

# Placing Mile Markers and Delineators in Microstation

Traffic and Safety Manual Chapter 20 Instructions Originally Issued: 11-05-15

20A-2

# Create a Complex Chain

Create a line along which the Mile Markers and Delineators will be placed. Often this will be the centerline of the roadway. This line needs to be a single line. If not, use the Create Complex Chain command to join the different segments together. For method, select Automatic.

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	S	2. Create Complex Chain	
×	Z	3 Create Complex Shape	
2	ᢓ	4 Create Region	🔁 Create Complex 🔳 🗖 🔀
	₩	5 Add To Graphic Group	
	₩	6 Drop From Graphic Group	Method: 🗛 Automatic 💌
	0	Z Group Hole	Max <u>G</u> ap: 1.0000
		Open as ToolBox	Simplify geometry

Avoid using separate lines for each side of the roadway. This may work on straight sections of road, but will not give accurate locations when going around a curve.

Note: COGO elements do not always perform as expected when using this method. Best current practice is to use common lines, curves, and complex chains in lieu of COGO elements. You can use the drop element tool to break COGO elements up if necessary.

# Place Delineator Cell

It is then necessary to place a mile marker or delineator at the correct starting location. It is usually easier to place the 1/20<sup>th</sup> delineators, and change out every 20<sup>th</sup> one to the mile marker symbol.

In the <u>trfeng-DELINEATORS.cel</u> cell library, select the del-Type 1A cell (or other cell as appropriate.)

Offset the delineator to the side or sides of roadway where the delineators will be placed. Typical offset is 8 ft. from the edge of roadway. Distance from the centerline will vary depending on the median width and the cross section of the roadway. Refer to <u>SI-171</u> and <u>SI-172</u> for additional details.



### Array Along Path

Select the "Array" tool. In the Construct Array Dialog, the following settings are recommended:

- Method: Along Path
- Mode: Distance
- Distance: 264 ft (1/20<sup>th</sup> Mile) for Milepost delineators or other distance as appropriate
- Rotate Items: Selected (this will rotate the cells correctly as they go around curves)



To use the Array tool with the "Along Path" method, first select the cell(s) you will to array. Next, select the starting point along the line which they are to be placed. Next, trace along the path, noting that locations a cell will be placed will be marked by a small dot (these are displayed only temporarily.) Lastly, select the point where delineation is to stop.



#### **Replace Cells**

After all delineators are in place, every 20<sup>th</sup> delineator should be replaced with the appropriate mile marker symbol. The Replace Cells tool may be used to replace cells while maintaining size, scale, and rotation.



In the "Replace Cells" Dialog, the following settings are recommended:

- Method: Replace
- Mode: Single (this allows the replacement of only selected cells)
- Use Active Cell: Selected. Use the Magnifying glass to identify the appropriate Milepost cell in the cell library. Click the placement button to populate the "Replace Cells" dialog
- True Scale: Checked
- Replace Tags: Unchecked
- Replace User Attributes: Unchecked
- Relative Levels: Unchecked

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Method Replace  Method Single Mode Single Use Active Cell de_milepoir Use Fence: Inside  I Irue Scale Replace Tags Replace User Attributes Relative Levels	File       Display All Cells In Path       Display         Name       Description         del serve       Description         del Type I White Point Reference Post       Description         del Type I Vellow       Type I Single 'White Delineator         del Type I - Yellow       Type I Single 'White Delineator         del Type II Vellow       Type II Double White Delineator         del Type II - Yellow       Type II Double White Delineator         del Type II - Yellow       Type II Double White Delineator         mm_D10-1       1-digit MILEPOST (conventional highway)         mm_D10-2       2-digit MILEPOST (conventional highway)         mm_D10-3       3-digit MILEPOST (conventional highway)         mm_D10-3       3-digit MILEPOST (conventional highway)         mm_D10-5       US ROUTE SHIELD (conventional highway)         mm_D10-5       US ROUTE SHIELD (conventional highway)	
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#### Quantities

Quantities for mileposts and delineators are entered into <u>Tabulation 190-25</u>, Reference Location Signs and Delineators.