MicroStation **Title Sheet Preset Filters**

► For TDOT Roadway Projects



TDOT Department of Roadway Design Division

Website https://www.tn.gov/content/tn/tdot/roadway-design/design-standards/design-cadd-files.html

Email TDOT.CADDSupport@tn.gov

The purpose of Preset Filters is to be a simplification for Designers in creating roadway new Title Sheets. This tutorial is intended to assist users on learning to apply these filters to new Title Sheets throughout the various phases of a TDOT roadway project.

This tutorial is based on Davidson County State Route 252 project and this is an example only. Actual projects may be different.

The Preset Filters are predefined sets that filter through new Title Sheet levels by different level properties such as the name, number, description, used, number of elements, etc.

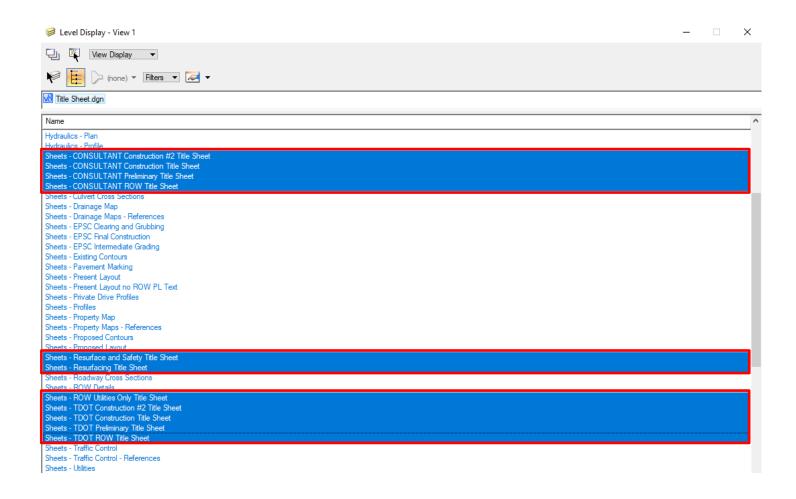
The new Title Sheet is both a seed and a cell file. It is an all in one sheet for the life of the project. There is no need to have different Title Sheets for different phases of the project. This new Title Sheet will standardize where everything is located on the sheet and how they look. This new Title Sheet has new levels set just for it. The new levels are from 400 to 460 (see table 2 & screen 2). The sheet has specific levels for Preliminary, Right-Of-Way, and Construction phases as well as TDOT designed and Consultant designed projects (see table 2 & screen 2). For different phases of the project you turn off the levels you do not need, or turn on the levels you do need. This is where Preset Filters become a handy tool instead of having to turn levels on/off individually based on various phases of the project; Preset Filters (see table 1 & screen 1) will simplify almost all of these procedures by applying applicable levels for each phase of the project in accordance with the Roadway Design Guidelines. However, Preset Filters cannot completely eliminate designers from having to turn levels on/off individually due to different requirements for each project. The example levels are Utility Chapter 86 R.O.W., TMP Required Prelim, Design Exception, Exclusion, No Exclusions, Traffic Data Blocks, Project of Limited Scope and Road to Be Closed. For projects that need more than one Traffic Data Block, there are three blocks on different levels embedded in the sheet. Other blocks embedded are; Design Exception, Road to Be Closed, Exclusion, No Exclusion, Utility Chapter 86 ROW and TMP Required Prelim. Each block has its own level. Any embedded level blocks that do not pertain to the project can be turned off individually by the designer.

There are <u>eleven</u> Title Sheet Preset Filters that filter through <u>49</u> new Title Sheet level properties and each filter is set to only those levels applicable to each type of title sheet. The Title Sheet Preset Filters and 49 Sheet Level properties are listed on table 1 & 2 including screen shots from MicroStation (see screen 1 & 2) as shown and described below.

Title Sheet Preset Filters (Table 1)

	Filter Name
1.	Sheets – TDOT Preliminary Title Sheet
2.	Sheets – TDOT ROW Title Sheet
3.	Sheets – TDOT Construction Title Sheet
4.	Sheets – TDOT Construction #2 Title Sheet
5.	Sheets – CONSULTANT Preliminary Title Sheet
6.	Sheets – CONSULTANT ROW Title Sheet
7.	Sheets – CONSULTANT Construction Title Sheet
8.	Sheets – CONSULTANT Construction #2 Title Sheet
9.	Sheets – ROW Utilities Only Title Sheet
10.	Sheets – Resurfacing Title Sheet
11.	Sheets – Resurfacing and Safety Title Sheet

A screen shot of eleven preset title sheet filters highlighted in blue. (Screen 1)



Sheet Level Properties (Table 2)

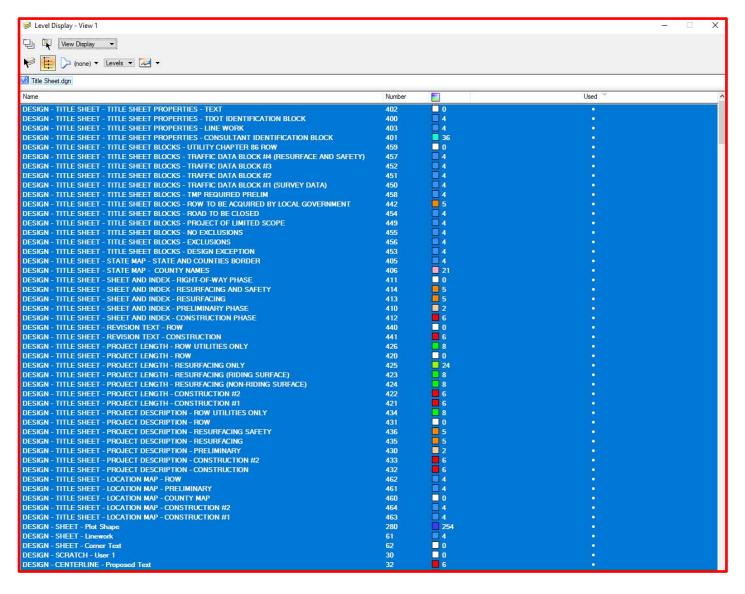
Level Sections		Level Name	Level No.
Title Sheet Proper	1.	TDOT IDENTIFICATION BLOCK (in the lower left corner)	400
	2.	CONSULTANT IDENTIFICATION BLOCK (in the lower left corner)	401
	3.	TEXT	402
	4.	LINE WORK	403
The State Map	5.	STATE AND COUNTIES BORDER	405
	6.	COUNTY NAMES	406
Type of Sheet	7.	PRELIMINARY PHASE	410
& Index	8.	RIGHT-OF-WAY PHASE	411
	9.	CONSTRUCTION PHASE	412
	10.	RESURFACING	413
	11.	RESURFACE AND SAFETY	414
Project Length	12.	ROW	420
(under county map)	13.	CONSTRUCTION #1	421
	14.	CONSTRUCTION #2	422
	15.	RESURFACING (RIDING SURFACE)	423
	16.	RESURFACING (NON RIDING SURFACE)	424
	17.	RESURFACING ONLY	425
	18.	ROW UTILITIES ONLY	426

Begin & End Project	19.	PRELIMINARY	430
	20.	ROW	431
	21.	CONSTRUCTION	432
	22.	CONSTRUCTION #2	433♣
	23.	ROW UTILITIES ONLY	434
	24.	RESURFACING	435
	25.	RESURFACING SAFETY	436
Revision	26.	ROW	440
	27.	CONSTRUCTION	441
Blocks	28.	ROW TO BE ACQUIRED BY LOCAL GOVERNMENT	442
	29.	PROJECT OF LIMITED SCOPE	449
	30.	TRAFFIC DATA BLOCK #1 (SURVEY DATA)	450
	31.	TRAFFIC DATA BLOCK #2	451
	32.	TRAFFIC DATA BLOCK #3	452
	33.	DESIGN EXCEPTION	453
	34.	ROAD TO BE CLOSED	454
	35.	NO EXCLUSIONS	455
	36.	EXCLUSIONS	456
	37.	TRAFFIC DATA BLOCK #4 (RESURFACE AND SAFETY)	457
	38.	TMP REQUIRED PRELIM	458
	39.	UTILITY CHAPTER 86 ROW	459
Location Map	40.	COUNTY MAP	460
	41.	PRELIMINARY	461 ▲
	42.	ROW	462▲
	43.	CONSTRUCTION #1	463 ▲
	44.	CONSTRUCTION #2	464 ▲ ♣
Sheet Border	45.	Plot Shape	280
	46.	Linework	61
	47.	Corner Text	62
	48.	SCRATCH – User 1	30♥
	49.	CENTERLINE – Proposed Text (north arrow)	32

Footnotes

- ♣ To be used when a project is split into two projects with different limits and PIN's.
- ▲ To be use for adding sheet blocks and sheet numbers on a County Map or any other text that may be needed.
- ♥ Informational texts only, shall be turned off prior to print/plot and conversion to PDF in Iplot Organizer.

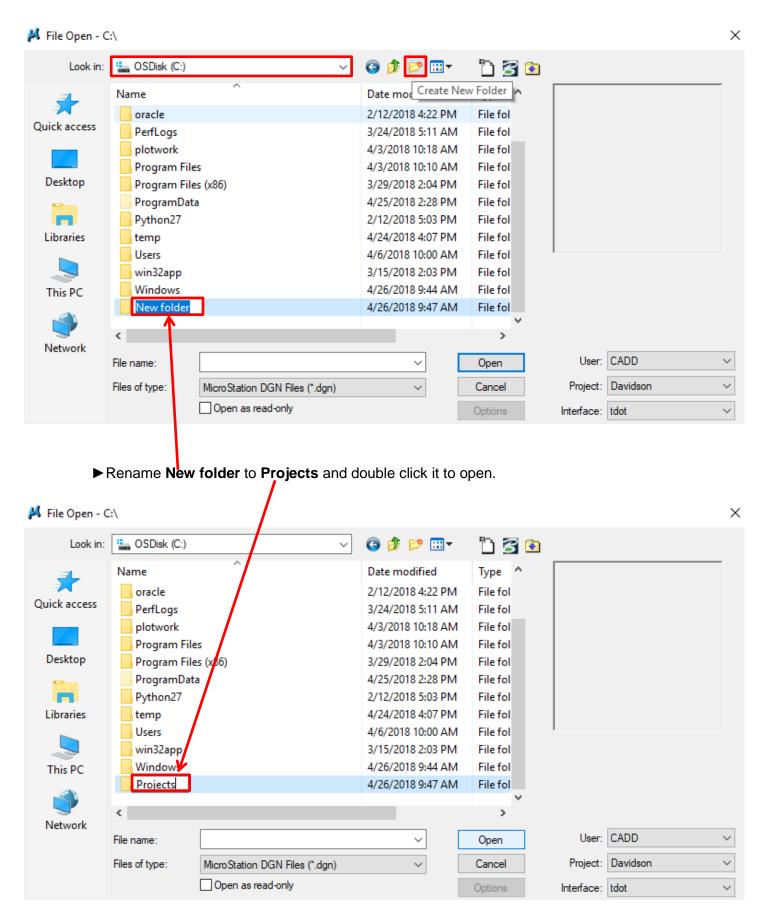
A screen shot of 49 title sheet level properties. (Screen 2).



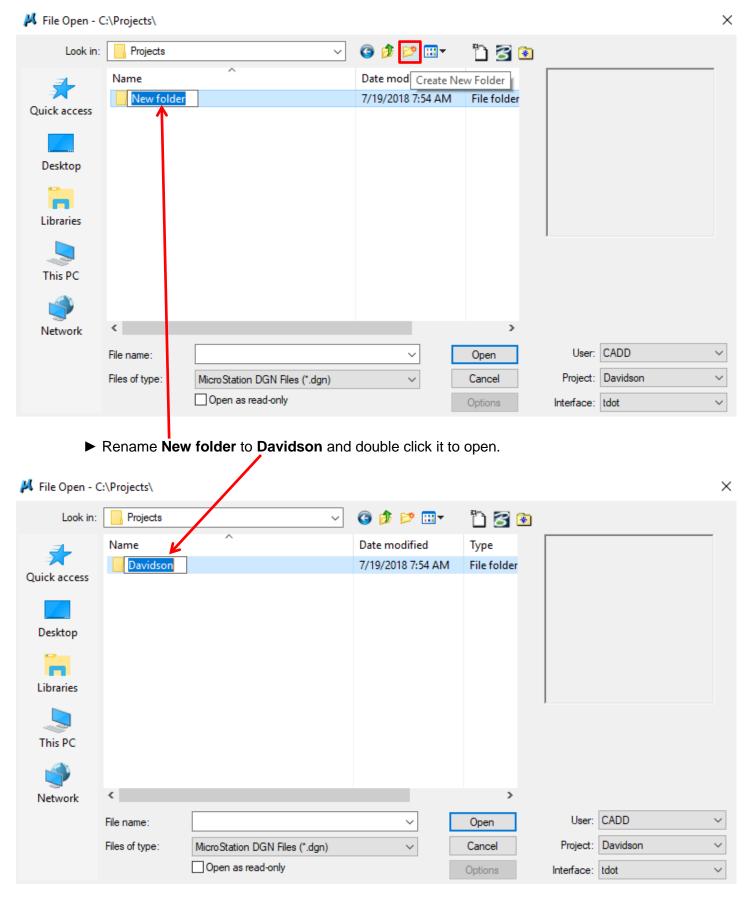
Before creating new Title Sheet file, the projects folder shall first be created.

The following steps will guide the user in creating the projects folder. This tutorial is an example only and actual projects may be different.

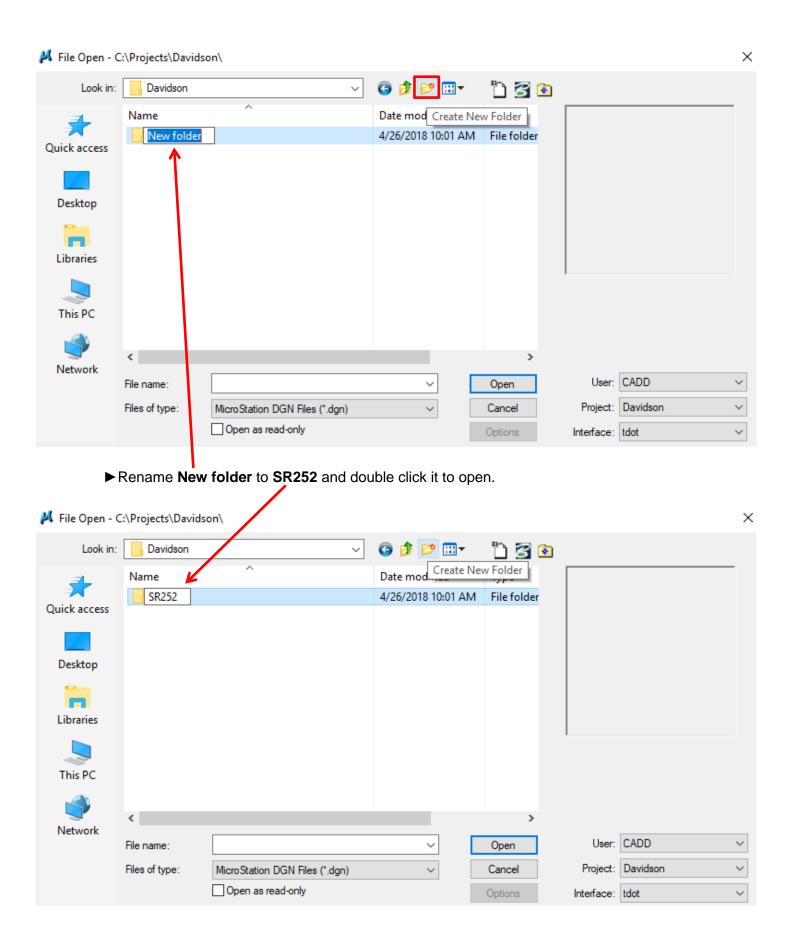
- 1. Create Projects Folder
- a. Open MicroStation, ensure Look in: is directed to C drive.
 - ► Click on Create New Folder.



- a. Create subfolder in Projects folder directory.
 - ► Click Create New Folder.



- **b.** Create another subfolder in Davidson folder directory.
 - ► Click Create New Folder.

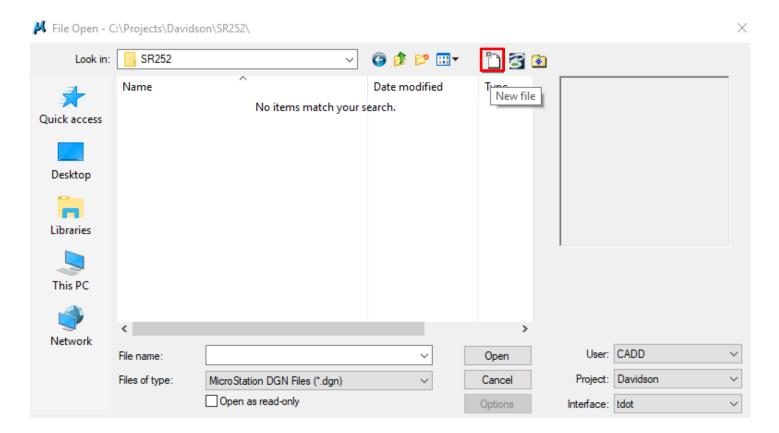


► Title Sheet DGN will be saved in the SR252 folder.

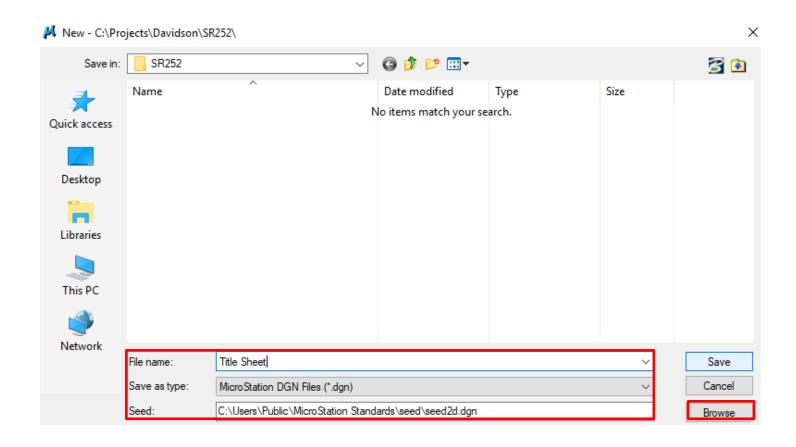
There are two options for creating a new Title Sheet with Preset Filters and the procedures for each are as follow:

Option 1

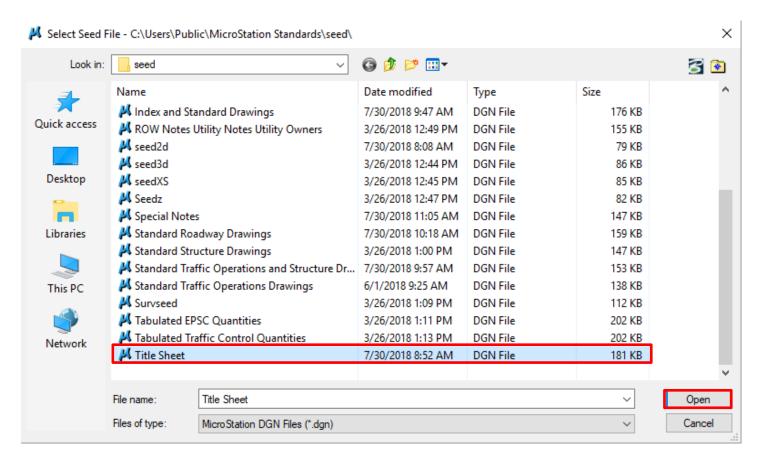
- 1. Create Title Sheet DGN
- a. In existing Davidson County SR252 project directory.
 - ► Click on MicroStation New file.



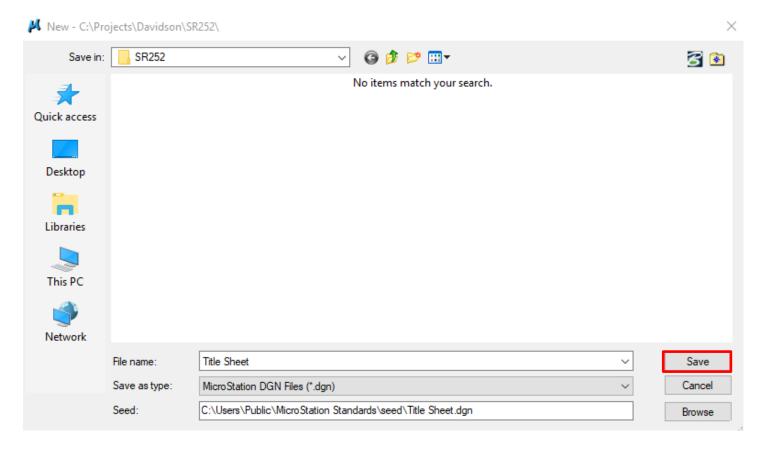
- **b.** In MicroStation New file window.
 - ▶ Enter File name, set Save as type to Microstation DGN Files (*.dgn) and Click **Browse** for Seed.



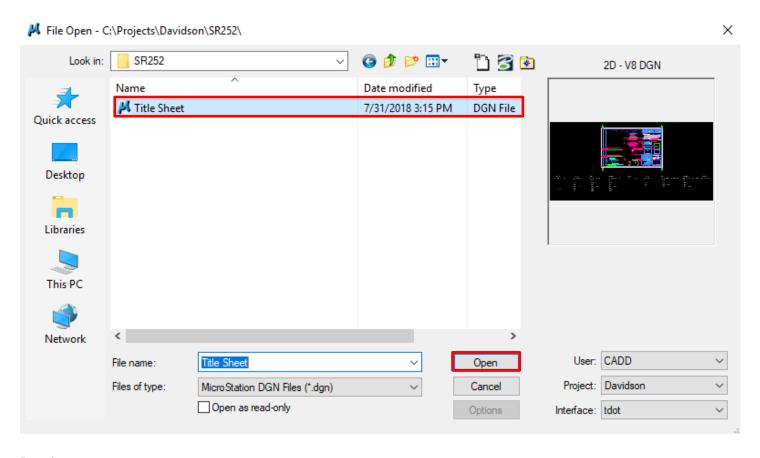
▶ As you browse through DGN Seed file directory choose **Title Sheet** and click **Open**.



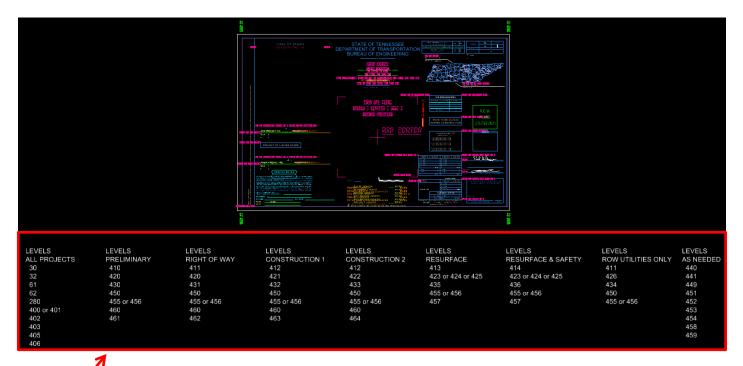
▶ After selecting **Title Sheet** Seed DGN, the file can be saved by clicking **Save**.



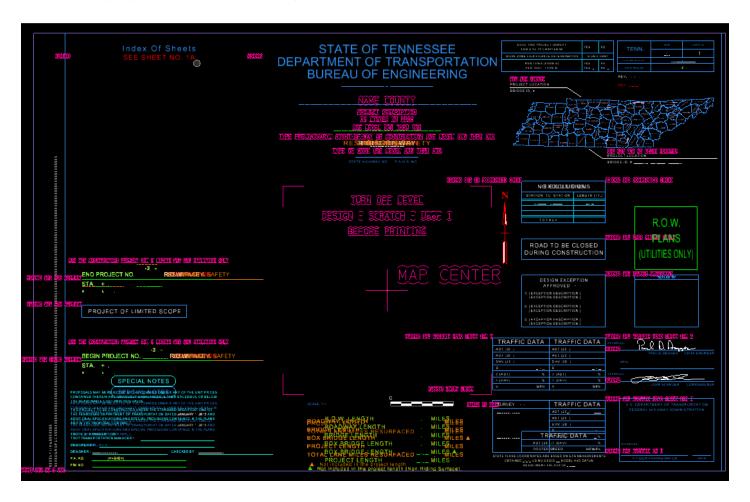
► After clicking **Save**, file directory opens up allowing Title Sheet DGN file to be opened by clicking **Open**.



► Title Sheet DGN.

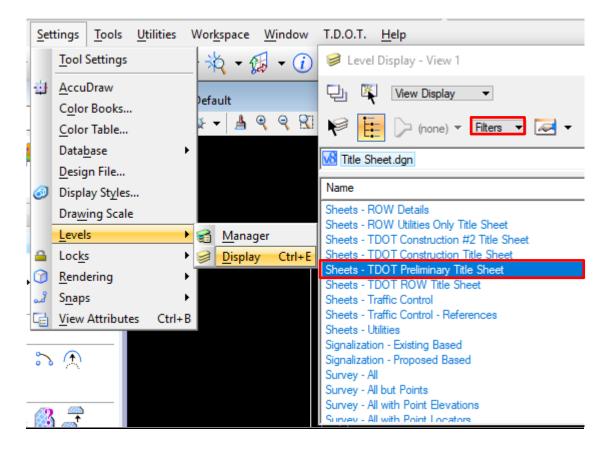


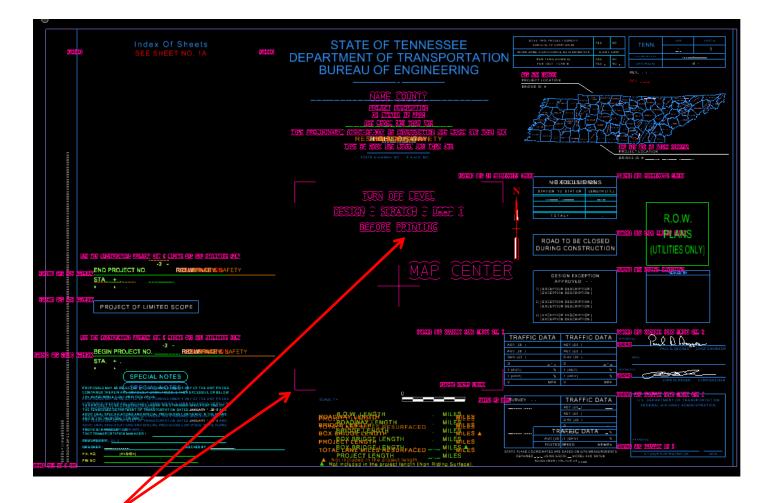
Level properties information for all phases of title sheet.



2. Select Title Sheet Preset Filters

- a. TDOT Preliminary Title Sheet.
 - ►In existing title sheet .dgn file, go to "Settings", "Levels" and "Display".
 - ►In Level Display View, Select Filters. (none) ▼ Filters ▼
 - ▶ Then click on "Sheet TDOT Preliminary Title Sheet" to turn on filter.



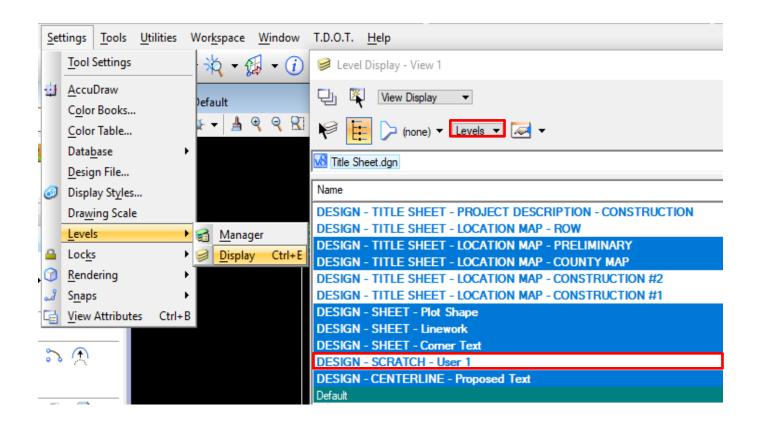


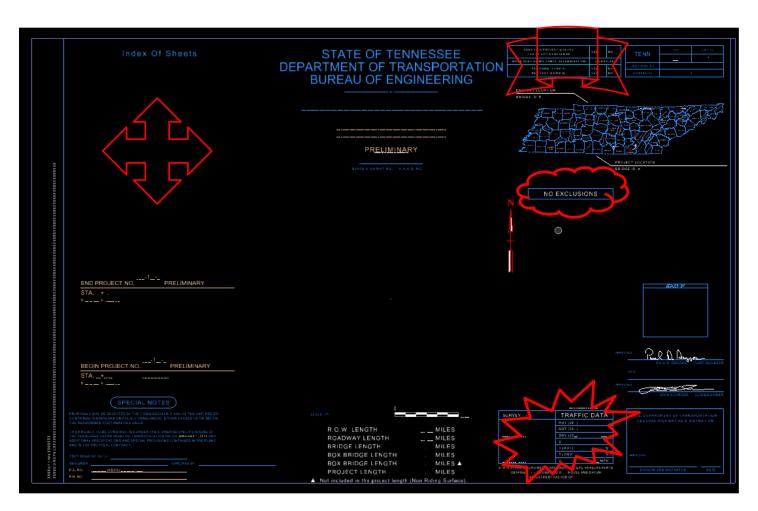
NOTICE: Informational texts and lines shall be turned off prior to printing/plotting and conversion to PDF in Iplot Organizer.

Informational texts and lines are assigned to level name "DESIGN – SCRATCH – User 1".

3. Turn Off Levels

- a. To Turn Off "DESIGN SCRATCH User 1" Level.
 - ▶ In existing title sheet .dgn file, go to "Setting", "Levels" and "Display".
 - ►In Level Display View, Select **Levels**.
 - ▶ Then click on "DESIGN SCRATCH User 1" to turn off level.







For Index of Sheets placement, refer to step 3 in OPTION 2 on page 26.

If a project requires UTILITY CHAPTER 86 ROW and/or TMP REQUIRED PRELIM, designer can turn on/off either or both levels by following procedures in step 3 on page 15, but with levels DESIGN – TITLE SHEET BLOCKS – TMP REQUIRED PRELIM.

If a project requires EXCLUSION, designer can turn off NO EXCLUSIONS and turn on EXCLUSION by following procedures in step 3 on page 15, but with either levels DESIGN – TITLE SHEET – TITLE SHEET BLOCKS – NO EXCLUSIONS or DESIGN – TITLE SHEET – TITLE SHEET BLOCKS – EXCLUSIONS.

If a project requires more than one Traffic Data Block, designer can turn that on by following the same procedures as described in step 3 on page 15, but with levels DESIGN – TITLE SHEET – TITLE SHEET BLOCKS – TRAFFIC DATA BLOCK #2, DESIGN – TITLE SHEET – TITLE SHEET BLOCKS – TRAFFIC DATA BLOCK #3 or DESIGN – TITLE SHEET – TITLE SHEET BLOCKS – TRAFFIC DATA BLOCK #4 (RESURFACE AND SAFETY).

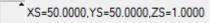
4. Change Title Sheet Scale

Default Title Sheet scale is 50:1

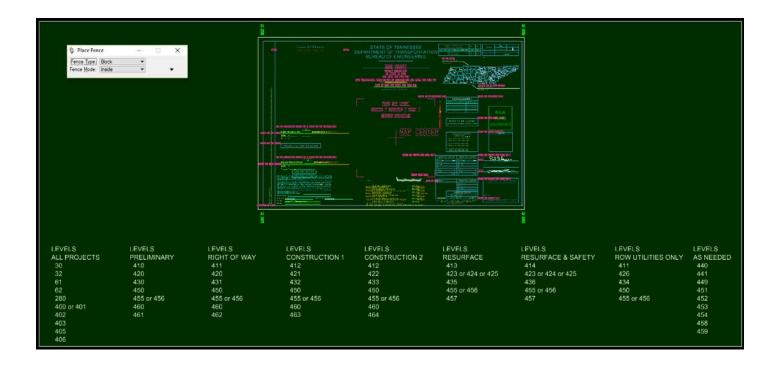
- a. First determine sheet scale.
 - ► In existing title sheet .dgn file, type "as=?" in **Key in** window.



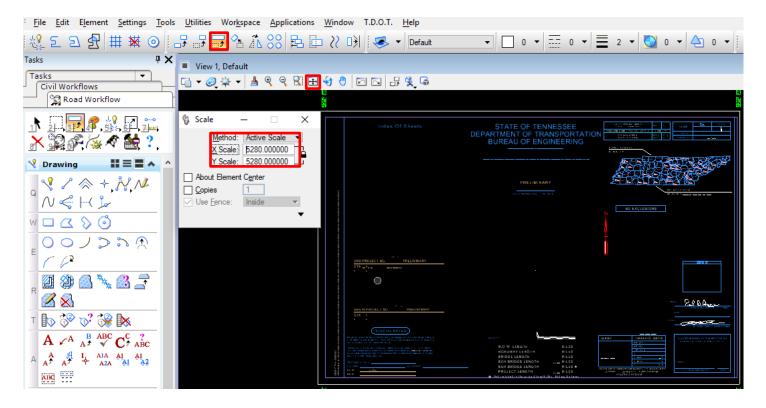
▶ Then hit **Enter** key, in the bottom of the screen shows default scale.



- b. Change Title Sheet Scale
 - ► Common title sheet scale is 5280' or 1 mile.
 - ► In existing title sheet .dgn file, select "Place Fence".
 - ▶ Place fence over the whole Title Sheet including informational texts.

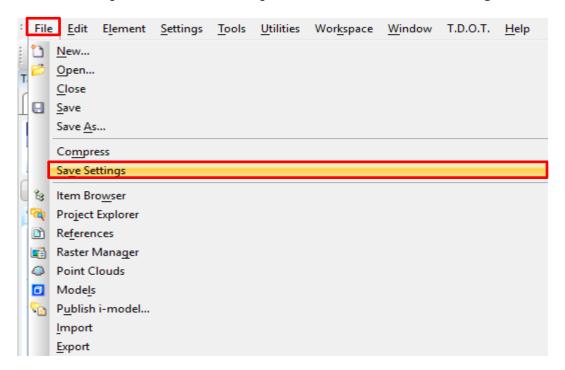


- ► Select "Scale" and key in 5280 for X & Y Scale and then Data Point to accept.
- ► Also select **Fit View** to bring Title Sheet into view.



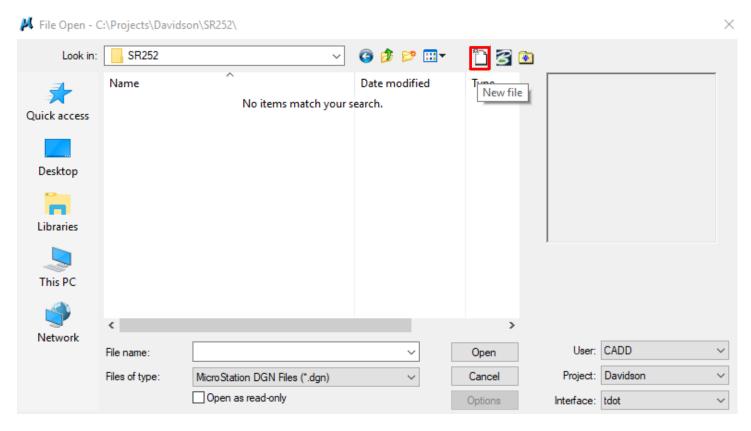
▶ To confirm the Title Sheet scale has changed, type "as=?" in **Key-in** window and hit **Enter**.

- 5. Save Settings
- **a.** Before existing out of MicroStation, be sure to save settings.
 - ► In existing Title Sheet DGN file, go to **Files** and select **Save Settings**.

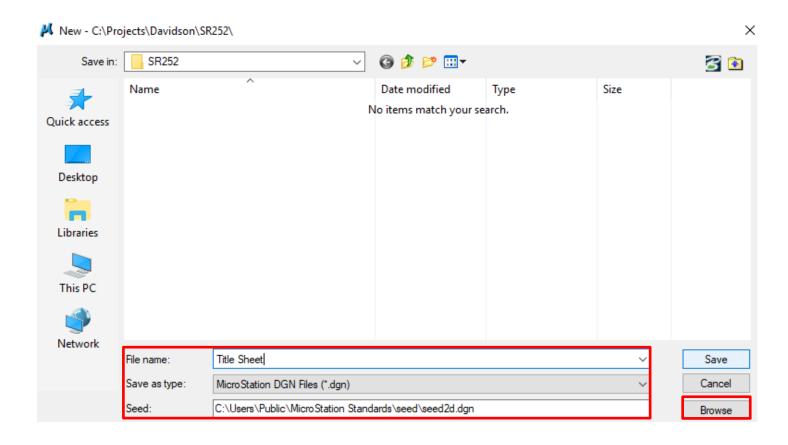


OPTION 2

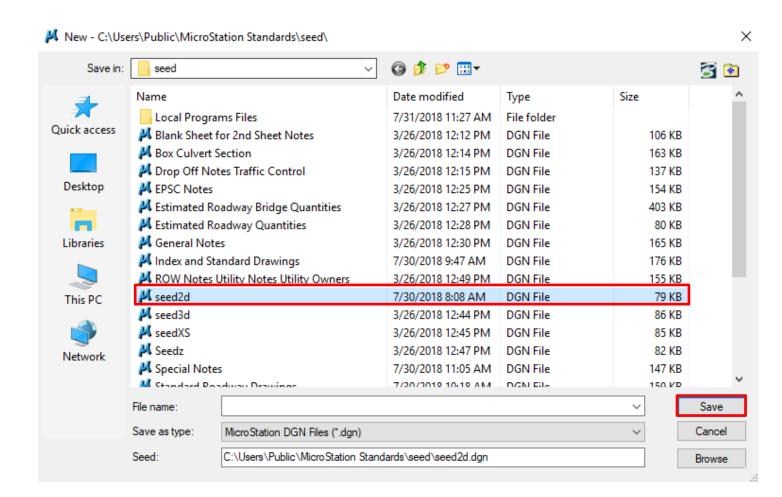
- 1. Create Title Sheet DGN
- **a.** In existing Davidson County SR252 project directory.
 - ► Start Microstation and select New file.



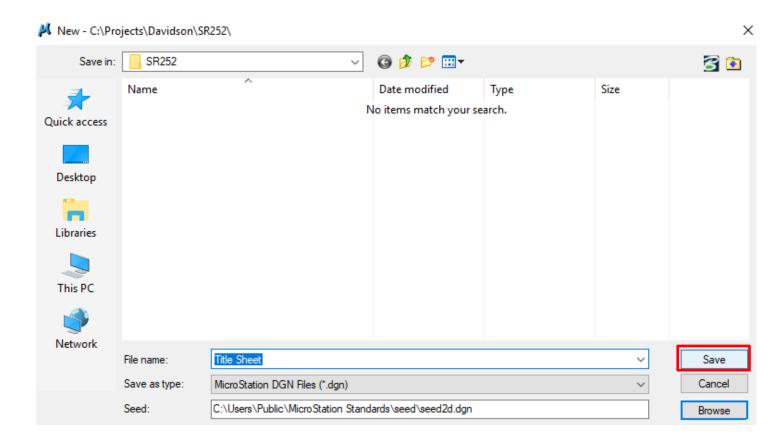
- **b.** In Microstation New file window.
 - ► Enter File name, select MicroStation DGN Files (*.dgn) in Save as type and click Browse to select Seed type.



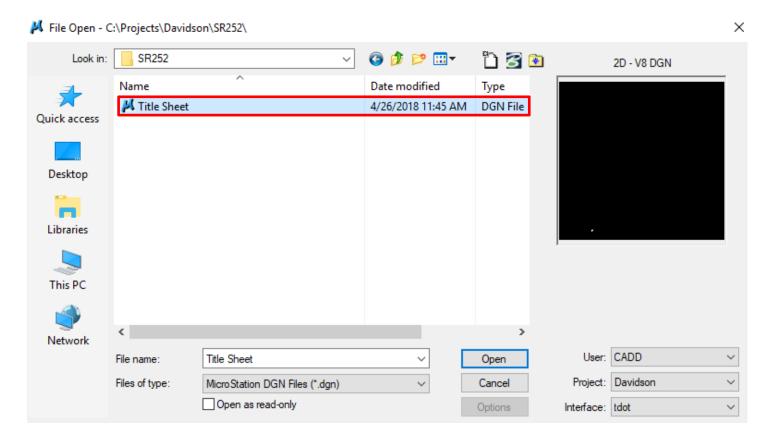
► As you browse through seed files directory choose **seed2d** for Seed and click **Save.**



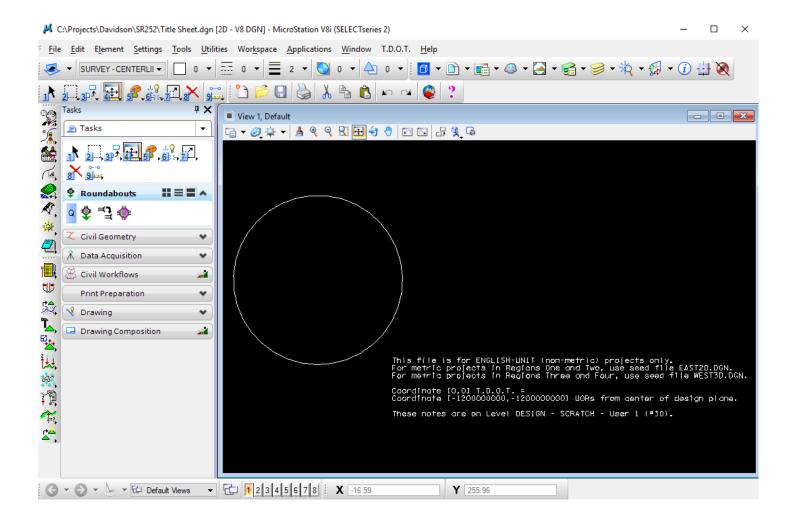
▶ In existing MicroStation New file directory, enter file name and click **Save**.



- ▶ Immediately after clicking **Save**, File Open directory window opens up.
- ▶ Double click **File name** to open.

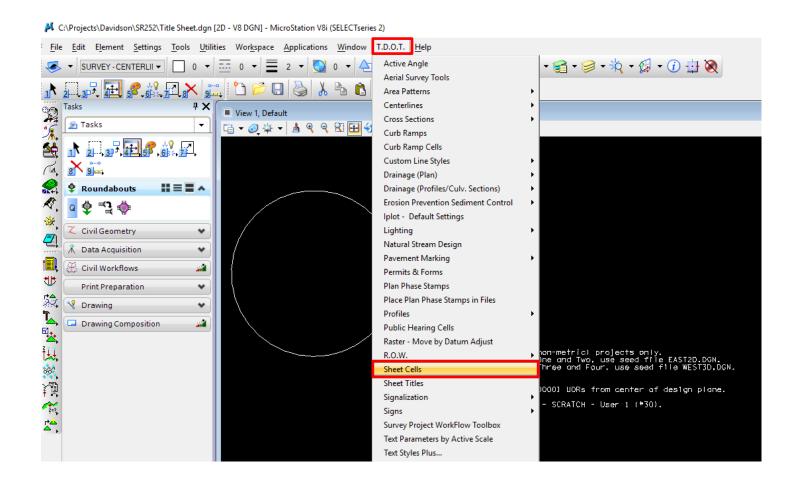


► Title Sheet DGN file opens.

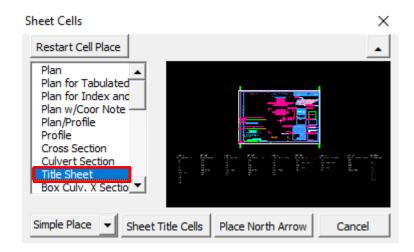


2. Place sheet cell

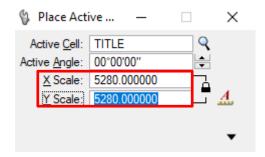
- a. In existing Title Sheet file directory.
 - ► Go to T.D.O.T and select Sheet Cells.



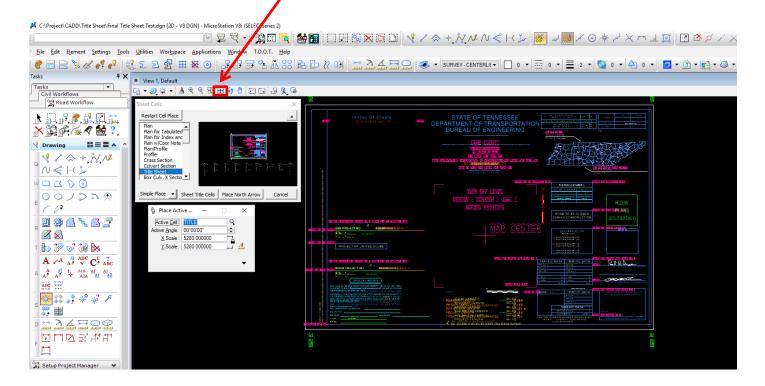
b. Select Title Sheet from Sheet Cells Tab.



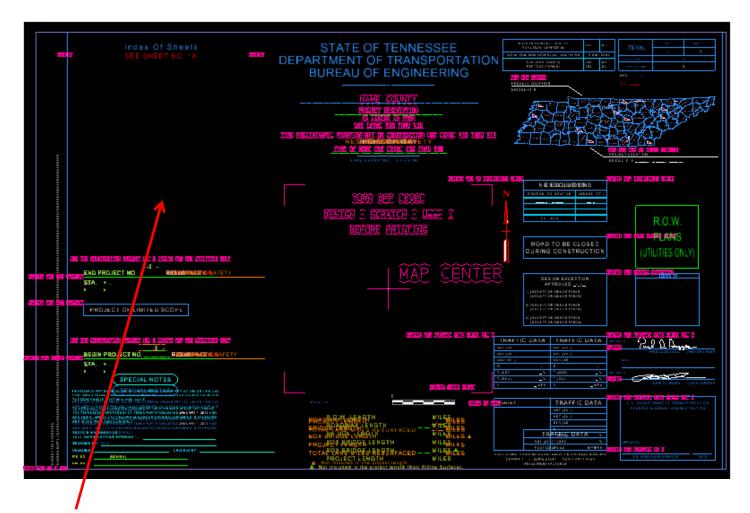
c. Set XY Scale to 5280 on Place Active Scale Tab.



d. Data Point to accept and **Fit View** to bring Title Sheet DGN to view.



Title Sheet DGN.



NOTICE: There is no embedded Index of Sheets.

To turn off inapplicable levels, refer to step 3 in *Option 1* on page 15.

- 3. Index of Sheets Placement (This method applies to both **OPTIONS 1 & 2**).
- a. Open up Microsoft word file PRELIMINARY INDEX through this directoryC:\Users\Public\Office Standards\TDOT 2nd Sheets.

PRELIMINARY INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTIONS	2, 2A1, 2A2
DETAIL SHEETS	2B, 2B1, 2B2
RIGHT-OF-WAY NOTES, UTILITY NOTES and UTILITY OWNERS	3
RIGHT-OF-WAY ACQUISITION TABLE(S) and PROPERTY MAP(S)	3A - 3B
PRESENT LAYOUT(S)	4 - 10
RIGHT OF WAY DETAILS	4A - 10A
PROPOSED LAYOUT(S)	4B - 10B
PROPOSED PROFILE(S)	4C -10C
RAMP PROFILE(S)	11 - 12
① SIDE ROADS PROFILE(S)	13 - 14
PRIVATE DRIVE, BUSINESS, AND FIELD ENTRANCE PROFILE(S)	15 - 18
DRAINAGE MAP(S)	19 - 20
CULVERT SECTION(S)	21 - 22
ROADWAY CROSS SECTIONS	23 - 83
SIDE ROAD CROSS SECTIONS	84 - 94

Footnotes:

1 Haul Road profiles follow Side Road profiles in the sheet numbering sequence.

- **b.** Copy Index of Sheets.
 - ▶ Open PRELIMINARY INDEX file and select it as blue highlight shown below.
 - ► Then right mouse click and select **copy**.

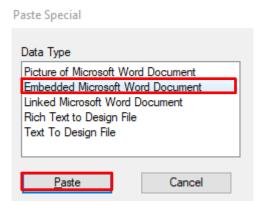
PRELIMINARY INDEX OF SHEETS

TITLE SHEET				. 1	
TYPICAL SECTIONS				. 2, 2A1, 2	A2
DETAIL SHEETS				2B, 2B1,	2B2
RIGHT-OF-WAY NOTES, UTILIT	ΥN	NOTES and UTIL	LITY OWNERS	3	
RIGHT-OF-WAY ACQUISITION	TAI	BLE(S) and PRO	PERTY MAP(S)	3A - 3B	
PRESENT LAYOUT(S)		10 _ A^ .Y Z = S =		. 4 - 10	
RIGHT OF WAY DETAILS		12 · A A · 算算 整 · A · 《		4A - 10A	
PROPOSED LAYOUT(S)	,			4B - 10B	
PROPOSED PROFILE(S)	¥ ₽	<u>C</u> opy		4C -10C	
RAMP PROFILE(S)	a	Paste Options:		. 11 - 12	
1 SIDE ROADS PROFILE(S)		■ A		. 13 - 14	
PRIVATE DRIVE, BUSINESS, AI	A =	<u>F</u> ont <u>P</u> aragraph	CE PROFILE(S)	15 - 18	
DRAINAGE MAP(S)	∷	<u>B</u> ullets		19 - 20	
CULVERT SECTION(S)	i≡ A₄	Numbering → Styles →		21 - 22	
ROADWAY CROSS SECTIONS		<u>H</u> yperlink		23 - 83	
SIDE ROAD CROSS SECTIONS		Loo <u>k</u> Up		84 - 94	
	E	Synonyms ▶ Translate			
Footnotes:		<u>A</u> dditional Actions ▶			
			_		

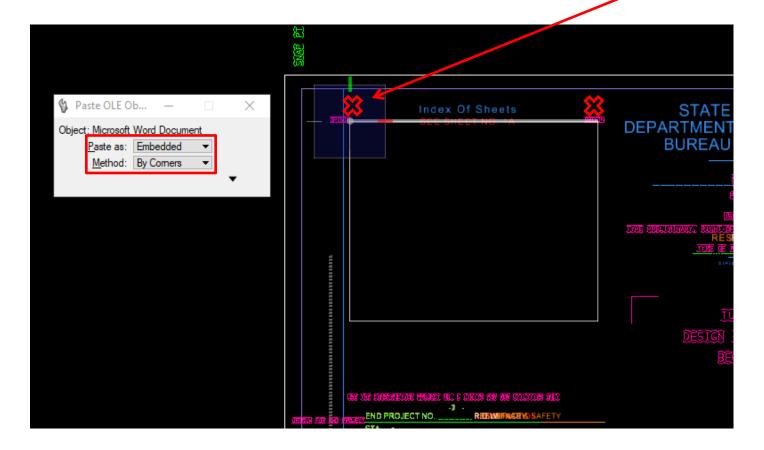
- c. Paste Index of Sheets onto Title Sheets DGN.
 - ▶ In existing Title Sheets DGN file, go to Edit and choose Paste Special.

1 Haul Road profiles follow Side Road profiles in the sheet numbering sequence.

► Under Paste Special dialog, Choose Embedded Microsoft Word Document and then click Paste.



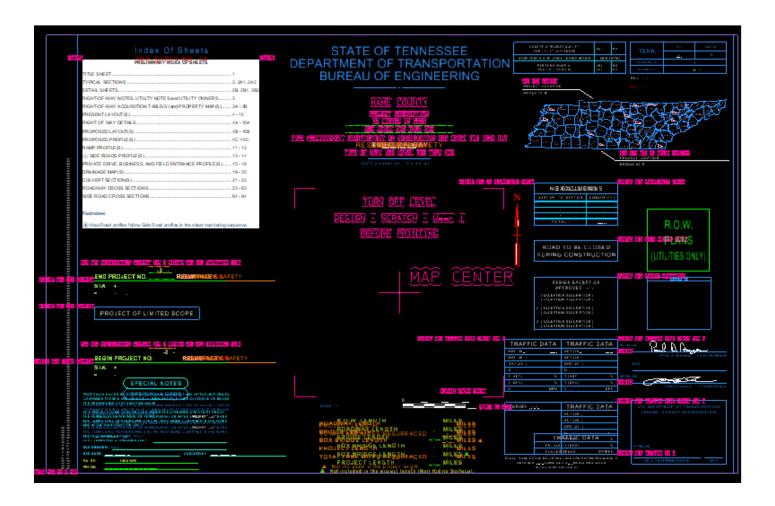
► Make sure Embedded Method is set to **Corners**, and then snaps at one corner to another.



► Embedded PRELIMINARY INDEX.

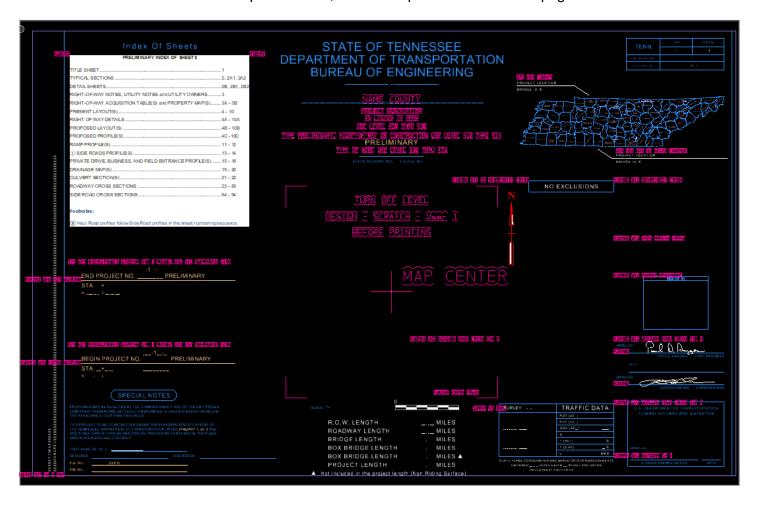
TITLE SHEET	
	1
TYPICAL SECTIONS	2, 2A1, 2A2
DETAIL SHEETS	2B, 2B1, 2B2
RIGHT-OF-WAY NOTES, UTILITY NOTES and UTILITY	OWNERS 3
RIGHT-OF-WAY ACQUISITION TABLE(S) and PROPER	RTY MAP(S) 3A - 3B
PRESENT LAYOUT(S)	4 - 10
RIGHT OF WAY DETAILS	4A - 10A
PROPOSED LAYOUT(S)	4B - 10B
PROPOSED PROFILE (S)	4C -10C
RAMP PROFILE(S)	11 - 12
① SIDE ROADS PROFILE(S)	13 - 14
PRIVATE DRIVE, BUSINESS, AND FIELD ENTRANCE I	PROFILE(S) 15 - 18
DRAINAGE MAP(S)	19 - 20
CULVERT SECTION(S)	21 - 22
ROADWAY CROSS SECTIONS	23 -83
SIDE ROAD CROSS SECTIONS	84 - 94
Footnotes:	

▶ Title Sheet DGN with embedded PRELIMINARY INDEX.



Title Sheet DGN with the Preliminary Title Sheet level filter turned on.

▶ To turn on Title Sheet preset filters, refer to step 2 in **OPTION 1** on page 14.



Title Sheet DGN with informational texts and lines level turned off.

► To turn off level, refer to step 3 in *OPTION 1* on page 15.

