

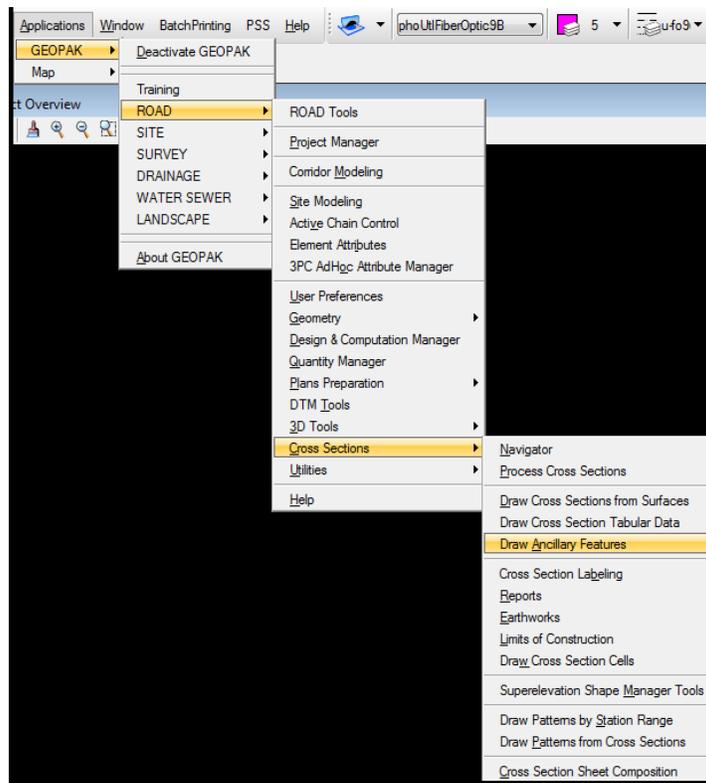
# Drawing Utility Symbols with GEOPAK Ancillary Features

Design Manual  
Chapter 21  
Automation Tools  
Instructions

Originally Issued: 05-15-14  
Revised:

## Accessing the Draw Ancillary Features Tool

The Draw Ancillary Features tool will enable the user to draw utility locations onto cross sections. Ancillary features are drawn at a specified elevation. The Draw Ancillary Features tool can be accessed from the GEOPAK menu as shown below.

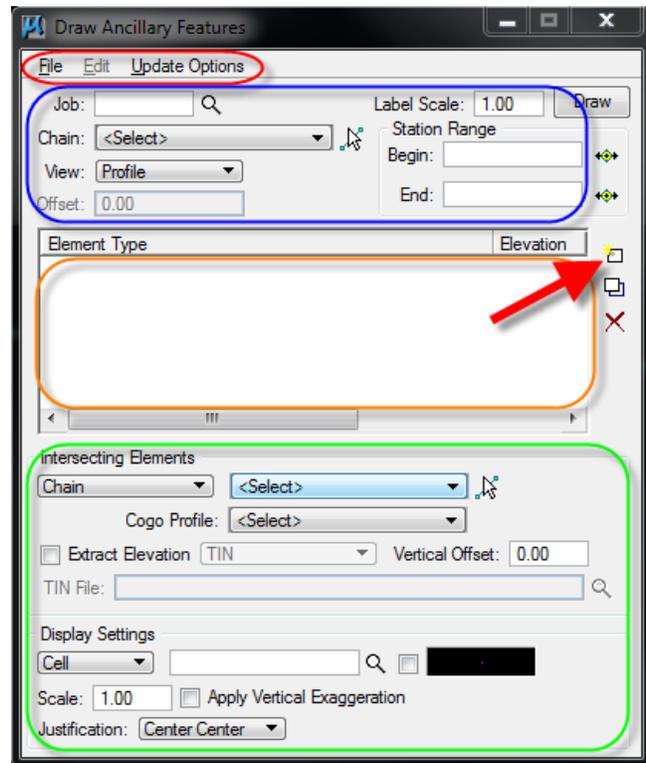


When activated, the Draw Ancillary Features dialog should look as shown.

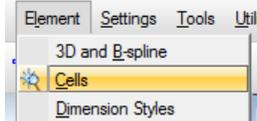
Along the top (Red oval) is the menu bar. **File** allows the user to save settings, load settings, or exit the dialog box. **Edit** has options to save settings or clear list. **Update Options** contains different options that the user can set to define how the ancillary data will be drawn.

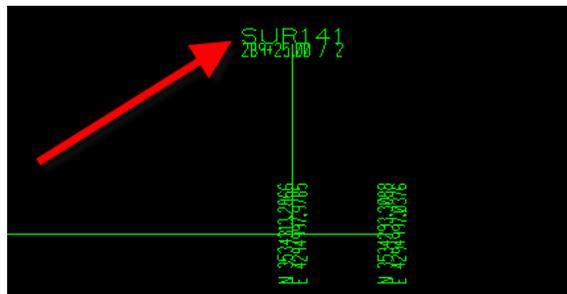
The next portion of the dialog (Blue oval) contains your job information. **Job** number will be your gpk required to identify the correct cross section cell. **Chain** will be the chain used to create the cross sections. **View** options are Profile and Cross Section. Select Cross Section.

The bottom of the dialog box (Green oval) is the settings for the intersecting elements. For each utility to be drawn in the cross section, the ancillary feature must be added to the list box (Orange oval).



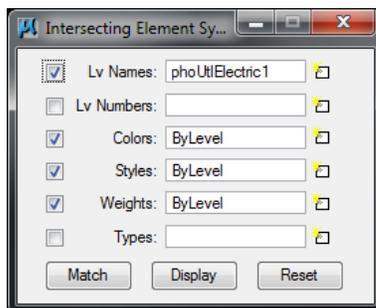
## Placing Utility Symbols on Cross Sections

1. Open the Microstation file that contains all the surveyed utility information.
2. From the Microstation menu bar, choose Element>Cells. 
3. From the cell library dialog, choose File>Attach File.
4. Navigate to <pw:\Documents\Standards\RoadDesign\Microstation\Cells> and select dsnUtilityCells. Then close the cell library dialog box.
5. Open the Draw Ancillary Features dialog box.
6. Select the Job number.
7. Set the Chain to match the chain used to create the cross sections. The chain name will be at the top of the cross section cell.

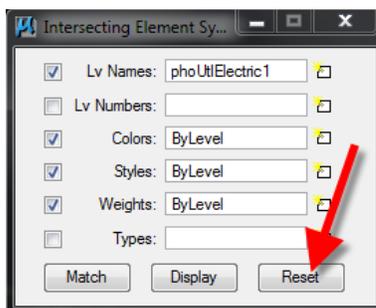


8. Set View to Cross Section.

- Under Intersecting Elements, change the mode to Level Symbology. You can then select the magnifying glass to match the element attributes to the utility level in the plan view. Toggle on Lv Names, Colors, Styles, and Weights, and then select the Match button. Click on the appropriate line in the plan view to set the element attributes. When populated, close the Intersecting Element Symbology box by clicking on the red X.

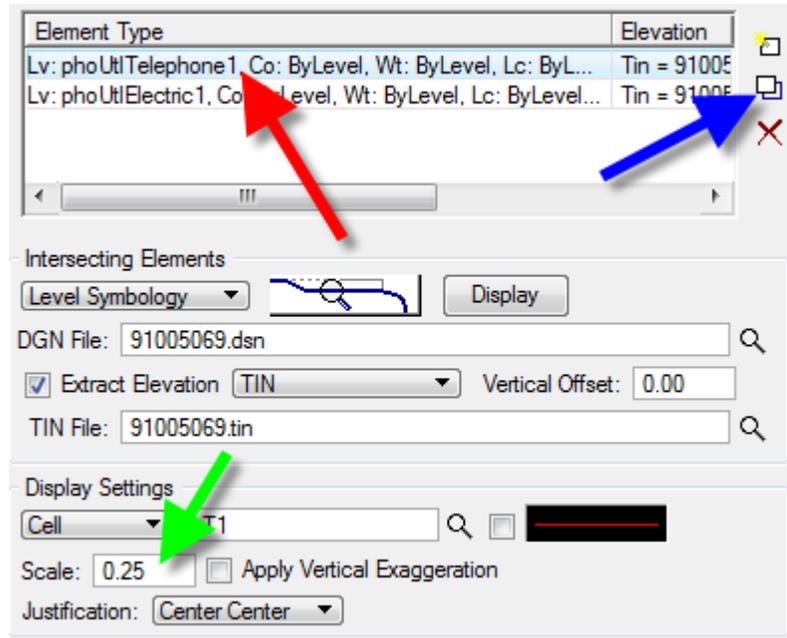


- Set the path to the DGN File that contains the surveyed utility information that you matched in Step 6.
- Toggle on the Extract Elevation and set the mode to TIN. Then set the path of the tin file location.
- Under the Display Settings, set the mode to Cell.
- Using the magnifying glass under the display settings and select the corresponding cell that matches the level you identified in Step 9. The linestyle and cell name will be the same. Then select OK.
- Depending on the size of your cross sections, the scale may need to be adjusted.
- Under Justification, set the mode to Origin.
- Then select Add Element Set (Red arrow in photo above) to apply these settings to the list box.
- Repeat Steps 9 through 16 for each different utility to be drawn into your cross sections. Be sure select Reset before setting the attributes of the next level.



- Once everything has been added to the list box, open up the cross section file you want the utility cells drawn in. Then hit the Draw button. The utility cells should now be shown on your cross sections.

19. If the size of the utility symbols is drawn incorrectly, the scale can be adjusted. Select the appropriate element set in the list box (red arrow). Adjust the scale size (green arrow) to increase or decrease the size of the utility symbols. If the scale was previously set to 1, changing the scale to 0.5 will scale the utility symbols to  $\frac{1}{2}$  of the size. Then select the Modify Element Set (blue arrow) to apply the changes.



20. Before selecting the Draw button, change the Update Options along the top of the Draw Ancillary Features dialog box to Delete Existing Elements and Redraw. This will delete any previously drawn ancillary data in the current Microstation session and redraw it with the current settings.

## **Chronology of Changes to Design Manual Section:**

### **021B-023 Drawing Utility Symbols with GEOPAK Ancillary Features**

5/15/2014 NEW  
New