

## 2.9 **CALTRANS Cell Libraries**

### A. Introduction

A Cell Library contains Cells which represent symbols, details and borders that are available to all users, which conform to Caltrans design specifications and drafting standards. Cells eliminate the need for each designer/delineator to redraw frequently used standard symbols, details and borders.

There are two types of cells that are utilized by Caltrans, point and graphic. The symbology (level, color, style & weight) of a point cell is determined at the time the cell is placed (takes on the active settings). The symbology of a graphic cell is determined when the cell was created, and is independent of the active settings. Most Caltrans cells are graphic cells which means that the functional unit that created the cell has predetermined the level, color, style & weight.

Another difference between a point and graphic cell is its display related to rotated views. A graphic cell will rotate (with respect to the window) while a point cell will not rotate (with respect to the window).

There are three Cell Libraries that are issued for statewide use.

<b>Discipline</b>	<b>Name</b>
Highway Projects	CTCELLIB.cel
Structure Design Projects	stcel.cel
Right of Way (mapping products)	RWEnglish.cel

**Each cell in all three Cell Libraries are shown in the Appendix of this manual.** Districts, and some functional units within various districts, may have their own cell libraries. This usually occurs because of local agency standards or standards unique to a certain functional unit. Districts or individuals should not recreate or copy cells that are already in one of the three statewide issued cell libraries.

Within the Caltrans English Cell Library (ctcellib.cel) there are cells for eight different functional units. The table below lists the eight units.

Project Plans
Roadway Design
Landscape Architecture
Traffic Electrical
Right of Way (old cells) under Roadway
Photogrammetry
Surveys
Water Pollution Control

Note: The cells in “ctcellib.cel” for Right of Way are used by design to depict right of way features in a design project. Right of Way Engineering created a cell library (RWEnglish.cel) for producing Right of Way mapping products and is not used for designing highway projects.

## B. Definitions

The following is a list of definitions concerning cells and cell libraries.

Cell	A grouping of graphical elements identified by name which can be placed an unlimited number of times to an unlimited number of graphics files.
Cell Library	A file that contains cells. This file can be simultaneously shared by any number of design files. Only one Cell Library can be attached to a MicroStation file at a time.
Cell Selector	A feature in MicroStation that allows a user to view and place cells which were pre-selected. A Cell Selector can contain cells from more than one Cell Library.
Nested Cell	A cell that contains another cell. (This sometimes leads to the corruption of the cell).
Cell Origin	The Cell Origin is the handle point of the cell. The exact placement of a cell is determined by its origin. Each cell must have an origin before it can be created as a cell.
Drop Status	The operation of disassociating the graphical elements from their grouping as a cell.
<b>Cell Uses</b>	
Terminator Cell	A cell used at the beginning or end of a linear element such as a line or arc.
Pattern Cell	There are two types of pattern cells. A cell used in a repeated application along a linear element is a linear pattern cell. A cell used in a repeated application to pattern a closed area (shape) is an area pattern cell.
<b>Cell Types</b>	
Graphic Cell	A cell that retains the symbology (level, color, style & weight) of when it was created.
Point Cell	A cell that takes on the symbology (level, color, style & weight) of the active settings.

<b>Cell features/options that Caltrans does not utilize</b>	
Relative	If the active cell is a graphic cell and <b>Relative</b> is turned on, the lowest level in the cell is placed on the active level and higher levels in the cell are placed relative to the active level.
Interactive	Allows a cell to be interactively scaled to any size.
Shared Cells	Are associated with other elements. The cell origin is associated with a point on the other element.
Nested Cells	Not utilized at Caltrans

### C. Cells and Caltrans Base Scale (Roadway)

All cells in the Caltrans English Cell Library (ctcellib.cel) are based on the Caltrans base scale of 1" = 50'. In MicroStation, if cells are placed at a scale of 1, they will be at the correct size for a 1" = 50' plotting scale.

To use another acceptable plotting scale (1" = 20' or 1" = 100'), the scale of placing any cell is determined by the ratio value; **desired scale** divided by the **base scale**.

$$\begin{array}{rcl} 1" = 20' \text{ (desired)} & \frac{20}{50} & \\ 1" = 50' \text{ (base)} & & = \mathbf{0.4} \end{array}$$

All cells that are to be plotted at a 1" = 20' plotting scale will need to be placed at a scale of 0.4.

The size of cells, text/annotation/dimensioning and Caltrans custom line styles are to be proportional to the Standard Caltrans Border Sheets, and are also subject to the determined ratio value.

Note: Standard border sheets for consultants have been added to the English Cell Library (ctcellib.cel) as of November 2006, which have predetermined areas for the name and address of the consultant preparing the plans and the local agency if necessary. The text height and width (TX) for consultant name and address in a DGN file is 7 feet (for 3 lines of text) at a 1" = 50' plotting scale, and 6 feet (for 4 lines of text).

Note: Do not use any cell with linear patterning for the annotation of alignment lines (even though cells may have been used in the past and may still exist). Stationing with linear patterning is not accurate enough.