

PLAN AND PROFILE SHEETS IN AUTODESK

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Overview

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

Process Provenance

- Date of development: 2/14/2025
- Revision date: N/A
- Application/Tool(s): Autodesk Civil 3D
- Version(s): 13.6.1963.0 Civil 3D 2024.4.1
- Environment(s): MDT Civil 3D State Kit r2024 v2.1.0
- Author: MDT EngOps Workflow Steering Committee

Statement of Need

Though workflows specific to plan and profile sheets were covered in the Civil 3D production training classes, the workflows did not meet MDT standards for plan production. 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

Import NAIP TIFF Imagery into Civil 3D

Import Aerial Survey TIFFs into Civil 3D

Process Description and Examples Section I. Corridor Display File

Procedure – File Setup

 Create a new file using the *design-start.dwt* template. Save it as [UPN#]RDDISCRR.dwg (for example, 9555000RDDISCRR.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.

<u>NOTE</u>: If there is a detour on the project, create a second corridor display file for showing the temporary construction limits and follow the steps below.

Civil 3D 2024								
Open								
New	~							
TEMPLATES								
design-start.dwt								

- 2. Assign the project's coordinate system to the drawing according to the <u>Coordinate System Settings</u> support document.
- 3. Set the Working folder to the project's Project Files folder and set the Data Shortcuts project folder if necessary. Associate the project to the current drawing. Then create a data reference to the corridor(s) within the file. Set the corridor style to **Standard**.

Create Corridor Reference X
Source Corridor: 9555000_RD_CR_ML1.24
Name:
9555000_RD_CR_ML1.24
Description:
Corridor style:
Standard V
Corridor layer:
C-CRDR-9555000_RD_CR_ML1.24
When you create a reference to a corridor, references are automatically created to its baselines.

- 4. The corridor data reference will also bring in the alignment from which the corridor is based, which will not be displayed in this file.

 - b. Select the alignment, right click, and select *Alignment Properties*. In the *Alignment Properties* menu, set the alignment style to *MDT-No Display*.

🔝 Alignme	nt Properties - 9	555000RD	ALN-PROP-ML	
Information	Station Control	Masking	Point of Intersection	on Cons
Name:				
9555000R	DALN-PROP-ML			
Description	:			
New cente angles.	erline alignment (4	4/27/23) co	ntaining <mark>deflection</mark>	~
				\sim
Object st	yle			
MI I	DT-No Display		~ *	6

 Select the corridor, right click, and select *Corridor Properties*. Within the Corridor Properties menu, select the *Codes* tab and change code set style to *MDT*-*Corridor-Const Limits* or *MDT 2022-Corridor-Plan* for corridors that were not updated to utilize the 2024 MDT State Kit subassemblies and assemblies.

Static Corridor Properties - 9555000_RD_CR_ML1.24											
Information	Parameters	Codes	Feature Lines	Surfaces							
Code set	Code set style:										
🛃 MDT	F-Corridor-Const	Limits									
Name			Description	Style							
. <u>.</u>	Link										
⊡ •] ∃	Point										
÷. 🗎	Shape										

<u>NOTE</u>: These styles will not show transition lines between cut and fill due to limitations with Civil 3D styles. The corridor should resemble something similar to the one in the image below, with the EOS and ditch bottom lines represented.



6. Use the *PURGE* command to remove unused blocks, dimension styles, layers, linetypes, multileader styles, and text styles from the drawing like shown in the image below. When purging, use the *Purge Checked Items* button. Then use the command *MDTDWGCLEAN* to clean the file. This command performs an audit on the file to fix errors within the drawing.

[Purge		×
Purgeable Items	<u>F</u> ind Non-Pu	rgeable Items
Named Items Not Used	Et.	Preview 👻
Alignment of the second s	e s es de	Options ✓ □ Confirm each item to be purged ✓ ☑ Purge nested items ✓ Purge Unnamed Objects ✓ □ Zero-length geometry Empty text objects ☑ Orphaned data ✓
	E	urge Checked Items Purge <u>A</u> ll Cl <u>o</u> se <u>H</u> elp

7. Save the file and close it.*

***IMPORTANT NOTE:** If/when the corridor(s) changes affect construction limits, the designer must open this file and synchronize the data reference (right click the corridor in the *Prospector* tab within the *Toolspace* palette and select **Synchronize**) to have the changes reflected in the plan and profile (PLP) file. The file must then be saved again, and the external reference to the DISCRR file within the PLP file may need to be reloaded in the *External References Manager* if the changes do not automatically sync upon reopening the PLP file.

Additionally, when these significant changes are updated in the display file, <u>notify</u> the Right-of-Way designer for the project that these changes have been reflected in the display file, as the construction limits they utilize for their design are based on this file.

Section II. Surface Display File

Procedure – File Setup

- Create a new file using the *design-start.dwt* template. Save it as [UPN#]RDDISESU.dwg (for example, 9555000RDDISESU.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 <u>Coordinate System Settings</u> support document.
- 3. Create a data reference to the existing surface. Set the surface style to *MDT Exist-Contours 1-5.*

ource surface:	Surface layer:						
555000CSDTM001	C-SURF-9555000CSDTM001						
Properties	Value						
Information							
Name	9555000CSDTM001						
Description	Description						
Style	MDT Exist-Contours 1-5						
Render Material	ByLayer						

 Open the Layer Properties Manager (Command: LAYER) and locate the V-SURF-MAJR and V-SURF-MINR layers. Set the transparency to 75 for each layer by double clicking the value in the transparency column for each layer.

Layer Transparency		×				
Transparency value (0-90): 75 OK Cancel	~					
S., Name 🔺 O. F	L P Color	Linetype	Lineweight	Transparency	N.	Description
🛩 V-SURF-MAJR 👘 🌻	🖲 🖬 🖶 📒 51	Continu	0.014"	75	15	Survey: Surface: Major (Contour)
🖉 V-SURF-MINR 🎈 🔅	🖲 🖬 🖶 🔲 135 i	Continu	0.006"	75	35	Survey: Surface: Minor (Contour)

5. Repeat steps 6 and 7 from Section 1.

Section III. Imagery Display File

Procedure – File Setup

- Create a new file using the *design-start.dwt* template. Save it as [UPN#]RDDISIMG.dwg (for example, 9555000RDDISIMG.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 <u>Coordinate System Settings</u> support document.
- 3. Follow the steps outlined in the tip documents <u>Import NAIP Imagery into Civil 3D</u> or <u>Import Aerial Survey TIFFs into Civil 3D</u> if imagery from Photogrammetry is available for the project to insert the imagery into the file. Transform the raster from color to grayscale so that the imagery will properly plot in grayscale.
- 4. Repeat steps 6 and 7 from Section 1.

Section IV. PLP Sheet File

NOTE: This process assumes that a sheet set file containing plan-related layouts (i.e., title sheets, notes sheets, typical sections sheets, summary frames sheets) has already been created for the project. If a sheet set has not yet been created, one must be created prior to the <u>Create Sheets</u> procedure.

Procedure – File Setup

- Create a new file using the *design-start.dwt* template. Save it as [UPN#]RDPLP001.dwg (for example, 9555000RDPLP001.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 <u>Coordinate System Settings</u> support document.
- 3. *Attach* the *RDDISCRR*, *RDDISESU*, and *RDDISIMG* files created from Sections I-III via the *External References* palette. Attach the *CSMAP*, *ENWSU*, and *ROMAP* files for the project, if applicable. Ensure that the attachment type is Overlay and that the scale, insertion point, and rotation are all unchecked when importing the display files. Ensure that the path is relative.
- Create a reference to the mainline alignment. Set the alignment style to MDT ALGN-Plan CL and the alignment label set to MDT ALGN-Plan Label Set (200 Scale)

Create Alignment Reference X
Source alignment: 9555000RDALN-PROP-ML
Site:
🗟 <none> 🗸 📑</none>
Name:
9555000RDALN-PROP-ML
Description:
New centerline alignment (4/27/23) containing deflection angles.
Alignment style:
🎲 MDT ALGN-Plan CL 🗸 🖌 🔨
Alignment layer:
C-ALGN-GEOM-9555000RDALN-PROP-ML
Alignment label set:
🥏 MDT ALGN-Plan Label Set (200 Scale) 🗸 🏹 📈
OK Cancel Help

 Create references to the design profile and the existing ground surface profile. Use the *MDT PROF-Plan* profile style and *MDT PROF-Plan Labels (200 Scale)* label set for the design profile. Use the *MDT PROF-Existing* profile style and _MDT-No Labels label set for the existing ground surface profile.

Create Profile Reference X	🔛 Create Profile Reference 🛛 🗙
Source profile: 9555000RDPRO-PROP-ML	Source profile: EX_GRND_ML
Source alignment: 9555000RDALN-PROP-ML	Source alignment: 9555000RDALN-PROP-ML
Name: 9555000RDPRO-PROP-ML	Name: EX_GRND_ML
Description:	Description:
Profile created from file using best fit profile edits on PROP_Mainline alignment.	Existing ground profile for 9555000RDALN-PROP-ML alignment.
Profile style:	Profile style:
🔰 MDT PROF-Plan 🗸 🖌	MDT PROF-Existing V
Profile layer:	Profile layer:
C-PROF-9555000RDPRO-PROP-ML	C-PROF-EX_GRND_ML
Profile label set:	Profile label set:
MDT PROF-Plan Labels (200 Scale) 🗸 🏹	MDT-No Labels V
OK Cancel Help	OK Cancel Help

- 6. Add bearing and curve labels to the alignment.
 - a. Select the *Add Labels* tag button from the *Labels & Tables* panel in the *Annotate* tab in the ribbon.



b. Set the *Feature* to *Alignment* and the *Label type* to *Multiple Segment*. Set the following labels:

Line label style: *MDT-Bearing Only* Curve label style: *MDT ALGN-Design Simple Curve* Spiral label style: *MDT ALGN-Design Spiral Curve*

Add Labels
Feature:
Alignment 🗸
Label type:
Multiple Segment 🗸 🏳
Line label style:
🖉 MDT-Bearing Only 🛛 🗸
Curve label style:
🔗 MDT ALGN-Design Simple Curve 🗸 🏹 🗾
Spiral label style:
🔗 MDT ALGN-Design Spiral Curve 🗸 🏹 🗾
Table Tag Numbering
Reference text object prompt method:
Command Line 🗸
Add Close Help

- Create a reference to the existing pipe network as well as the proposed pipe network, if available and applicable. Match the parts lists to those of the source files. Set labels to *<none>*.
- 8. Use the *Pipe Networks* tab in the *Project Explorer* to set the pipe style for the pipes to *MDT DRNG E-Double Line* for existing pipes and *MDT DRNG-Double Line* for proposed pipes. To set the style for all the pipes at once, select appropriate pipe network, select the *Pipes* tab, Shift + Select all the pipes, then right click and select *Set Pipe Style(s)*.

Pipe Network Name	Description	Parts List	Structures	Pipes	Default Reference	Alignment	Default	Referen	ce Surface	Structure Plan Label Style	Pipe Plan Label S	style Structure P	lan Layer
The Existing Storm Ne	twork <none></none>	MDT DRNG E-Parts List	86	45	9555000RDALN-PR	OP-ML	<none></none>		_	MDT-No Labels	<none></none>	C-STRM-ST	RC
Structures (86)	🥏 Pipes (45)	🛱 Pipe Run (0)											
Pipe Name Des	cription	Pipe Style		Start Inve	ert End Invert	Slope	Start Stru	cture	End Structu	re Start Easting	Start Northing	End Easting	End No 1
Pipe - (24) MD1	T RCP	MDT DRNG E-Doub	e Line	2424 70	cn 2421 126	0 17 9/	Christian	- (49)	Structure -	(50) 1562506.9660	1260688.4890	1562610.9330	126055
💼 Pipe - (25) MD1	T RCP	MDT DRNG E-Doubl	e Line	Swap Pa	art(s)			- (51)	Structure -	(52) 1562861.6370	1261207.5020	1562905.4230	126127
💼 Pipe - (26) MD1	I RCP	MDT DRNG E-Doub	e Line	Set Dec	cription(s)			- (53)	Structure -	(54) 1562943.7770	1261211.4680	1562985.8480	126128
💼 Pipe - (29) MD1	I RCP	MDT DRNG E-Doub	e Line	Serbes	enpelon(s)		_	- (59)	Structure -	(60) 1563231.7440	1261849.4340	1563312.0970	126179
Pine - (30) MD1	I RCP	MDT DRNG E-Doub	e Line	Set Pipe	e Style(s)			- (61)	Structure -	(62) 1563708.8150	1262650.1330	1563782.8430	126260
<				Set Rule	e Set Style(s)								>

Procedure – Create View Frames

1. Select *Create View Frames* from the *Plan Production* panel in the *Output* tab in the ribbon.



 In the Alignment section of the Create View Frames wizard, accept the default settings, which should have the mainline alignment selected and the station range as Automatic. Then select Next >.

Create View Frames	- Alignment			×
Alignment Sheets	Choose the alignment and sta	ation range to use for creating sh	eets.	
View Frame Group	Alignment			
Match Lines	555000RDALN-PR0	OP-ML ~	_ ₿	
Profile Views	Station Range	Start:	End:	
	 Automatic 	474+78.33'	944+42.13'	
	O User specified:	474+78.33'	944+42.13	
	< Back	Next > Create View	w Frames Cancel He	۱p

 In the Sheets section of the Create View Frames wizard, select Plan and Profile for the Sheet settings, and the View Frame Placement to Along alignment. The Template for the Plan and Profile sheet should be set to the following location, with the MDT_PlanProfile_200 layout selected:

C:\MDOH\StateKit\Civil 3D\2024\Templates\Sheets\PIn-Pro-layouts.dwt. Then select **Next >**.

Create View Frame	es - Sheets	×
Alignment Sheets	Choose the sheet type and make settings for the view frames. To use a template, the DWT file must contain viewports specified using Extended Data Properties, according to your desired sheet type.	
View Frame Group	Sheet Settings Choose the sheet type you want to generate:	
<u>Match Lines</u> Profile Views	Plan and Profile Plan(s) only Profile(s) only Template for Plan and Profile sheet: [remplates\Sheets\PIn-Pro-layouts.dwtIMDT_PlanProfile_200]	
	View Frame Placement Along alignment Rotate to north Set the first view frame before the start of the alignment by: 100.000'	
	< Back Next > Create View Frames Cancel Help	

 In the View Frame Group section of the Create View Frames wizard, name the view frame group [UPN#]_RD_VF_[descriptor]. Then set both the style and label style to MDT-Default. Then select Next >.

Create View Frames	- View Frame Group	×
Alignment Sheets View Frame Group Match Lines	Specify object creation criteria for the view frame group and view frames. View Frame Group Name: 9555000_RD_VF_MAINLINE Description:	
<u>Profile Views</u>	View Frame Layer: GS-VFRM Name: VF - (<[Next Counter(CP]]>) Style: Image:	
	< Back Next > Create View Frames Cancel Help	

5. In the Match Lines section of the Create View Frames wizard, check the Snap station value down to the nearest and set the value to 25 feet. Check Allow for additional distance for repositioning and start with a value of 100 feet. Enabling this allows users to move the match lines and it is recommended for projects with several curves. For straighter alignments, this setting may not need to be enabled. Then select Next >.

Create View Frame	es - Match Lines	×
<u>Alignment</u> Sheets	You can choose to insert match lines automatically and define how they are placed. ✓ Insert match lines	
View Frame Group	Snap station value down to the nearest: Allow additional distance for repositioning (increases view overlap):	
Profile Views	Match Line	
	Layer: Name: GS-MATC Image: ML - (<[Next Counter(CP)]>) Image: ML - (<[Next Counter(CP)]>) Style: Image: ML - (<[Next Counter(CP)]>) Image: ML - (<[Next Counter(CP)]>)	
	₩DT-Plan ML ✓	
	Labels Left label style: Image: Might label style: Image: Might label style: Image	
	Left label location: Right label location: End ✓ Start ✓	
	< Back Next > Create View Frames Cancel Help	_

 In the Profile Views section of the Create View Frames wizard, set the Profile View Style to MDT PROF-Plan and the Band Set Style to MDT PROF-Plan. Then select Create View Frames.

Create View Frame	s - Profile Views	×
<u>Alignment</u> <u>Sheets</u>	The following profile view information is required to determine the distances available in viewports.	
View Frame Group	Profile View Style	
Match Lines	Select profile view style:	
Profile Views		
	Band Set Select band set style:	
	< Back Next > Create View Frames Cancel Help	
	< Back Next > Create View Frames Cancel Help	

7. After the view frames have been drawn, *Create a data shortcut* to the view frame group.

C	Create Data Shortcuts				
	Share	Data			
	Selected objects will be accessible to all users who point to the same working folder. These shortcuts are available in the Prospector. When you create a data shortcut of a corridor, data shortcuts are automatically created for its baselines.				
г					_
	Object		Status	Description	
	[F] 💌	View Frame Groups			
	[b _[퀩 🗹 9555000_RD_VF_MAINLINE	To be added		

Procedure – Create Sheets

1. Select *Create Sheets* from the *Plan Production* panel in the *Output* tab in the ribbon.



- 2. In the *View Frame Group and Layouts* section of the *Create Sheets* wizard, set the following, then select **Next** >:
 - View frame range: All
 - Layout Creation: All layouts in the current drawing
 - Layout name: [UPN#]RDPLP<[Next Counter]>
 - Set the number style to 001, 002, 003 within the Name Template popup.
 - North arrow block to align in layouts: **P-NorthArrow**

Create Sheets - View	Frame Group and Layouts	×				
View Frame Group and Layouts	Choose the View Frame Group and output settings for layout creation. View Frame Group					
<u>Sheet Set</u>	9555000_RD_VF_MAINLINE					
Profile Views	Sheet type: Plan and Profile					
Data References	View frame range: Choose View Frames All O Selection: Choose View Frames 					
	Layout Creation Number of layouts per new drawing: 1 All layouts in one new drawing All layouts in the current drawing					
	Layout name: 9555000RDPLP<[Next Counter]>					
	Choose the north arrow block to align in layouts:					
P-NorthArrow ~						
	< Back Next > Create Sheets Cancel Help					

 In the Sheet Set section of the Create Sheets wizard, Select Add to existing sheet set and navigate to the project's sheet set file on BIM 360/ACC. Then select Next >.

🔝 Create Sheets - Sheet Set		×
View Frame Group and Layouts		
Sheet Set		
Profile Views	et	
O Net	w sheet set:	
Data References 99	555000_RD_VF_MAINLINE	
 Add 	to existing sheet set:	
95	555000RDPRE001_doc	
Sheet	set storage location:	
C:\Us	ers\u5451\DC\ACCDocs\Montana Dept of Transportation\9555000 - Carter - South	
Sheets		
Sheet	iles storage location:	
C:\Us	ers\u5451\DC\ACCDocs\Montana Dept of Transportation\9555000 - Carter - South 🔝	
Sheet	ile name:	
<[View	r Frame Group Name(CP)]> - (<[Next Counter(CP)]>)	
	< Back Next > Create Sheets Cancel Help	

4. In the *Profile Views* section of the *Create Sheets* wizard, select *Align profile and plan view at start,* then select *Choose settings* for the *Other profile view options*. Then select *Profile View Wizard*.

Create Sheets - Profil	le Views	×
View Frame Group and Layouts Sheet Set Profile Views Data References	The profile view and band set can only be changed during view frame creation. You can choose other profile view settings. Profile view settings Profile view settings Profile view settings MDT PROF-Plan Band set to be used: WDT PROF-Plan Other profile view options Get other settings from an existing profile view: Get other settings: Profile View Wizard Align views Align profile and plan view at start Align profile and plan view at center Align profile and plan view at end	
	<pre>< Back Next > Create Sheets Cancel Help</pre>	//

 In the Profile View Height section of the Create Multiple Profile Views wizard, change the Profile view datum by to Mean elevation by selecting it from the dropdown. Then select Next >.

eneral	Profile view height	Minimum:	Maximum:
ation Range	O Automatic	**Varies**	**Varies**
ofile View Height	User specified	100.000'	Profile view datum by: Mean elevation
ofile Display Options	Solit profile view		
e/Pressure Network	First split view style:		Split station:
ata Bands	🔛 _MDT-Default	 	Exact station V
rafia Hatch Options	Intermediate split view style:		Datum option:
one nater options	MDT-Default	Y ▲	Exact elevation V
Iultiple Plot Options	Last split view style:	1	
	_MDT-Default		
			4.60 7.00 6.00

6. In the *Profile Display Options* of the wizard, set the style for the proposed profile to *MDT PROF-Plan* and its label style to *MDT-PROF-Plan Labels (200 Scale)* and the existing ground profile style to *MDT PROF-Existing* and its label style to *____MDT-No Labels*. Then select *Next* >.

Create Multiple Profile Views	- Profile Display Options							×
General	Specify profile display options	•						
Station Range	Name	Style	Override	. Labels	Alignment	Station		Ele
			_			Start	End	Min
Profile View Height	9555000RDPRO-PROP-ML EX_GRND_MI	MDT PROF-Plan MDT PROF-Existing	Not	MDT PROF-Plan Labels (200 MDT-No Labels	9555000	484+78.33	934+42.13 944+42.13	334 331
Profile Display Options								
Pipe/Pressure Network								
Data Bands								
Profile Hatch Options								
Multiple Plot Options								
	<							
			< Bac	k Next > Finis	h	Cancel	Help	

7. In the *Pipe/Pressure Network* section of the wizard, expand the pipe network and uncheck Yes for all the structures, so that only the pipes will be drawn in the profile views. Then select Next > three times to accept the defaults for Data Bands and Profile Hatch Options, stopping at the Multiple Plot Options section.

🔛 Create Multiple Profile Vie	ws - Pipe/Pressure Network		×
Convert.			
General	Select parts from screen		
Station Range	Select networks to draw in profile view:		
	Name	Select	
Profile View Height	- O Pipe - (41)	✓ Yes	
Profile Display Options	🥏 Pipe - (42)	Ves	
	- 🥟 Pipe - (43)	Ves	
Pipe/Pressure Network	- 🧭 Pipe - (44)	Ves	
Data Bands	- 🥏 Pipe - (45)	Ves Yes	
	- 📿 Pipe - (46)	✓ Yes	
Profile Hatch Options	🥏 Pipe - (47)	Ves	
Multiple Plot Options	- 📿 Pipe - (49)	Ves	
		Ves	
		Ves	
	👸 Structure - (26)	No	
	Structure - (25)	□ No	
	- 🛱 Structure - (27)	🗆 No	
	🛱 Structure - (29)	No No	
	Structure - (28)	No No	
	🛱 Structure - (30)	□ No	
	Structure - (19)	No No	
	- 🛱 Structure - (21)	No No	
	🛱 Structure - (20)	□ No	
	Show only parts selected to draw in profile view		
		< Back Next > Finish	Cancel Help

8. In the *Multiple Plot Options* section of the wizard, set the draw order to **By rows** and set the *maximum in a row* to **6** and set the *start corner* to **upper left** so that the profile views are arranged from top to bottom and left to right. Then select **Finish** to exit the *Create Multiple Profile Views* wizard and return to the *Create Sheets* dialog box.

Create Multiple Profile Views	- Multiple Plot Options		×
General Station Range Profile View Height Profile Display Options Pipe/Pressure Network Data Bands Profile Hatch Options Multiple Plot Options	Draw order	Gap between adjacent profile views Row: 200.000' Column: 200.000'	
		< Back Next > Finish Cancel	Help

9. In the *Create Sheets* wizard, select *Create Sheets*. The program will pop up a warning indicating that the drawing will be saved in order to proceed. Select *OK*.

View Frame Group and Layouts The profile view and band set can only be changed during view frame creation. You can choose other profile view settings.	
Sheet Set Profile view settings Profile view style to be used: Image: Set in the se	
Data References Band set to be used: Image: WDT PROF-Plan	
Other profile view options Get other settings from an existing profile view: Choose settings: Brefile View Witand	
Align views Align profile and plan view at start Align profile and plan view at center	
O Align profile and plan view at end	

10. When prompted in the command line, click to select a location, ideally to the right of the model, in model space to draw the profile views. The profile views will be drawn, and the plan and profile layouts will be created.

11. Each profile view will need the pipe network styles to be overridden from the plan view. Right click a profile view, select *Profile View Properties*, then select the *Pipe Networks* tab. Shift + Select all of the pipes, and select the style override dropdown for one of the pipes. For existing pipes, set the style to *MDT DRNG E-Pipe Crossing Pipe*. For proposed pipes, set the style to *MDT DRNG-Pipe Crossing Pipe*. Repeat for each profile view in the drawing.

		Draw	Description	Laver	Style	Style Override
STR Exis	sting Storm Network					
0	Pipe - (1)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
-0	Pipe - (2)	✓ Yes	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (3)	Yes	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (4)	Yes	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (5)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
-0	Pipe - (7)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (8)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (9)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (10)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (11)	Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (12)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (13)	🗹 Yes	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (14)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (15)	Ves	Concrete Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (18)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (19)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (20)	Ves	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (21)	Ves	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (22)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (23)	Ves	MDT RCP	C-PROF-CLVT	MDT STRM-Single Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (24)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (25)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (26)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (29)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (30)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (31)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
- 0	Pipe - (32)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (33)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (34)	Ves	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (35)	Ves	Corrugated Metal Pipe	C-PROF-CLVT	MDT DRNG E-Single Line	MDT DRNG E-Pipe Crossing Pipe
	Pipe - (36)	Ves 🗹	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (37)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (38)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
0	Pipe - (39)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe
📿	Pipe - (40)	Ves	MDT RCP	C-PROF-CLVT	MDT DRNG E-Double Line	MDT DRNG E-Pipe Crossing Pipe

12. To ensure that the transparency that was set in both the imagery and surface display files will plot correctly from the PLP file, the *Plot transparency* option must be checked on for each sheet's plot settings. Right click a layout, then select *Plot* to access the layout's plot settings. Check the *Plot transparency* box in the *Plot options* section, then select *Apply to Layout*, then *OK* to close out of the *Plot* settings. Repeat for each layout.

Page Setup Manager		
Plot		
🖶 Publish Selected Layouts		
Drafting Standard Setup		
Import Layout as Sheet		
Export Layout to Model		
🚰 Dock above Status Ba	ar -	
• 🎽 Dock Inline with Sta	tus Bar	
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Plot - 17 9555000RDPLP001		×
Page setup		Plot style table (pen assignments)
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Printer/plotter		Shaded viewport options
Name: MDT PDF (General Documentation).pd	:3 ~ Properties	Shade plot As displayed <
Plotter: DWG To PDF - PDF ePlot - by Autodesk		Quality Normal 🗸
Where: File		DPI 100
Description:	17.0"	Plet estima
Plot to file	PDF Options	Plot in background
		✓ Plot object lineweights
Paper size	Number of copies	Plot transparency
ANSI full bleed B (11.00 X 17.00 Inches)		Plot with plot styles
Plot area	Plot scale	Plot paperspace last
What to plot:	Fit to paper	Hide paperspace objects
Layout 🗸	Scale: 1:1 v	Plot stamp on
Plot offset (origin set to lawsut border)	1 inches to =	Save changes to layout
0.000000 inch		Drawing orientation
x: 0.00000 Inch Center the plot	1 unit	Portrait Iandscape
Y: 0.000000 inch	Scale lineweights	Plot upside-down
Preview	Apply to Layout OK	Cancel Help

Procedure – Split Profile Views

There are instances where the grade of a profile is so steep that the profile is cut off on a profile view. A profile view can be split so that the full grade of the profile can be shown on the plan and profile sheets. Follow the steps below to add a split to a profile view.

1. Select the profile view grid in which a split is desired, right click, then select *Profile View Properties*.



2. Select the *Elevations* tab, then check **Split profile view** and set the method to **Manual**.

O Automatic height			aximum:				
~ ~ ~	3314.670'		3597. 193'				
				Height:			
User specified height	3438.589'		3538.589'	100.000'			_
Split profile view							
Manual		Solit pro	Slo view data				
Manual		Spirt pro	ile view data.				
Automatic		No.	Split Station	Adjusted Datum	Profile View Style	5.2	
		1	698+75.00'	3456.413	MDT-Default	<u></u>	
Station rounding:							×
Exact station		\sim					
Datum rounding:							
Exact elevation		\sim					

3. Select the green + to add a split section. Select a location towards the beginning of the profile view and click twice, once representing the station and once representing the elevation. The value will be overwritten in the properties, so the selection does not need to be precise. Repeat the process but select a location towards the middle of the profile view so that there are three total rows of profile splits.

Split profile view d	ata:			
No.	Split Station	Adjusted Datum	Profile View Style	
1	698+75.00'	3456.413'	🕵 _MDT-Default	- M 🛨
				×
. 3510				
	n: 699+00.00', Elevation: 350	8.000'		
. 3490				
. 3480				
. 3470				
. 3460				
. 3450				
698+75 70	0+00	705+		
Specify elev	ration:	1001		
Specify stat	ion: *Cancel*			
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EDITGRAP	HPROPERTIES Specify e	elevation:		
Split profile view da	ita:			
No.	Split Station	Adjusted Datum	Profile View Style	
1	698+75.00'	3456.413'	🕵 _MDT-Default	🔛 🛨
2	699+00.00'	3514.000'	MDT-Default	h-1

- 4. Set the *Profile View Style* for Split No. 1 to _*MDT-No Display*.
- For Split No. 2, set the split station and adjusted datum to match the values in Split No. 1. Then set the *Profile View Style* to *MDT PROF-Plan (Split LT)*. <u>NOTE:</u> If the design profile begins outside the range of the profile view, the datum elevation for Split No. 1 may need to be adjusted.
- 6. For Split No. 3, type in the station or use the green box to select where the split line is preferred on the profile view. In this example, the split is preferred near station 715+00. Adjust the elevation to set a new datum for the new split. The elevation in this example will be set to 3425.000' to move the profile up in the view. Set the *Profile View Style* to *MDT PROF-Plan (Split RT)*. Then select *Apply* to apply the changes. Do not close out of the *Profile View Properties*.



 Select the Information tab of the Profile View Properties dialog. Set the Profile View Style to _MDT-No Display. This will remove a duplicate profile title (as seen on the image above) on the profile view so that only one shows. Select Apply, then OK to close out of the dialog box.



If a profile needs to be split more than once, the settings can be set similar to the one below. Use the *MDT PROF-Plan (Split Middle)* style for the middle split profile view. Note that the adjusted datum was set to an elevation such as 3399.990'. If the elevation was set to 3400.000', a label representing 3400' would not show.

	Split profile	view data:										
3550	No. Sp	olit Station	Adjusted Datum	Profile View Style		_						
- 🗄	1 69	8+75.00	3456.413	MDT-No Display	N.	+		3520	3490			3490
	3 70	98+75.00° 98+00.00'	3429.990'	MDT PROF-Plan (Split LT)		×		2540	2490			2490
a500	88 4 71	18+00.00'	a 3399.990'	MDT PROF-Plan (Split RT)				3570	3400			3400
3530				3500				3500	3470			3470
3520				3520					•	0,92%		
-								3490	3460			3460
3510				3510			_750 VC					
- 由				3480				3480	3450			3450
_3500	1,000 VC			3500								
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				3490				2,400				
Í 🖽				3400			1.2	3400	3430			3430
				3480 3450				3450	3420			3420
2470 🗄				0470								
				3470				3440	3410			3410
3460	955	5000RDALN	-PROP-ML	3460								
				3430				3430	3400			3400
698+75	700+00		705+00	710+00			715+00			720+00	725+00	726+75

Section V. Annotate Sheets

Procedure – Add Project Leader Blocks

- 1. Set the active layer to *X-MISC-LABL*.
- 2. Select the layout containing the beginning of the alignment.
- 3. Open the *Blocks Palette* by typing the command *BLOCKSPALETTE* or by selecting the insert dropdown from the *Block* panel in the *Insert* tab in the ribbon and selecting *Blocks from libraries*.
- Select the *Libraries* tab and select the *RD-Plan.dwg* library.
 If the library has not yet been set, select the folder icon dropdown and select *Browse Block Libraries*, then navigate to the following location: *C:\mdoh\StateKit\Civil 3D\2024\Blocks*
- 5. If applicable, *insert* the *N-BegConnToPTW* block representing the beginning connection to PTW and snap to the appropriate location on the alignment in the plan view of the layout.
- 6. *Insert* the *N-PLP_BeginProjectLeader* block and snap to the project's begin station.
- Explode the N-BegConnToPTW block once and the N-PLP_BeginProjectLeader block twice. Then edit the station values within the text editors. The field following the station value in the N-PLP_BeginProjectLeader will pull the federal aid number from the Sheet Set

Manager, so it should not be overwritten.

8. Select the leader and the text for the begin connection to PTW, then select the top arrow, the angled leader line and the text for the begin project leader, like shown below:



- 9. Use the command CHSPACE and select the top (plan) viewport to move the notes from paper space to model space. These notes need to be in model space so that anyone who references the PLP file can see the notes that have been added to the sheets. Any note added to paper space will not be seen in model space.
- 10. Repeat steps 5-9 with the *N-EndConnToPTW* and *N-PLP_EndProjectLeader* blocks for the end of the project.

Procedure – Add Notes

This procedure applies to adding notes in both the plan and profile views.

- 1. Set the active layer to *X-MISC-NOTE*.
- 2. Select a layout in which a note is desired.
- Select the Annotate tab and ensure that MDT Arial Italic is the active text style. Select the Multiline Text button or use the command MTEXT to add a note to the layout.



4. Add the desired text for the note. Then select the note and open the *Properties* palette.

NOTE: For notes requiring stationing, the Alignment inquiries within the *Inquiry Tool* (which can be found in the *Inquiry* panel of the *Analyze* tab or the command **SHOWINQUIRY**) are useful for obtaining accurate stations from the alignment.

5. In the *Properties* palette, set the *Rotation* to **90** (if applicable), change *Annotative* text to **No** and apply a background mask.

NOTE: After pressing Enter to set the rotation, the value may show a cardinal direction as the angle, such as N for 90 degrees. This is because the Drawing Units were set to Surveyor's Units (bearings) for angles in the State Kit V2.1.0 update. Files created prior to this update will show angles as decimal degrees.

MText			N/AL		1172
General	-	E	and the second second		
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Layer	X-MISC-NOTE	-			
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6. Use the *CHSPACE* command to move the note to model space so that anyone who references the file can also see the note. Doing this will also ensure that the text is consistently the same height in model space across all the sheets.

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*. The field links to the sheet's description within a layout's properties, like shown below:



This change removes the ability to use the *Find and Replace* tool to update the description on all PLP sheets. Instead, the title block must be edited, and the field must be overwritten to have the change apply to all layouts within the PLP file.

To update the sheet description to the same name for multiple layouts in one file, follow the steps below:

1. In the PLP file, select a layout containing a PLP sheet. Select the title block, right click, and select *Block Editor*.



NOTE: This process will not work if the *Edit Block in-place* option is selected.

2. In the *Block Editor*, double click the **DSC-1** attribute definition, then select the ellipsis button in the *Default* section of the *Edit Attribute Definition* popup.

		SHEET NO. SSMPAGENUM
😫 Edit Attril	bute Definition X	
Tag:	DSC-1	.
Prompt:	DSC - Sheet Description	
Default:		
	OK Cancel Help	

 Double click the field to open the *Text Formatting* dialog box and highlight the field. Either delete the field or overwrite it by typing "*PLAN AND PROFILE*" or other appropriate terminology. Select *OK* to exit the *Text Formatting* box to save the text changes.



4. When the *Text Formatting* dialog is closed, the DSC-1 tag will still show; this is expected.



 Save the block by selecting the Save Block button from the Open/Save panel in the Block Editor contextual tab. Select Save the changes if a popup regarding parameters shows.



 After the block has been saved, select the green check mark to close out of the Block Editor. A prompt to save the changes to the block may appear again. If the prompt shows, select Save the changes to B-BorderRoad_11x17.



 In the layout, type the command *ATTSYNC*. Click the *<Select>* option, then select the title block within the layout. Select *<Yes>* to synchronize the changes.



8. The title block will then update to show the changes. The *RegenAll* (*REA*) command may need to be used to update all the layouts within the file.

