MONTANA
Department of Transportation

RIGHT-OF-WAY PLAN SHEETS PROCEDURE

Contents

Overview

This process guides the user to create View Frame groups, Create Sheets with the appropriate file, layout, and view frame group names for R/W Plan Production. This process document also gives guidance for working within sheets, placing blocks and callout and dimension notes.

Process Provenance

- Date of development: 11/12/2025
- Revision date: *N/A*
- Application/Tool(s): *AutoCAD / Civil 3D*
- Version(s): *Civil 3D 2024*
- Environment(s): *MDT Civil 3D State Kit r2024 v2.21*
- Contact: *Open a Case*

References

Right-of-Way Title Sheet and Sheet Set Manager Procedure (need to link)

Plan Sheets Procedure

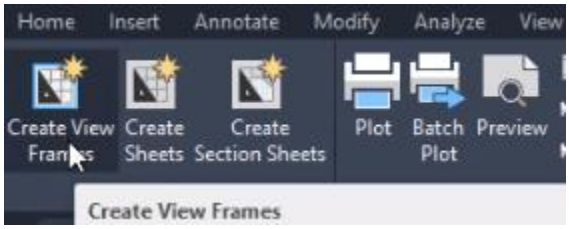
Preface

Plan sheets will be a separate file(s). The plan sheet drawing files will be created through the Sheet Set Manager/Create Sheets tools in Civil 3D. R/W strives to match the stationing of the Road Design Plan and Profile (PLP) sheets, but the sheet stationing can be adjusted as needed to encompass R/W design features. The Road Design PLP file can be viewed in Autodesk Docs/Autodesk Construction Cloud without opening the file.

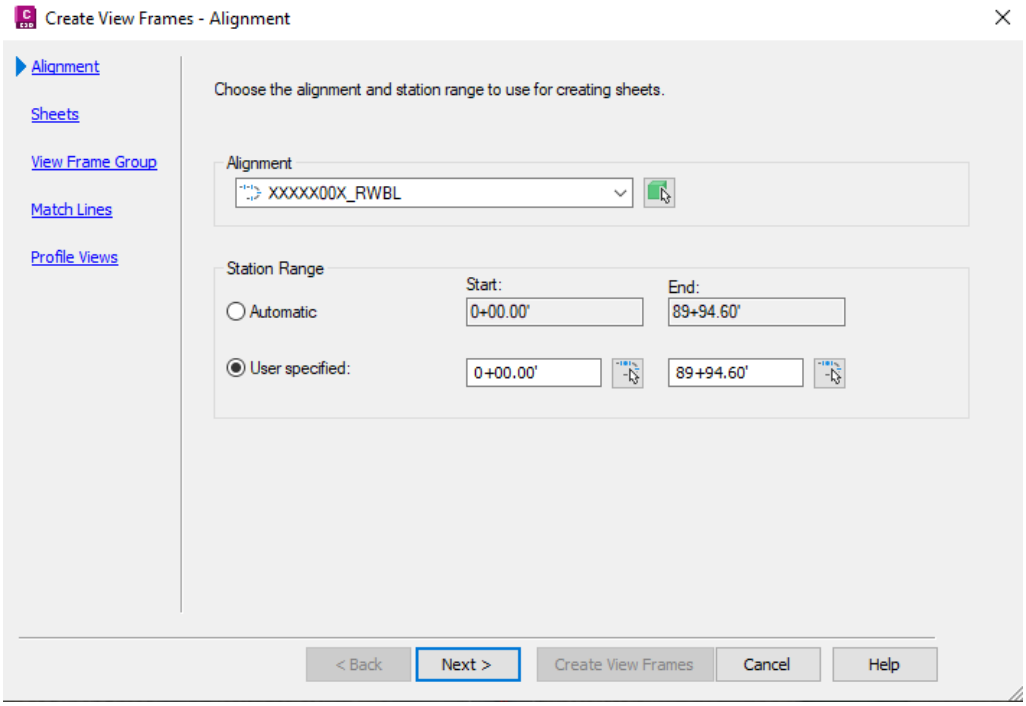
Section I. Creating View Frames in ROMAP

Create View Frames

The view frames are created in the model space of the ROMAP file. Under the Output tab, Plan Production ribbon, select Create View Frames.



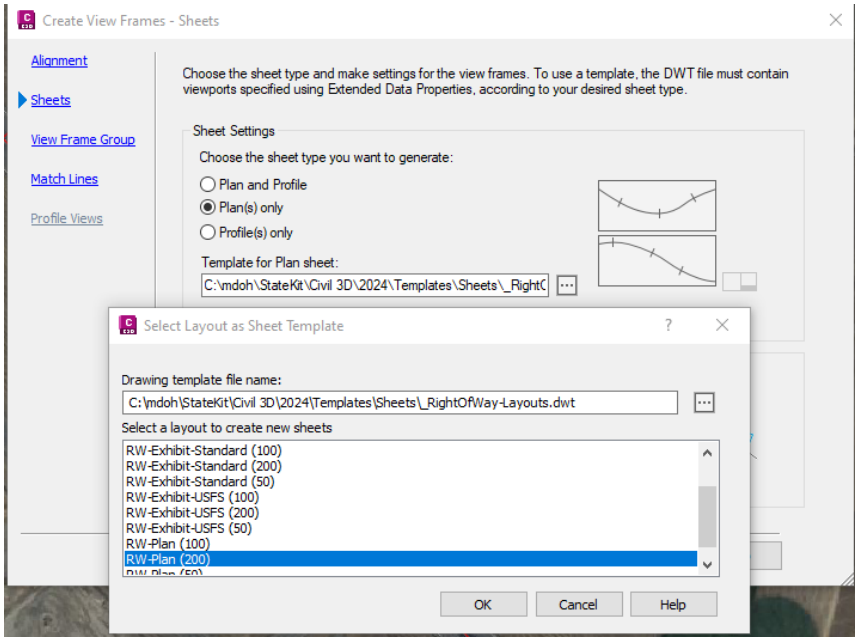
Under Alignment set the Alignment to XXXXX00X_RWBL. Set the Station Range to 'User specified'. Change the Begin Station to match the Road Design PLP sheet, click Next.



Create View Frames (continued)

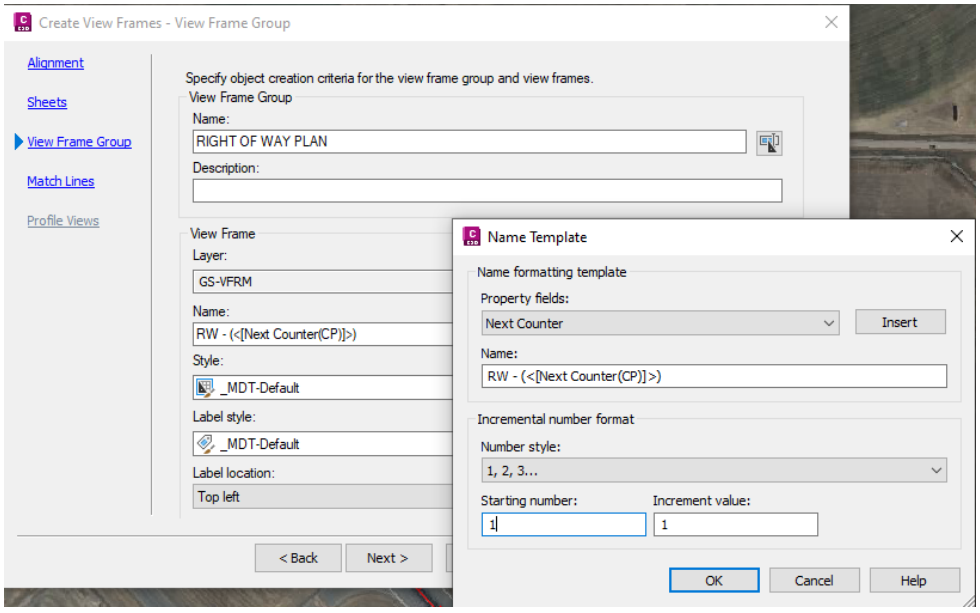
Under Sheets -> Sheet Settings, select Plan(s) only. Use the 'Template for Plan sheet:' browse to the folder: 'C:\\mdoh\StateKit\Civil 3D\2024\Template\Sheets\'.

Select 'RightOfWay-Layouts.dwt' and the correct plan scale. This needs to match the road design plan scale. View Frame Placement is Along alignment. Select Next.



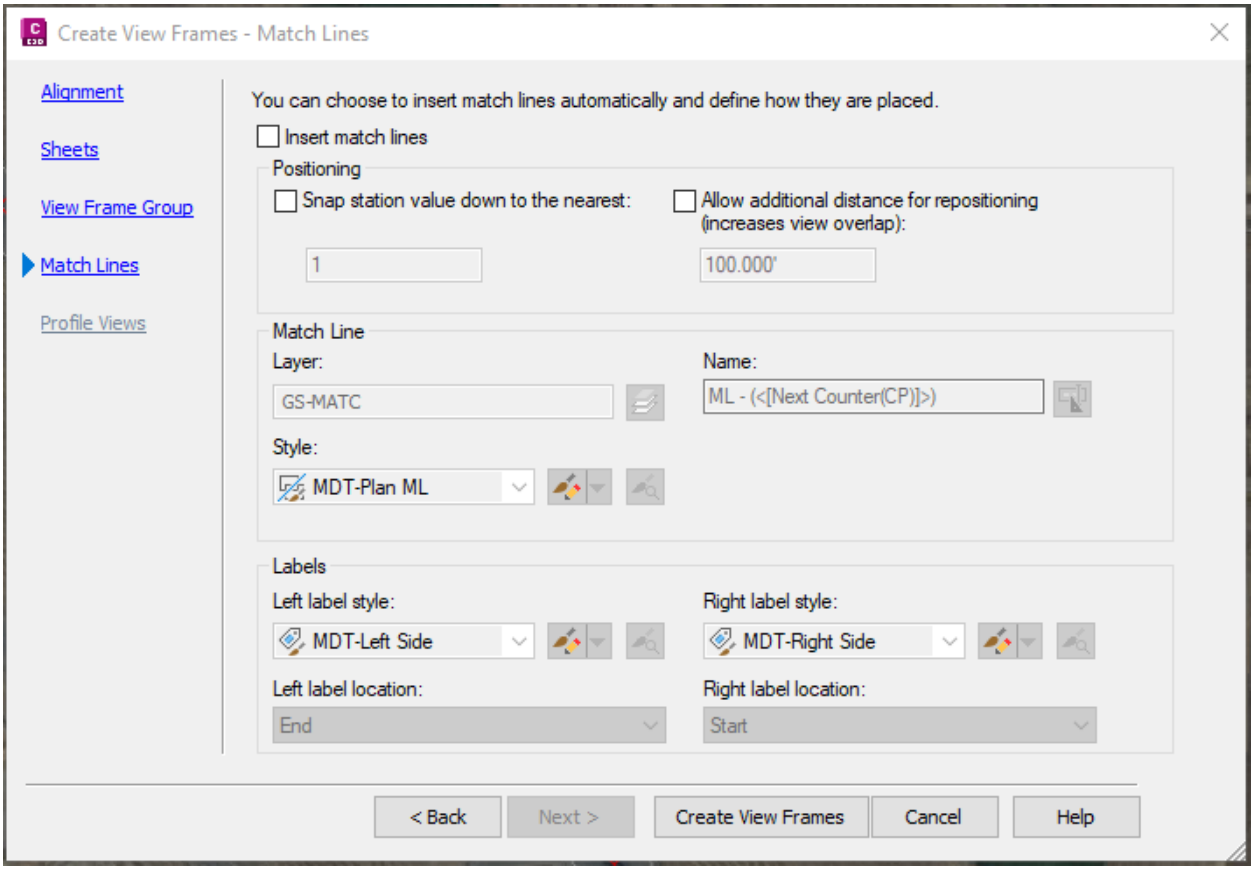
Within the View Frame Group, edit the name to be RIGHT OF WAY PLAN.

Under View Frame, select the Edit View frame name button to the right of the Name field. Delete and change the VF - (<[Next Counter(CP)]>) to RW - (<[Next Counter(CP)]>). Verify the Starting Number is 1 and the increment value is set to 1.



Create View Frames (continued)

In the Match Lines tab, deselect 'Insert match lines'. Match lines are not required for R/W Plan Production.



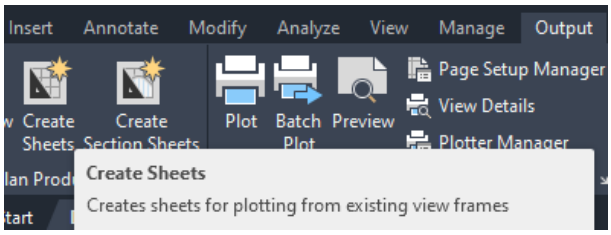
General Notes

1. View frames are 3000' long per sheet at a 1" = 200' scale.
2. There will be times that it is helpful to add an overlap between sheets to show features completely. To add a forced overlap between sheets on the Sheets tab in the Create View Frames group, select the 'Set the first view frame before the start of the alignment by:' box and add the required distance to show the desired feature in the box below. Typically that distance is between 5-100'.

Section II. Creating Plan Sheets from View Frame Group

Create Plan Sheets

Under the Output tab, Plan Production ribbon, select Create Sheets.



View Frame Group and Layouts Tab

Under View Frame Group and Layouts set the View Frame Group to RIGHT OF WAY PLAN. Set the View Frame range to All.

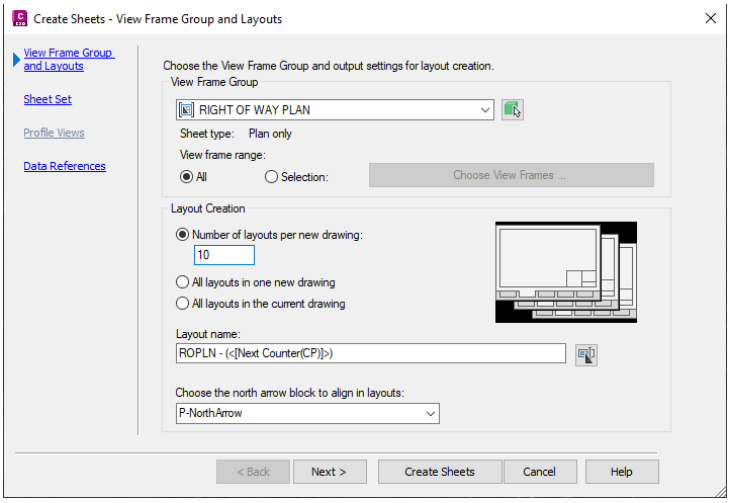
In Layout Creation, set the Number of layouts per new drawing to 10 (maximum) entered in the box. This is somewhat flexible. Eleven layouts can fit in one drawing or could be split into 6 layouts in one file and 5 layouts in another file. Too many layouts in one file will slow the file down.

Under Layout name, Change the name to ROPLN - (<[Next Counter(CP)]>) and verify that the counter starts at 3*, and increases by 1 thereafter. This will make it easier to rename the pages in the Sheet Set Manager once the sheets are added to the SSM.

*The 3 is with the assumption that there is only one Ownership Sheet, if there are multiple, add 2 to the number of ownership sheets to set as the starting number.

e.g. 2 ownership sheets, plans start at Sheet 4 (ROTTL001, ROOWN-1, ROOWN-2, ROPLN-4.

The North Arrow must be added in MODEL space in the ROMAP file. Utilizing the 'Choose the north arrow block to align in layouts:' will place the North Arrow in PAPER space only.



Sheet Set Tab

Sheet Set Group

If there is an existing Sheet Set.dst, select 'Add to existing sheet set:' and navigate to the .dst in Autodesk Docs.

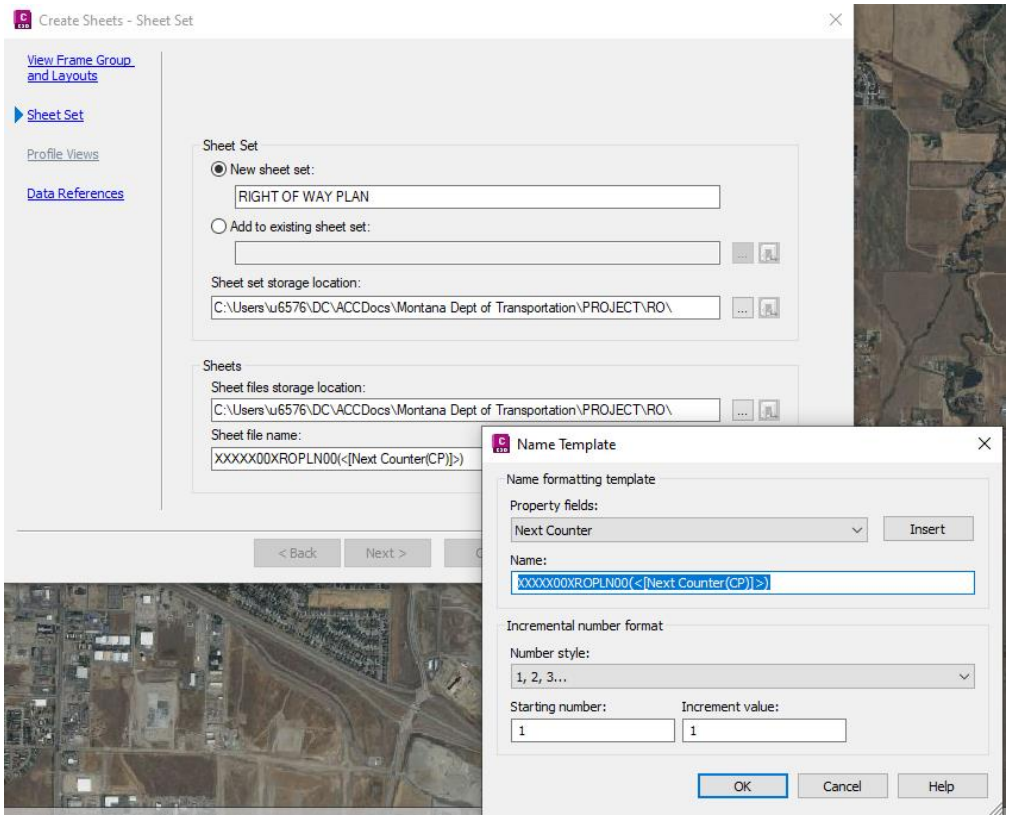
If you have not created a Sheet Set .dst, select 'New sheet set:', name and save the location of the Sheet set storage location to the Autodesk Docs Project folder. Follow the Standard Naming Convention.

Sheets Group

Verify the Sheet files storage location is set to the Autodesk Docs Project folder.

Change the Sheet file name to: 'XXXXX00XROPLN00(<[Next Counter(CP)]>)', verify the counter starts at 1 and increases by one.

Select Next.

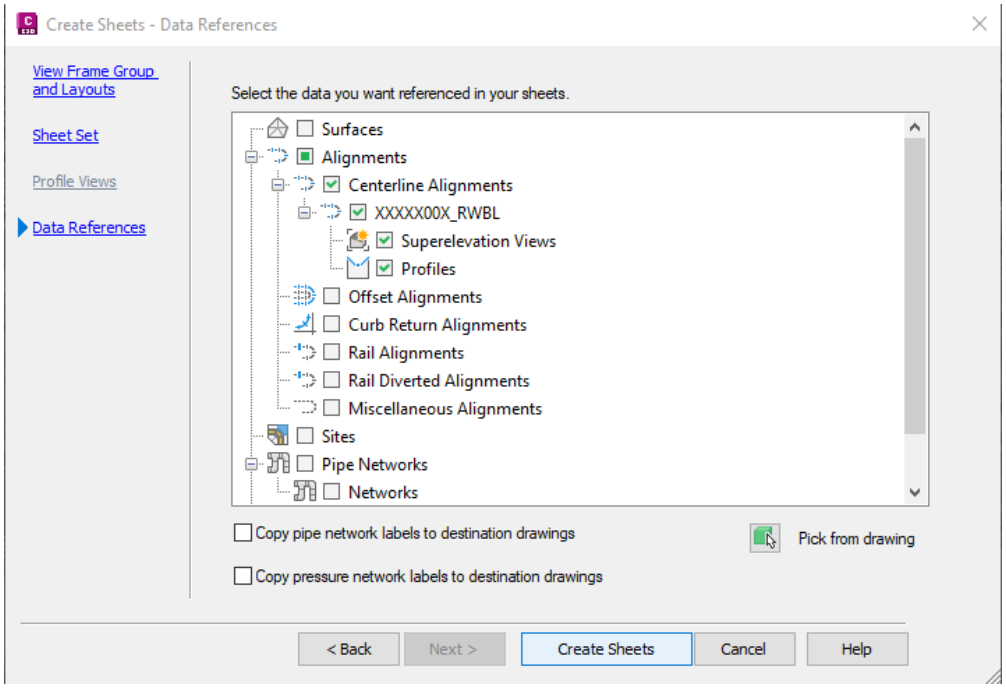


Data References Tab

Under Data Reference verify that the XXXXX00X_RWBL alignment is checked.

Do not Copy pipe network labels or pressure network labels to destination drawings.

Select Create Sheets.



Civil 3D will ask to resave the file, and the plan sheets will be created.

The plan sheet file(s) will be saved in the RO folder under the project. Open the drawing files and verify the layout tabs are correctly named ROPLN-(3*), increasing by one per sheet.

*The 3 being the number established based on the number of ownership sheets for the drawing.

Verify the annotation scale in PAPER space is correct based on the plan scaling size.

Note: Check the Xref Manager to verify that all the reference file types are set to Overlay not as Attachment. Reference files set to Attachment can cause circular references.

Section III. Add Sheets to Sheet Set Manager

Adding Sheets to SSM

Follow the ***Right-of-Way Title Sheet and Sheet Set Manager Procedure*** guidelines to create and open the Sheet Set manager.

While in an active drawing file, right click on the RIGHT OF WAY PLAN subset, select Import layout as sheet. Navigate to the Autodesk Docs RO Folder, select all ROPLN drawings, select all relevant layouts and import.

Rename and renumber the sheets accordingly.

Section IV. Working with Sheet Tools

Gray Scaling Existing Topography

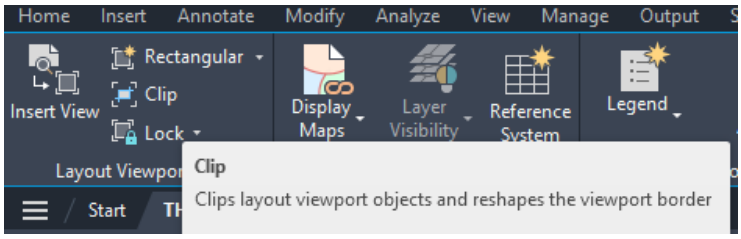
MDT Colors 250-255 plot true color, where 250 is black and 255 is the lightest gray in the group.

Open the Layer Manager, browse to the existing topography xreference file(s), select all the topography file layers, change the color to 253. Apply gray scale to other reference files as needed.

Customizing Viewports

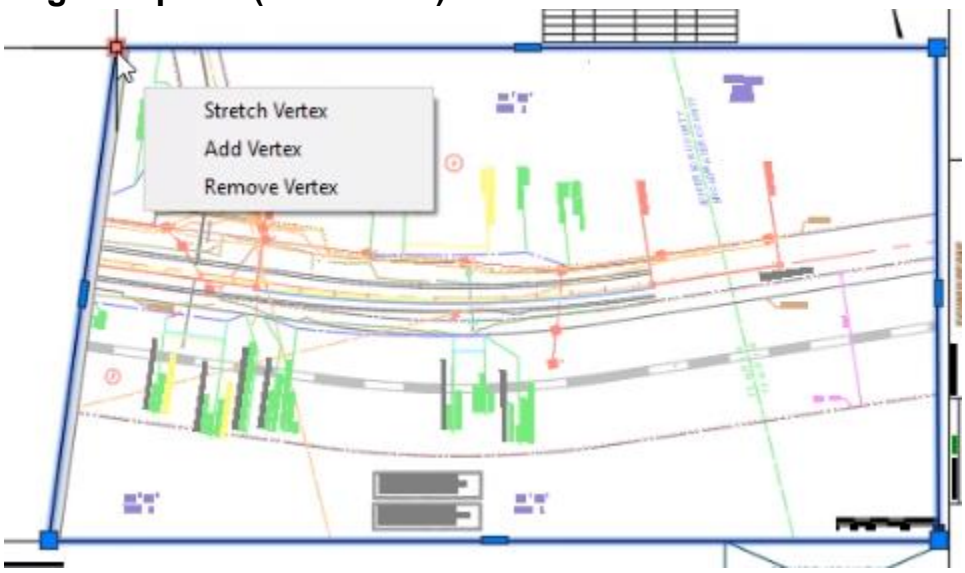
The plan sheets can be clipped on the match line, clipped to show an overlap, or clipped to expand the plan sheet.

Within the ROPLN file click on the Paper Space Layout tab, click on Clip within the Layout Viewports Ribbon on the Layout Tools tab.



Select the viewport, on the command line select Polygonal and draw a polyline around the clip area and select Close. You cannot snap exactly to the intersection of the match line and the sheet border; the polyline location will be approximate. The polyline can be edited by clicking on the vertex points to show the desired view. There may be multiple objects on top of each other. Toggle on Selection Cycling to make it easier to pick the viewport.

Customizing Viewports (Continued)



Masking Objects

Viewports are dynamic and can have more complex geometry than simple rectangles. Additional vertexes can be added to the default viewport to clip features from xrefs.

The command XCLIP clips the display of a selected xref or block reference to a specified boundary. The clipping boundary determines the portion of a xref or block instance that is hidden, either outside or inside the boundary. Type XCLIP in the command line, select new boundary, invert, and rectangular. To change the XCLIP system variable, type XCLIPFRAME in the command line. Only one clip boundary can be placed per viewport.

Value	Description
0	The frame is not visible and it is not plotted. The frame temporarily reappears during selection preview or object selection.
1	The clipped xref frame is displayed and plotted
2	The clipped xref frame is displayed but not plotted

Displaying Road Design View Frames

Road Design view frames are designed to include a plan and profile on the same size 11x17” plan sheet. Therefore, the RD Plan viewport is ½ the vertical height of a RO Plan viewport. For R/W labels and linework to display correctly for RD, RO needs to ensure that all relevant labels are within the RD view frames.

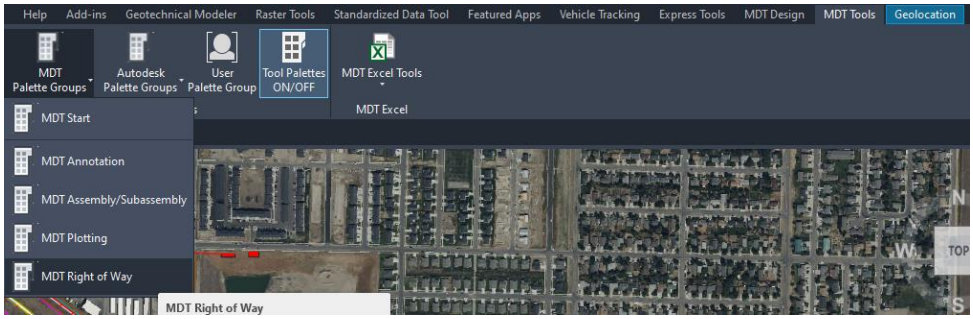
To View the view frames, Data Shortcut the RD view frames in the ROMAP Drawing. If the RD Viewports are added to the ROMAP prior to plan production, verify that while creating sheets that you are using the RO view frame group. View frame groups can be promoted into the ROMAP to control the color/plot status of the RD view frames.

Section V. Placing Blocks

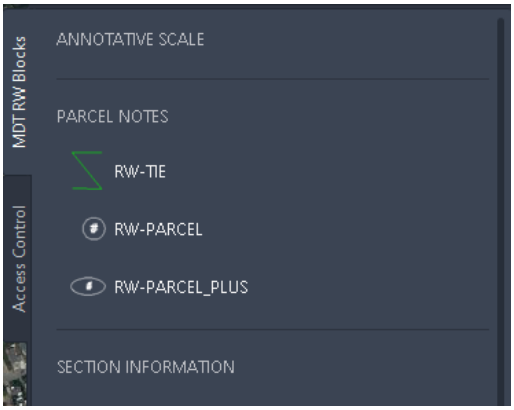
Preface

All Blocks needed for R/W Plan Production must be placed in model space of the ROMAP drawing.

Blocks are in the MDT Tools Ribbon, MDT Palette group, MDT R/W Palette.



Blocks with associated attributes will prompt during placement of the block to populate the fields of the block. When placing blocks with associated attributes, do not copy blocks, use the R/W Block Palette in the Tool Palettes only.



Both Access Control and MDT RW Blocks are on the same Tool Palette.

Creating and Populating Section Tie Blocks

From the 'MDT Right of Way' Block palette, insert the RW-CORTIE into the model space in the ROMAP drawing. Add the tie information using the text editor in the 'Edit Attributes' window to add the bearing, distance, and the corner tying the section monument to the RWBL alignment.

For Lines containing elevations, the command OSNAPZ system setting will disregard the vertical distance between two points and place the line connecting the two points on a zero-elevation plane. OSNAPZ Has two settings, 0 and 1. 0 is default and keeps the vertical distance and 1 disregards the vertical distance. For R/W Plan Production, Section Tie Distances are 2D grid distances.

Calculating Section Tie Distance

Draw a line on layer VL-PLSS-TIEL-NPLT from the section corner monument to the R/W baseline at the intersection of the found section line and the RWBL. Use the Apparent Intersection snap to snap to the intersection of the r/w baseline and the section line. The Apparent Intersection snap works well when lines have elevations and cross on different planes. On the Labels & Tables group within the Annotate tab of the ribbon select Line and Curve and then select Add Single Segment Line/Curve Label.

Click on each end of the line to place the distance and bearing label. Leave this label on layer VL-PLSS-TIEL-NPLT in the file for checking. The VL-PLSS-TIEL-NPLT is defaulted to not plot on plan sheets.

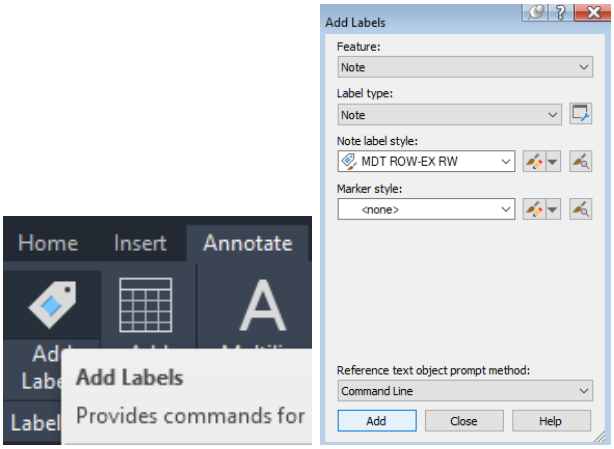
Section VI. Existing R/W & Easement Callouts and Dimension Notes

All Labels and Notes must be placed in the ROMAP file.

Existing R/W and Easement Callouts

Existing Right of Way and Easements callouts will be placed as labels.

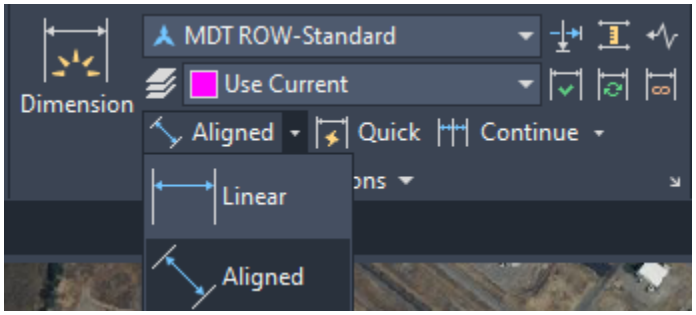
To add labels, from the Annotate Tab, Labels and Tables Group, select the Add Labels Tag.



In the Add Labels dialog window, set the feature to note, label type to Note and in the Note label style, select the style accordingly. Verify the marker style is set to None. Select Add and snap to the existing R/W line. Move and rotate the label by selecting it and grabbing the square grip.

Placing Dimensioning Labels

From the Annotate tab of the Ribbon in the Dimensions group, change the dimension style to MDT ROW-Standard. Change the dimension type to Aligned.



The default layer is set to Use Current, however a layer can be set from the dropdown for all dimensions created. Verify dimensions are placed on the correct layer.