown on the map in its default state, follow the steps below. This example is from the Toston Bridge Removal project, shown in the image below.



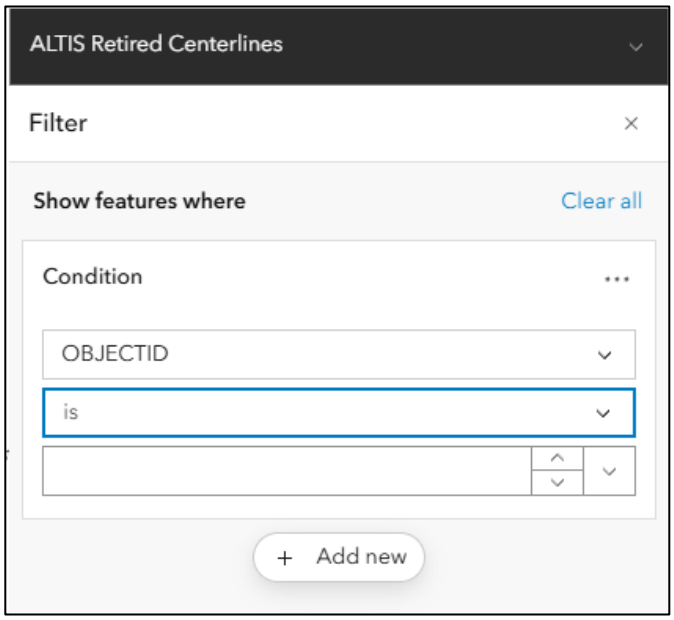
a. Toggle on the *ALTIS Retired Centerlines* layer.



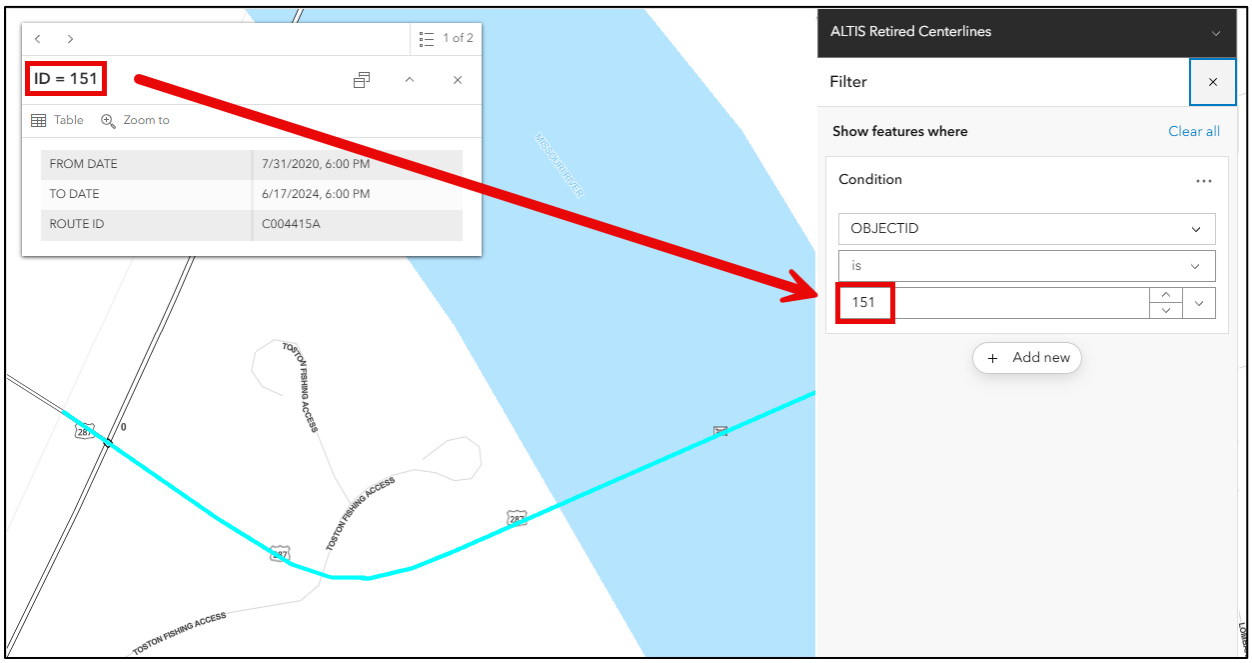
b. Select *ALTIS Retired Centerlines* layer, then select the ***Filter*** option on the right side menu of the Map Viewer.



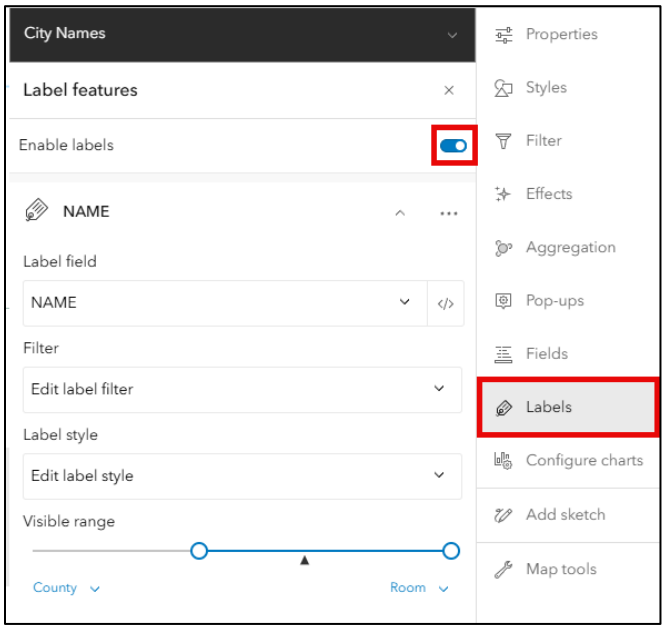
c. In the *Filter* menu, select the ***+ Add new*** button and change the condition to ***OBJECTID*** and the condition to ***is***.



d. Select the retired route on the map and observe the ***ID =*** number. Apply that number to the filter, then select ***Save*** to apply the filter. Applying a filter ensures that only the desired historical centerline is shown and any other retired routes in the vicinity of the project will not be turned on to avoid conflicts with current centerlines.

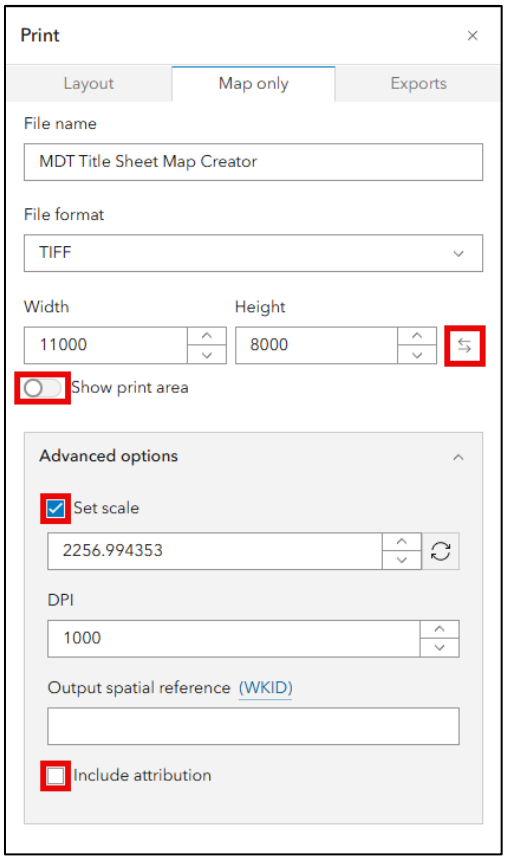


NOTE: Labels on the map can be turned off as needed. To do this, select a layer such as *City Names* and select the ***Labels*** option on the right side menu of the Map Viewer. Then toggle off *Enable labels*.



4. Click ***Print*** from the Map Viewer's leftmost menu. 

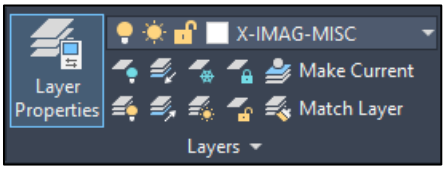
5. Select the ***Map Only*** tab and set the following configurations:
    a. Change the ***File format*** to *TIFF*
    b. Toggle off ***Show print area***
    c. Expand ***Advanced Options*** then set the *DPI* to a maximum value of 1000
    d. Check ***Set scale***
    e. Uncheck ***Include Attribution***
    f. Click the ***switch dimension*** icon to switch the width and height so that the width is always greater than the height



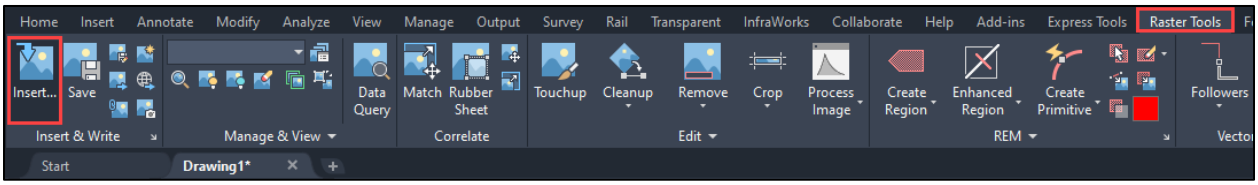
6. Click ***Export***. The exported file will load within the *Exports* tab. The export process takes 1-2 minutes.

7. Click on the completed export to save the TIFF. Rename the file to an appropriate name, such as *[UPN#]RDTTLMAP.tif* and save it to the project's RD folder on Autodesk Docs. The file will then be uploaded to Autodesk Forma via the Desktop Connector.

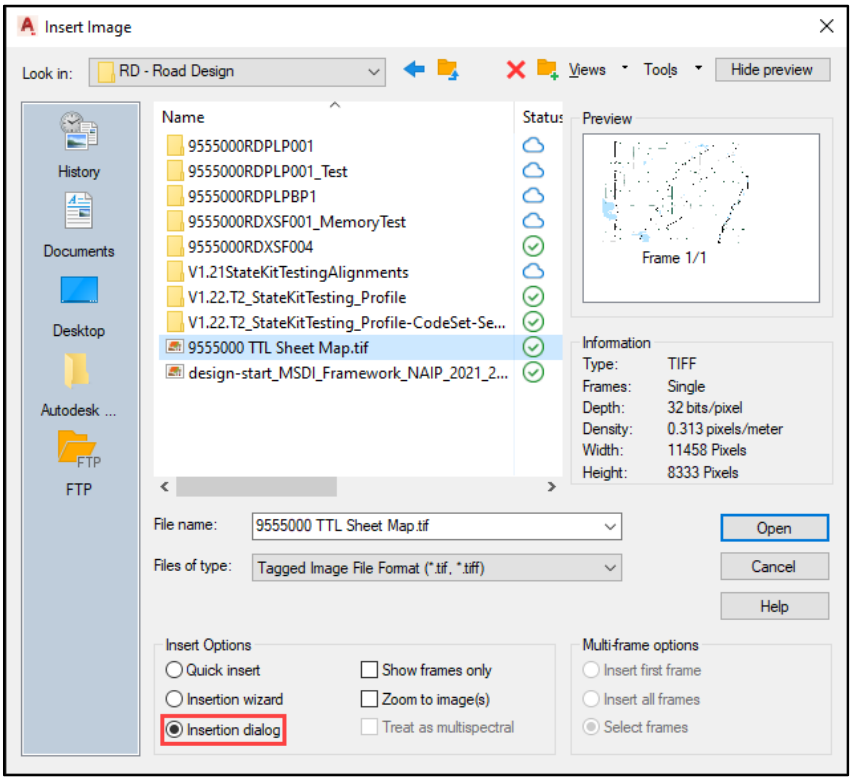
8. Return to the title sheet file in Civil 3D. Set the active layer to ***X-IMAG-MISC***.



9. Select the *Raster Tools* tab and select ***Insert…*** from the *Insert & Write* panel or use the command ***IINSERT***.

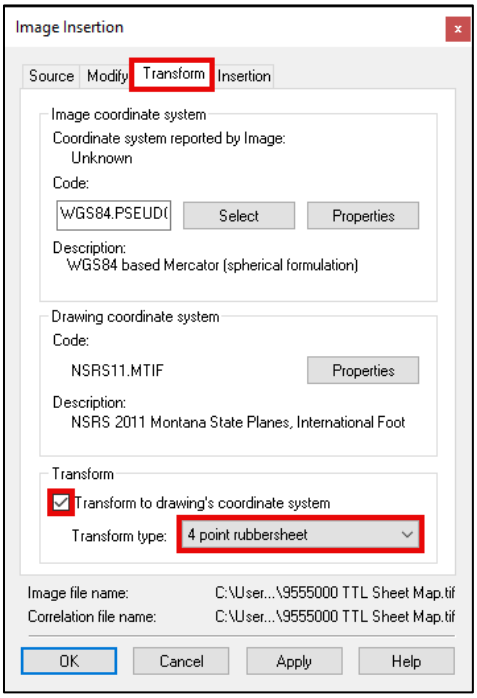


10. In the *Insert Image* popup, navigate to the project's RD folder on Autodesk Forma, then select the TIFF file. Toggle the ***Insertion dialog*** under the *Insert Options*. Then select ***Open***.

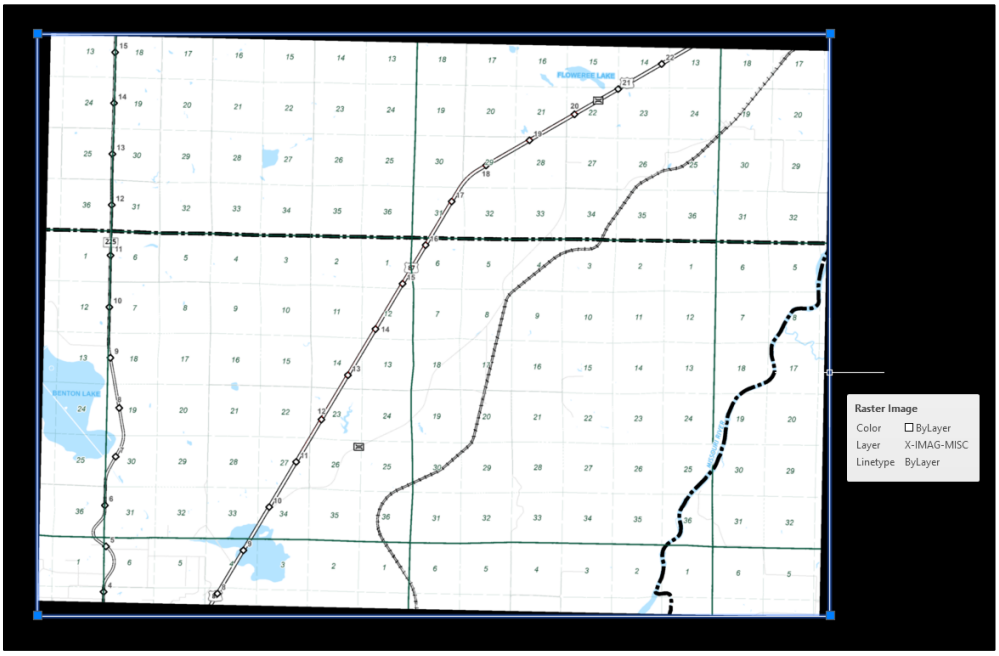


11. In the *Image Insertion* dialog window, select the *Transform* tab. Check the box to ***Transform to drawing's coordinate system***. Change the transform type to ***4 point rubbersheet***. Then select ***OK***.

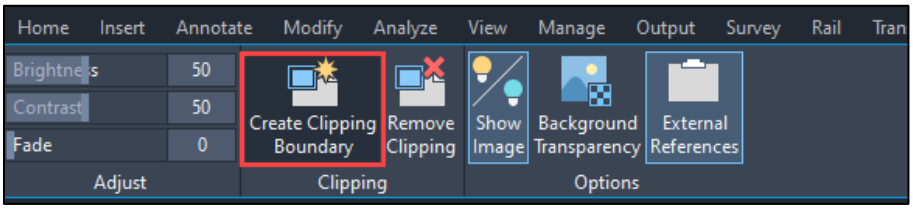
    NOTE: The image coordinate system and drawing coordinate system should be set correctly by default. The code for the raster imagery is ***WGS84.PSEUDOMERCATOR*** if not already set.



The imported TIFF should have a skew to it, meaning that the image has been transformed to the drawing's coordinate system.



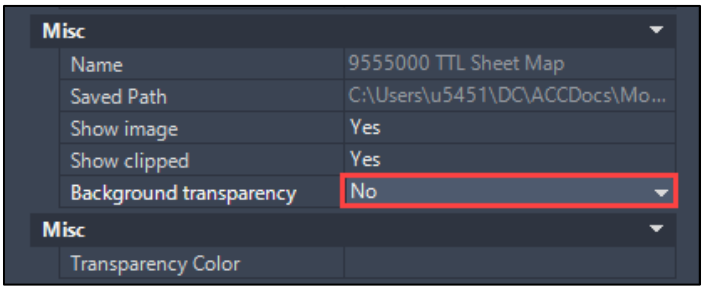
NOTE: The raster image may need to be cropped so that the gap between the skewed TIFF and the raster border does not plot as black within the viewport. Select the border of the raster image and in the *Image* contextual tab in the ribbon, select ***Create Clipping Boundary***. Then draw a rectangle to define the new boundary for the clip. The extents of the viewport can also be deliberately set to address the skew issue.



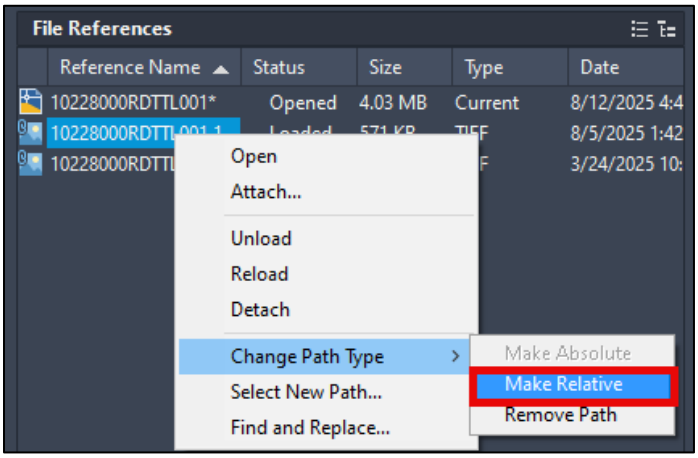
For long north-south projects to be shown on the title sheet as rotated to the east-west direction to fit the title sheet longitudinally, rotate the view in Model space using the arrows surrounding the View Cube.



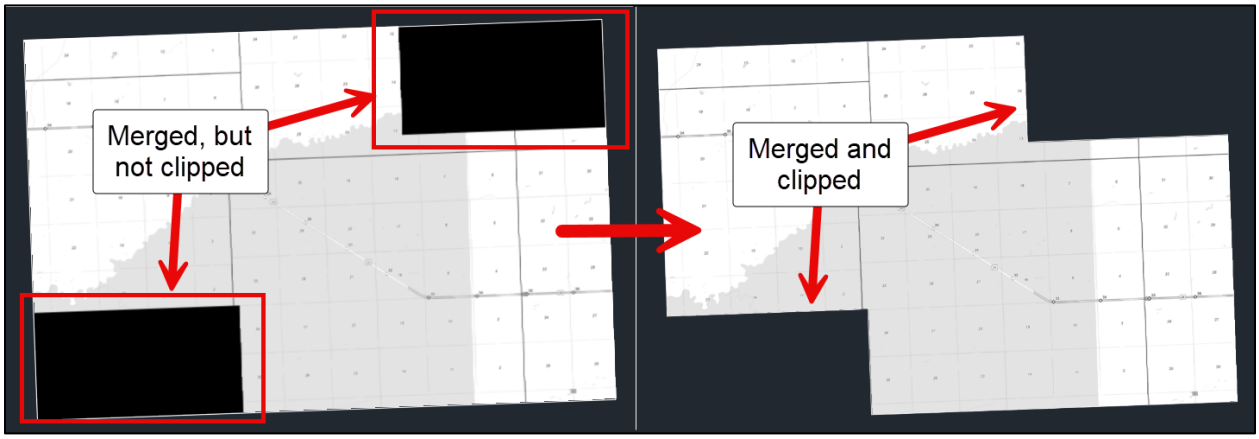
12. Select the border of the image, then open the ***Properties*** palette. In the first ***Misc*** section, select the dropdown for ***Background transparency*** and set it to ***No***. This allows the county lines to be shown in the viewport.



13. Change the image's path type. The image defaults to a full path and must be changed to a relative path so that downstream users such as District Engineering Officers will not encounter pathing issues when creating the as-built plans.
    a. Open the *External References* palette (Command: ***XR***).
    b. Right click the image and hover over ***Change Path Type***. Then select ***Make Relative***.

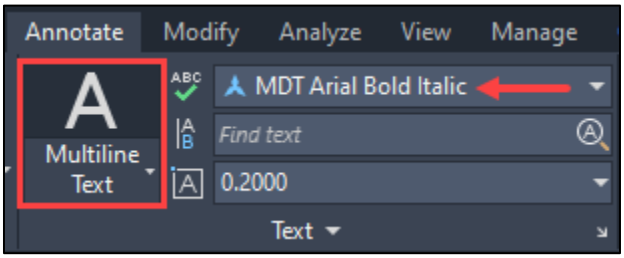


14. <u>OPTIONAL:</u> Merge images. If there are multiple TIFF images in the file, the images can be merged to prevent each image's border from plotting where they overlap.
    a. Select all the raster images in the drawing.
    b. In the *Raster Tools* tab, select the *Edit* panel dropdown and select ***Merge***, or use the command ***IIMERGE***.
    c. Then select one of the images as the destination image so that all the images will be merged into it.
    d. When prompted, select ***Yes*** to erase the source images.
    <u>NOTE:</u> It may be necessary to use a polygonal clip to the extents of the images (See note in Step 11) and to turn off the background transparency (See Step 12) after merging the images.

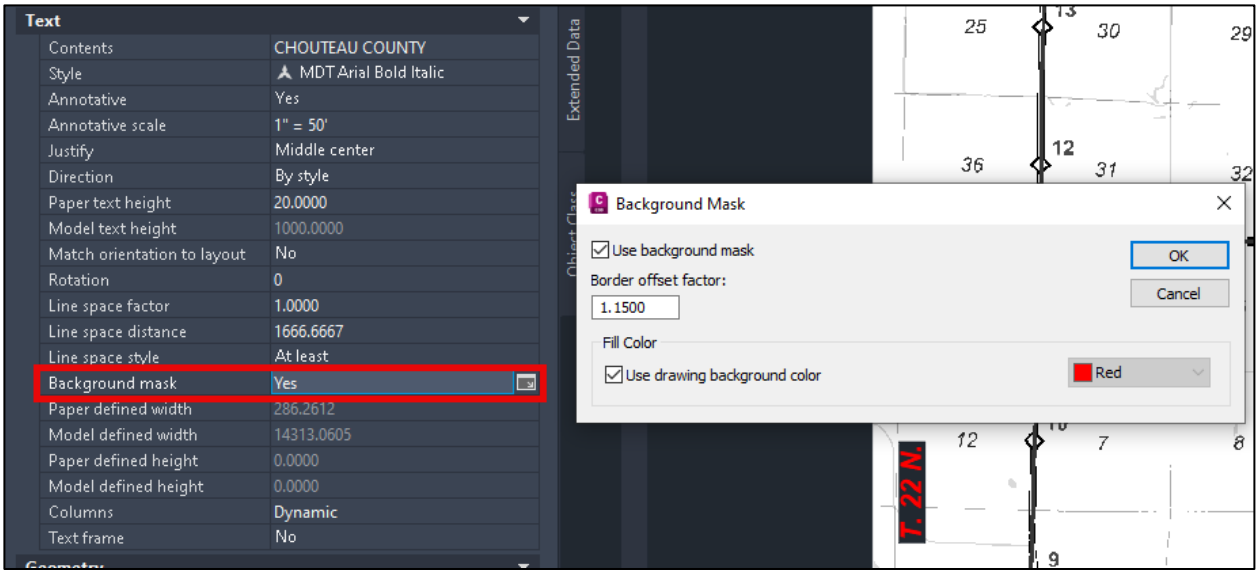


15. Set the active layer to ***X-MISC-TEXT***. Change the layer color to red so that the text will be readable on the map. Then add multiline text by selecting the ***Multiline Text*** button from the *Text* panel in the *Annotate* ribbon tab. Set the *Textstyle* to ***MDT Arial Bold Italic***. Then add the following to the map and adjust the text heights as aesthetically appropriate:
    a. County name(s)
    b. Township and ranges*
    c. Town names (if not already shown on the map)
    d. Reservation names (if applicable and not already shown on the map)
    e. Rail Service names (if close to project or intersect project)
        - Railroad service provider names can be found here

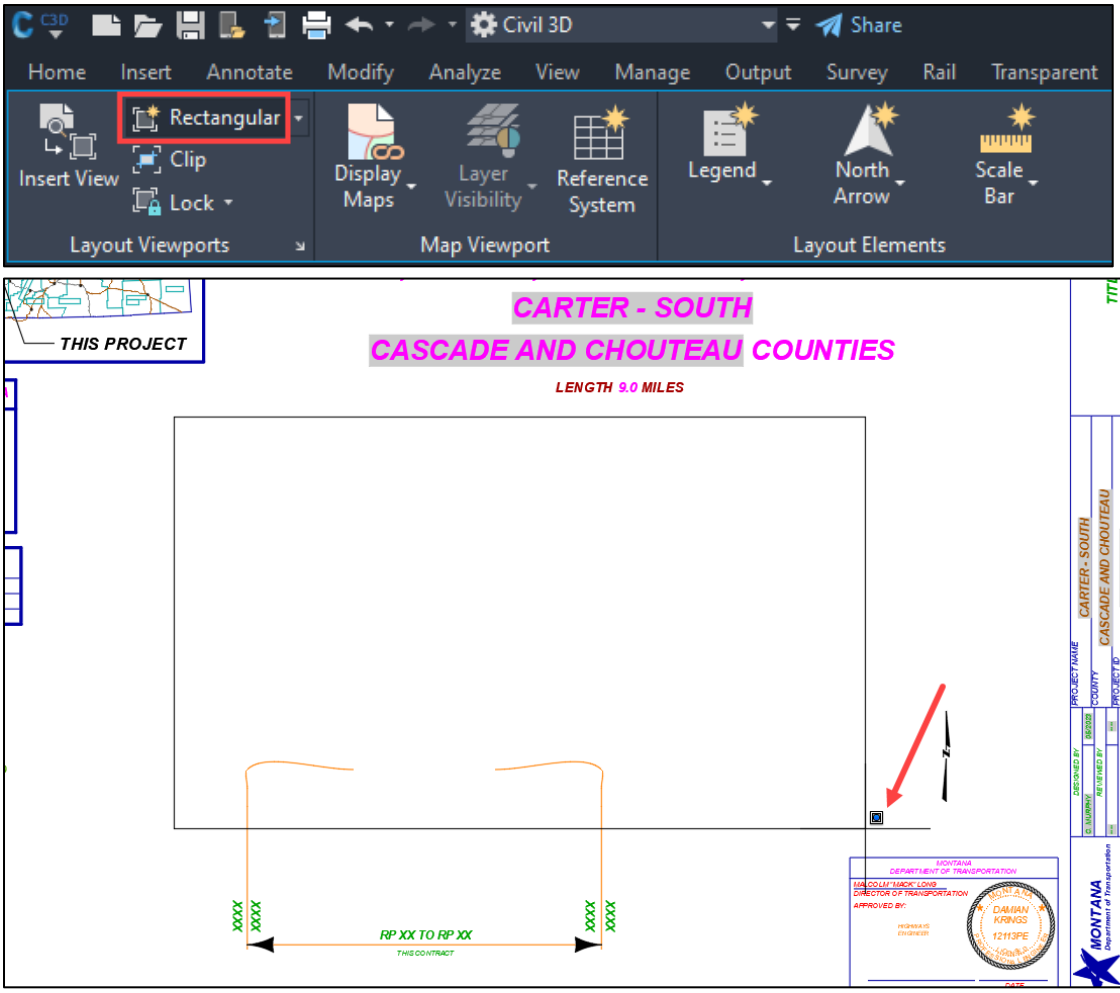
*To easily locate the township and ranges, return to the Title Sheet Map Creator and zoom out until the map switches from section numbers to townships and ranges.



NOTE: It is recommended to add a background mask to the text so that the text takes precedence over the linework on the map. To do this, select a text object, open the *Properties* palette, and set the *Background mask* to ***Yes***.
In the corresponding popup, check ***Use background mask***, use a border offset factor of ***1.15***, and ***use the drawing background color*** as the fill color.



16. If applicable, create a ***data reference*** to the mainline or existing alignment for ease of snapping the project limit arrows to points on the alignment. Set the alignment style to ***MDT ALGN-Plan CL*** and the alignment label set to ***_MDT-No Labels***.
17. Return to the *RD-Title* layout.
18. Create a viewport to display the county map on the title sheet. Set the active layer to ***GS-VPRT***. Select the *RD-Title* layout, then in the *Layout* contextual tab in the ribbon, select ***Rectangular*** in the *Layout Viewports*. Specify the limits of the viewport in the paper space by clicking upper left and lower right corners of the rectangle as the extents.



19. Double click within the viewport to switch to model space. Use ***Pan*** and ***Zoom*** to capture the area of the county map. Adjust the limits of the viewport by clicking and dragging the corner grips. Rotate the viewport using the *ViewCube* if necessary*. Once the limits and scale are set, lock the viewport by clicking the lock icon in the status bar on the bottom right of the screen.

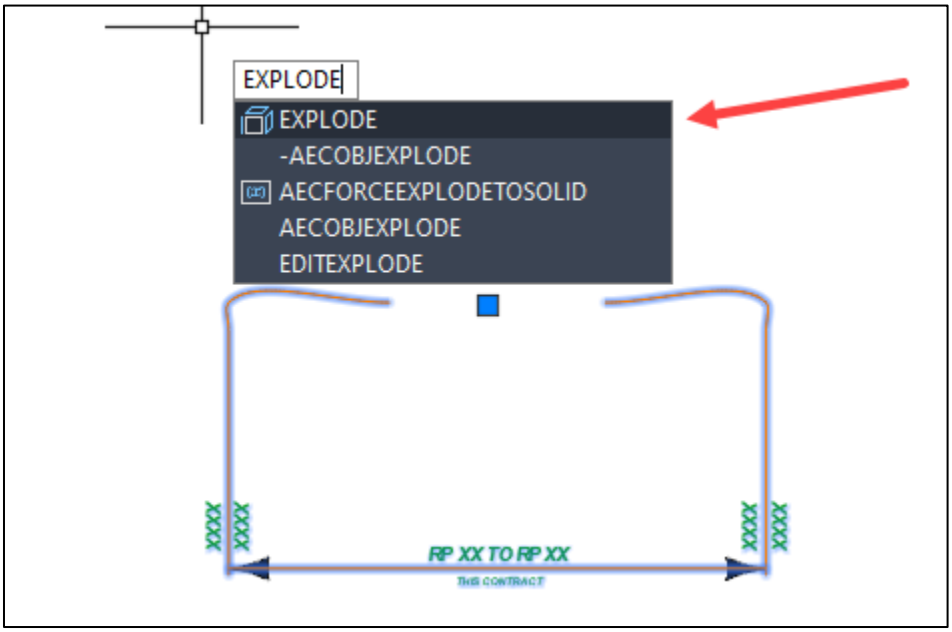


*See note in North Arrow Procedure.

Follow page 8 of the *Import NAIP TIFF Imagery in Civil 3D* tip document for converting the raster to greyscale.

Procedure – RP Limits and Project Location Label

1. ***Explode*** the ***C-ProjectLocationLabel*** block to edit its contents.

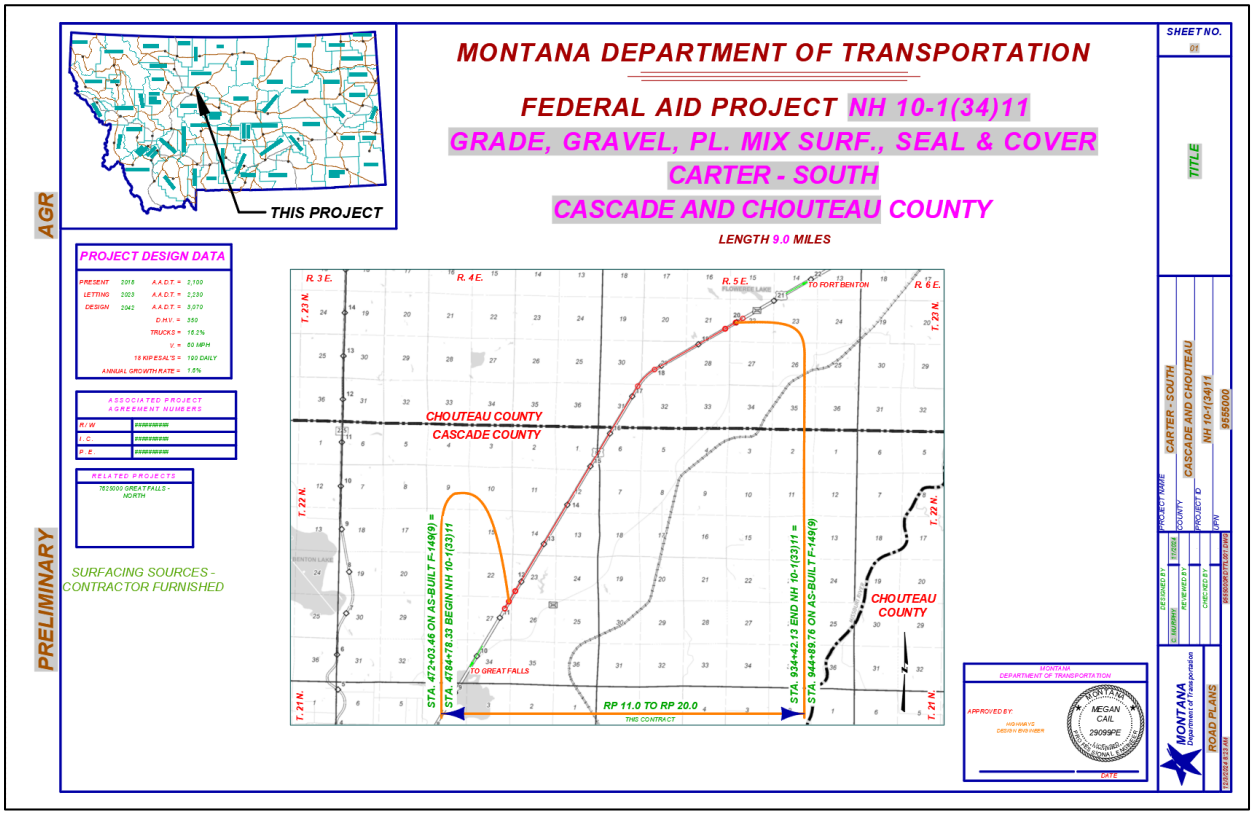


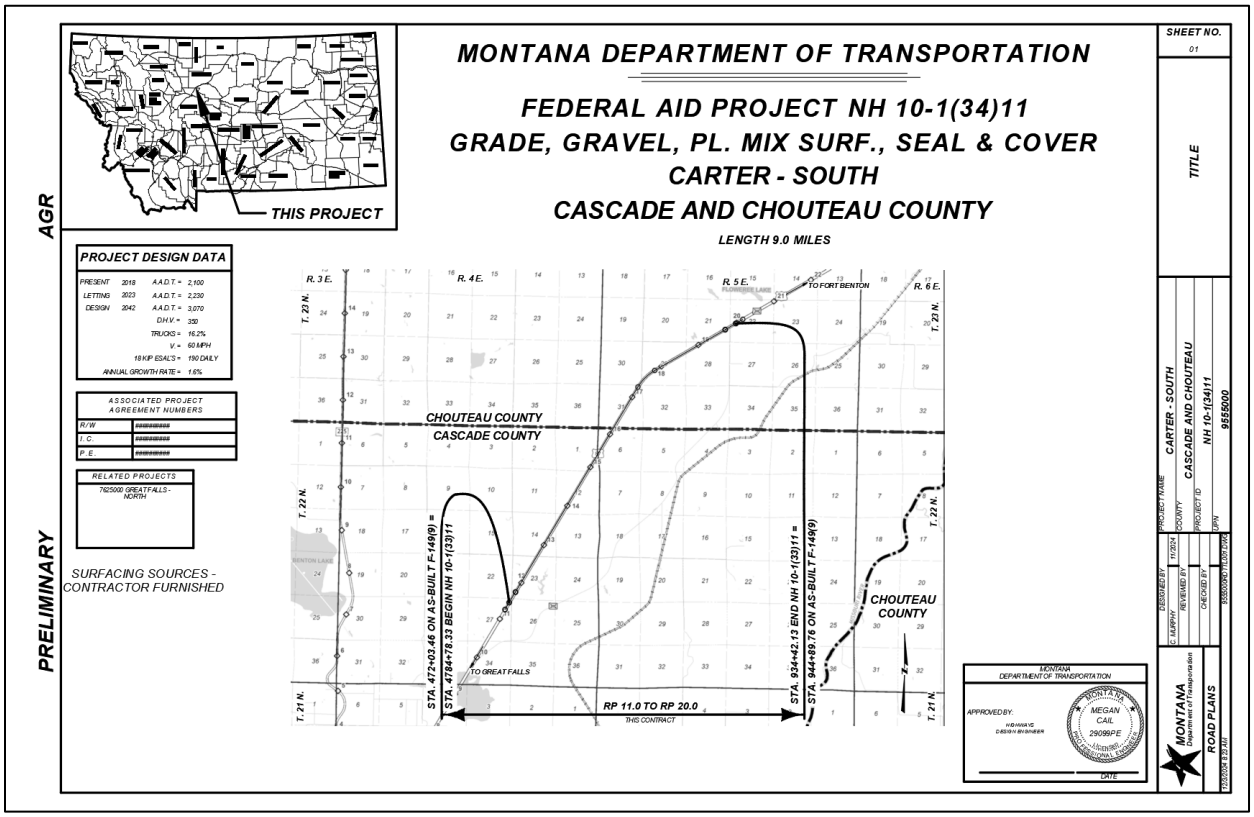
2. Use the grips to adjust the project limits lines and labels to match the extents of the project on the county map.
3. Edit the text fields by double clicking within them, typing the appropriate text, and pressing ***Esc*** or clicking outside of the text box to exit the *Text Editor*.
4. Once the limits and labels are set, use the ***CHSPACE*** command to move the limits from paper space to model space.
   NOTE: MDT Right-Of-Way requested that Road Design place the RP limits and project location information in model space so that they can utilize the RDTTL file as an external reference into their drawings. Any items created in paper space will not be visible in the external reference in model space.

Procedure – North Arrow

1. In paper space, select the ***P-NorthArrow-Only*** block and use the ***MOVE*** command to place the north arrow in an appropriate location within the extents of the map in the viewport.
2. Use the ***CHSPACE*** command to move the arrow from paper space to model space.
   NOTE: If the viewport requires rotation to fit the map, it is recommended to complete this procedure prior to changing the orientation of the viewport so that the arrow is truly aligned north when switched to model space. Then, if the viewport is rotated, the block will also rotate with the model.

Example of Completed Title Sheet





Section II. Notes Sheets

Procedure – File Setup

1. In the title sheet file, select the *MDT Sheet Layouts* dropdown from the *MDT Sheets* panel in the *MDT Tools* tab in the ribbon and select the *Road Layouts* button.
2. While holding ***Ctrl***, select either the ***RD-Notes-Rural*** or ***RD-Notes-Urban*** and the ***RD-Notes-Misc*** layouts based on the scope of the project. Then select ***OK*** **to add the layouts to the drawing**.
3. Explode blocks in the ***RD-Notes-Rural*** or ***RD-Notes-Urban*** layouts and edit as necessary.
   NOTE: Additional notes can be found in the ***RD-Notes.dwg*** block library.
4. If applicable, add approach tables and wetland delineation tables to the *RD-Notes-Misc* layout, following the same methods outlined in the *Summary Sheets in Autodesk* process documentation.
5. If applicable, follow the *Centerline Coordinate Tables in Autodesk* procedure for adding the table to the *RD-Notes-Misc* layout.

Procedure – Edit Title Block Sheet Description

The title block was updated with Version 2.0 of the State Kit where the sheet description placeholder text was replaced with a field that is tied to the *Sheet Set Manager*.

To edit the sheet description, follow the steps below:

1. Using the *Sheet Set Manager*, import the desired layout(s) to the project's sheet set, if not already complete.
2. Right click the layout and select ***Properties***.
3. Add an appropriate description for the sheet, such as "TITLE" for the title sheet, then select ***OK*** to exit the *Sheet Properties*.
4. The layout containing the updated description may need to be regenerated to sync the changes. Use the ***REA*** (***REGENALL***) command to update all the layouts in the drawing.

