CELLS

February 4, 2013

Frequently Asked Questions

Can I use my own cell library and cells?

Yes, you are free to create as many libraries and cells as you need. You will need to maintain and save them yourself. If you have cells that you feel should be added to Roadway Design's cell libraries, please contact the CADD support team. It is critical that the cells you create are done using RWD standard levels and working units.

What is a point cell?

A point cell will only have one "snappable" point - its origin. It is always placed on the current active level, regardless of what level it was created on. A point cell is also view independent, which means it will always maintain its original appearance in the view, regardless of how you rotate the view. We highly recommend that you DO NOT use points cells because of the reasons mentioned.

When I draw a cell, what is the best way to do it?

There are several things you should keep in mind. First, it is best to draw all the elements for the cell on the level(s) that you want it placed in the design file. Second, you should draw your cell to a size that will be proper for a specific active scale, the active scale will be the same as the plot scale. For example, If you place a cell at an active scale (as=) 100. Then the cell would be the correct size for a 1"=100' plot. Another item to consider is that you create the cell in the same design file units as the seed file you will be working with when placing the cell. **There is a section in this document that explains this.**

Should I create cells to do linear patterning?

You can create cells for linear patterning, but you should **read the section on this topic first**. User defined line styles are much better, but creating and using them can be complicated. Please contact you support if you think there should be more line styles.

Can I get a document with the cells listed?

Due to the fact that we use a large number of cells. It is a bit troublesome to create them in this document. The best way to view cells in the the cell file itself. Open the .cel file with Microstation and use the "MODELS" dialog to switch between cells for viewing. We try to supply a design file with all the cells from that library placed. Look for these dgn files in the folder with this help file (rwdcell.dgn, signcell.dgn, details.dgn, etc.)

I need to scale down all my cells in a design file for another plot scale, how do I do this?

You should avoid multiple scales of the same drawing if possible, but sometimes it can't be avoided . All files are created for plotting at one particular scale. In order to have another scale you must create a copy of the file and scale the cells (text and line styles also). For example, the original file was done to support 1"=100' plotting. If you want a 1"=20' file you will have to copy the first file and then scale down

all the cells. In this case you will need to scale down all the cells by 20% or by setting the active scale (as=) to 0.20 and physically scale each cell. We currently have a program in Roadway Design that will scale all the cells in the file without changing the origin of the cell. You can now also get similar results with the scale command with "about element center" selected.

What is causing other cells to be in my cell library?

When shared cells is active it will appear as other users cells are showing up in your cell library. To deactivate this select the ELEMENT > CELLS option to see the Cells Dialog box. Uncheck the "shared cells" box in this dialog.

What is a shared cell?

If shared cells setting is on, the first time you place a cell the elements in the cell are stored in the design file. Subsequent instances of the cell do not require that the cell library be attached. In other words, a shared cell can have many instances in the design file but only one definition. The results in each cell be dependent on the original cell. For example, if you replace one of these cells, it will automatically replace all of them. If you make any modification to one of these cells, it will modify all of them. Shared cells have a tendency to hinder many of the tools we normally used in the design file to modify cells. For this reason, you should NEVER use shared cells.

How Cells Are Drawn In Roadway Design

Most of the cells are drawn so that one (1) inch on the paper equals one (1) foot in a design file. This allows the user's to place cells at an active scale (as=) that is equal to the scale the drawing is to be plotted.

For instance, a Right-of-Way marker cell needs to measure (0.25) inches in diameter on the paper when plotted. To achieve this you must create the cell so its diameter measures (0.25) feet, since one (1) inch equals one (1) foot in the design file. When the active scale (as=) is set to the same scale as the plotting scale the cell will always plot with a diameter of (0.25) inches. In other words, by adjusting the active scale to the final scale you want your drawing, your cells come out plotted the same size every time.

There are a few exceptions to this rule. If the cell is not used as a symbol, and it needs to represent true dimensions, then you will need to create the cell to actual scale and place it at an active scale of one. For example, the legend marking cells needs to be drawn at actual scale, so when it is placed, it measures exactly the standard width in feet. The scale the drawing is to be plotted has no effect on the active scale used to place the cell. In cases such as this, the cell is drawn to scale and when placed, the (as=) is always set to one (1).

Draw your cells in a design file with the same working units as the file you will be placing it in. You should draw the elements of the cell on the levels that you intend the cell to be placed on (use Roadway Design Standard Levels). The most common method of placing cells (the default) is called placing absolute. This just means that the cell is placed on the level it was created. There are instances were a cell is placed on multiple levels. If this occurs, create each element of the cell on the level(s) that it is placed. For example, if you were creating a power pole and with text next to it. The power pole element is created on the level it is placed and the text element is created on the level it placed.

Cells Used In Linear Or Area Patterning

In Microstation, any element patterned will always take on the attributes of the cell used as the pattern cell. For example, if you draw a line with co=2. You then pattern the line using a cell with its elements set at co=5. The appearance of the finished patterned line will change to the color or the cell, which is 5.

Linear patterning that includes text needs the text to appear in such a way that it can be read from left to right or from bottom to top of a plotted sheet. To achieve this the user needs to identify the element to be patterned and then orientate the next point in the direction the text is to be read.

Linear patterns, in the most part have been replaced with "user-defined line styles". Creating line styles is a fairly complicated issue so you should check with you support team to see if they can add line styles for you.

If you decide you want to create a cell to use as a pattern make sure you draw the cell in a design file with the same working units as the file you will be placing it in. Draw the elements of the cell on the standard levels you intend the pattern cell to be placed.

Placing Cells In The Design File

Any cell placement or linear pattern command can be done manually by using in the proper (Retrieve/Attach cell library, rc=), (Active Scale, as=), (Place Active Cell, ac=), (Set Active Pattern Cell, ap=), (Set Pattern Scale, ps=), and other key ins and dialog boxes.

In Roadway Design, menus have been created to do these things for you automatically.

If you want to place a cell manually, you should place them using the "absolute" method, unless you have a specific reason not too. Absolute mode means that you are placing the cell on level it was created. The absolute method is not listed on the place cell tool because it is the default method of placement. Just check to see it the "relative" mode is checked. If it is not checked, then you are in absolute mode.

Relative mode, allows you to place the cell on the active level, instead of the level it was created. If all the elements that make up the cell are confined to one level you shouldn't have any problems placing that cell in relative mode. For example if you have a arrowhead cell that was created on a level called "miscellaneous" and you would rather place it on the current active level called "x_row_tx", then you should set the active level and turn on "relative" before placing the cell.

You can encounter problems with relative mode when your cell has multiple levels. For example, if you have a large detail drawing that is made up of many levels and it was made into a cell. If you try to place that cell relative, Microstation tries to consider the original element levels to the current active levels. If the cells level numbers and attributes don't match, the placement could fail to place and you will receive and error message.

Converting Cells Between English And Metric Libraries

This procedure explains how to convert Roadway Design cells between English and metric.

When elements are drawn in a English unit design file and saved as a cell the cell cannot be placed in a metric design file unless a odd scale is used, and vice-versa.

If using Roadway Design's current seed files you can use the **active scale 0.1267 (AS=0.1267)** to change the size of the cell to it's proper scale.

You can follow these procedures to convert cells in an English Cell Library and place them into a metric cell library:

1. Enter a Metric design file.

2. Attach the English cell library.

3. Set your active scale (AS=0.1267) and place the cell. This would be the same as placing the cell at an active scale of one (1) in an English design file. This scale factor only works within Roadway Designs seed files.

4. Drop the cell status of the cell.

5. Modify the cell, if needed. Modification usually only occurs if the cell has unit text that needs to be edited.

6. Attach metric cell library.

7. Save elements into metric library.

The procedure to convert a metric cell to an English cell is the same except for entering different files:

1. Enter an English design file.

2. Attach the Metric cell library.

3. Set your active scale (AS=0.1267) and place the cell. This would be the same as placing the cell at an active scale of one (1) in a Metric design file. This scale factor only works within Roadway Designs seed files.

4. Drop the cell status of the cell.

5. Modify the cell, if needed. Modification usually only occurs if the cell has unit text that needs to be edited.

6. Attach English cell library.

7. Save elements into English library.

Standard Roadway Cell Libraries

Cells can be viewed by opening the cell dialog and attaching one of the following .cel files. This does not provide a large view of the cell so we recommend to opening the .cel file directly with Microstation and using the MODELS dialog to view each cell.

RWD.CEL

This cell library contains most of the commonly used cells in Roadway Design. The exclusion are pavement marking cells, sign cells, and drainage flared end section cells.

PM.CEL

This cell library contains only pavement marking cells. This would include things such as, legend markings, raised markers, etc.

SIGNS.CEL

This cell library contains only sign cells. This would include construction signs and many others. The library may not contain some signs, such as handicap signs which are not normally shown on our plans.

FES.CEL

This cell library contains only drainage flared end section cells. The library only contain plan cell depictions and does not contain cells for usage on cross sections or typical sections.

ADDITIONAL CELL LIBRARIES

NOTICE and WARNING: the cell libaries listed below contain user-contributed cells. These cells have not been checked for accuracy and are not updated. They should not be considered as standard and should be checked and updated to match current CADD requirements.

We currently have three additional cell libraries that contain details drawings and typical section drawings.

DETAILS.CEL : contains miscellaneous detail drawings.

TYP.CEL : contains user contributed typical section drawings.

TITLE.CEL : contains drawings that might be useful when creating Title Sheets.
