IOWADOT

Office of Design

Typical Component Tools

Design Manual
Chapter 21
Automation Tools
Instructions
Originally Issued: 05-12-10
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This section addresses the following:

- Typical component program,

- Typical component checker, and

- Tabulations:

    o Tab text parameters.

    o Tab extender.

Typical Component Program

The Typical Component program was created to assemble typical cross sections of roadways using the typical components. This tool can be accessed from Geopak D&C Manager as shown in Figure 1:
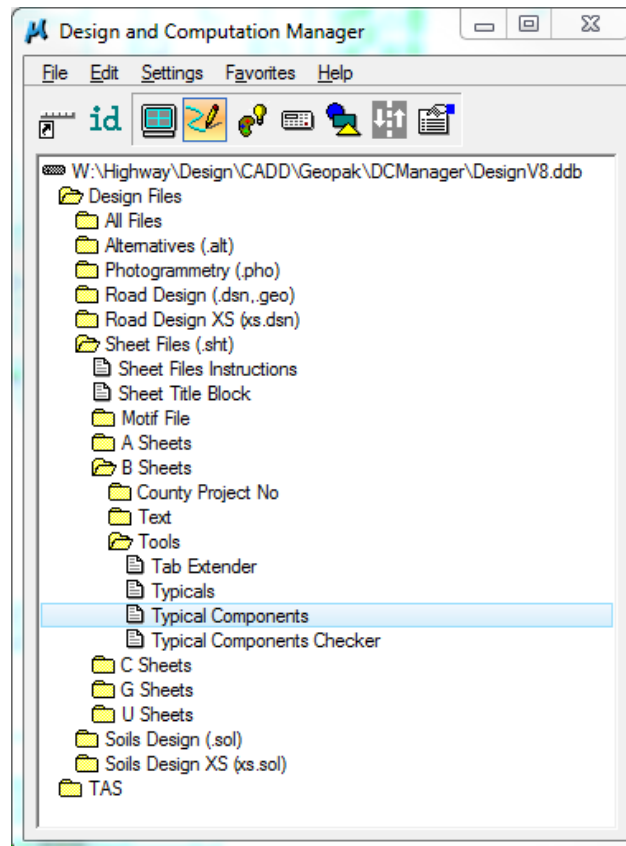

Figure 1: Accessing the Typical Components tool in Geopak D&C Manager.

When the program is accessed, the **Typical Component Selection** dialog is displayed, as shown in Figure 2.
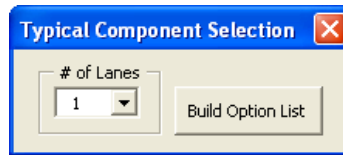
Typical Component Selection

# of Lanes

1

Build Option List

Figure 2: Typical Component Selection dialog box.

The first dialog allows users to choose the basic number of lanes on a roadway. The **# of Lanes** selection is used to filter available options for the type of pavement, auxiliary lanes, and shoulder types pertaining to a certain roadway. Once the **# of Lanes** is selected, users should select the **Build Option List** button. The program will filter the available options associated with the **# of Lanes**. The dialog box shown in Figure 3 is displayed as the program sorts options. The program may require several minutes to sort the options.
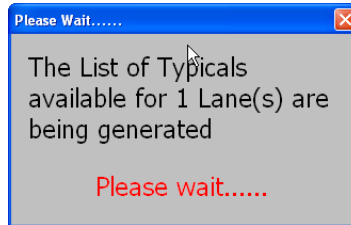
Please Wait……

The List of Typicals available for 1 Lane(s) are being generated

Please wait......

Figure 3: Please Wait dialog box.

Once the program is finished sorting, the dialog box in Figure 4 is displayed.

Typical Components

Right Click Image for Design Manual PDF.

Backbone | Shoulder Left | Shoulder Right | Auxiliary Lane Left | A ◄ ►

1RP_.1010

Ramp PCC Pavement

Name of the component

Component cell name

Counter displaying component and number of component options

◄   ►

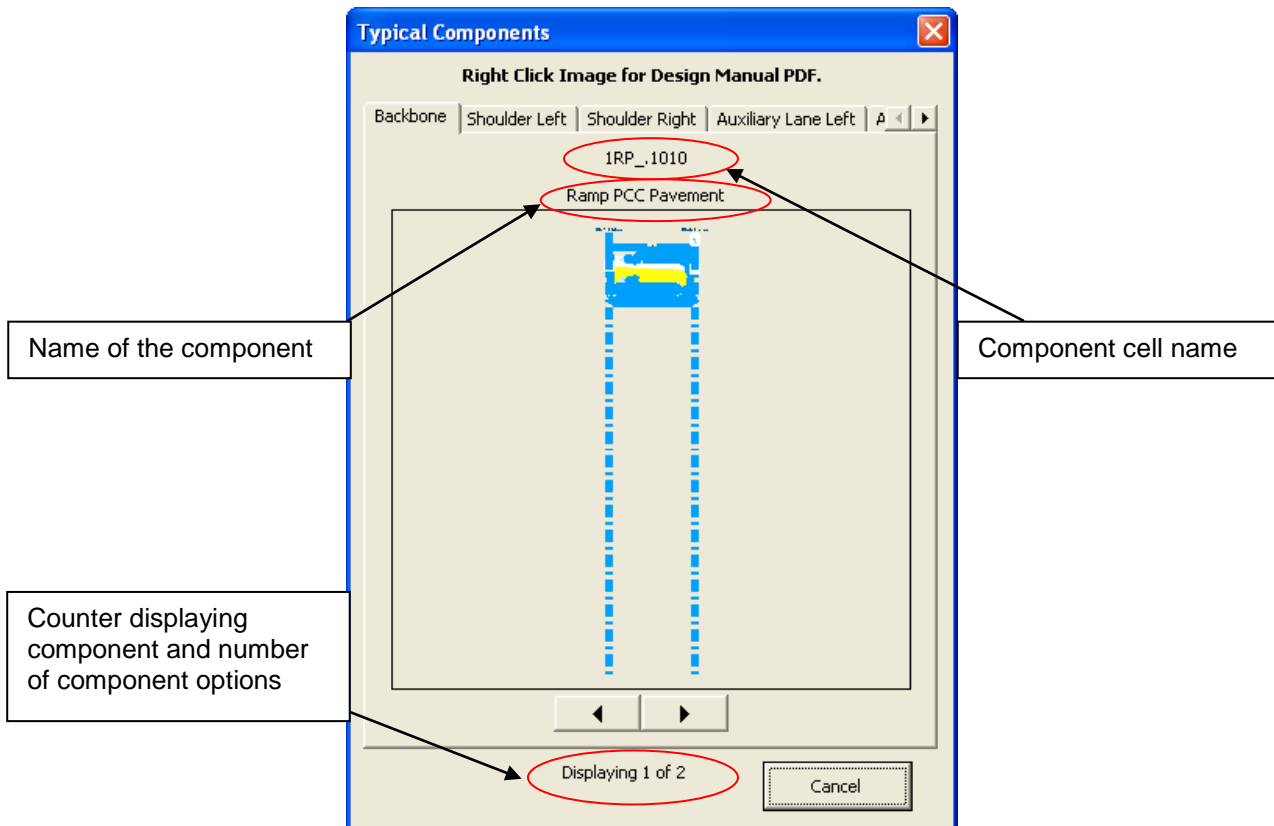Displaying 1 of 2   Cancel

Figure 4: Typical Component dialog box.

The tabs across the top display the different sections of a roadway and sort the component options based on the **# of Lanes** selected on the previous dialog.

Tabs in the Typical Components Dialog Box

Backbone

The backbone tab contains pavement options for the **# of Lanes** selected. Existing pavement conditions are also available for the **# of Lanes**.

Shoulder Left

The shoulder left tab contains shoulder options for the left shoulder.

Shoulder Right

The shoulder right tab contains shoulder options for the right shoulder.

Auxiliary Lane Left

The auxiliary lane left tab contains options for left auxiliary lanes.

Auxiliary Lane Right

The auxiliary lane right tab contains options for right auxiliary lanes.

Auxiliary Lane Shoulder Left

The auxiliary lane shoulder left tab contains options for shoulders associated with left auxiliary lanes.

Auxiliary Lane Shoulder Right

The auxiliary lane shoulder right tab contains options for shoulders associated with right auxiliary lanes.

Note: Right and left pertains to the direction of travel for the one or multilane roadways. Right and left for two lane roadways pertain to right or left of the centerline of construction.

Options in the Typical Components Dialog Box

The following options are available in the dialog box shown in Figure 4 above:

- **Left Click**: A left click on the component will select the component.
- **Middle Click**: A middle click on the component will launch Internet Explorer to the Design Manual page explaining the concept behind the typical component process.
- **Right Click**: A right click on the component will launch Internet Explorer to the Road Design Detail page of the displayed component.

Placing Components

To place a component the designer should select the desired component with a left click.

The backbone component should be selected first. When a backbone is selected a dialog appears instructing the designer to select the top left corner of the sheet, as shown in Figure 5.
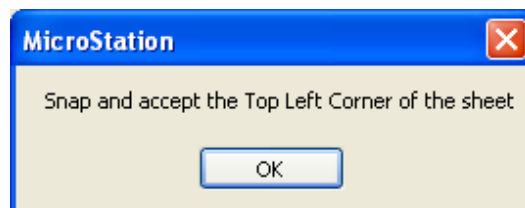

Figure 5: Placement dialog box.

The designer should select the **OK** button and snap to the upper left corner of the sheet. This places the backbone on the center of the sheet.

The designer should then select the predominant shoulder type on the roadway and place with the backbone component.

Additional shoulder types and auxiliary lanes should then be placed as they are encountered on the roadway. The additional components should be placed below the backbone and predominant shoulder type on the sheet. The designer should use the match line associated with backbone component to place the additional components in the proper location.

For more information on assembling typical cross sections, refer to Section 1F-3a.

Typical Components Checker

The typical components checker tool was developed to compare the components within the microstation file with an index of the latest version of the components. Once the tool is accessed, the program will scan the file and alert the designer to outdated components. The designer will need to decide to replace the component.

This tool can be accessed from Geopak D&C Manager as shown in Figure 7.
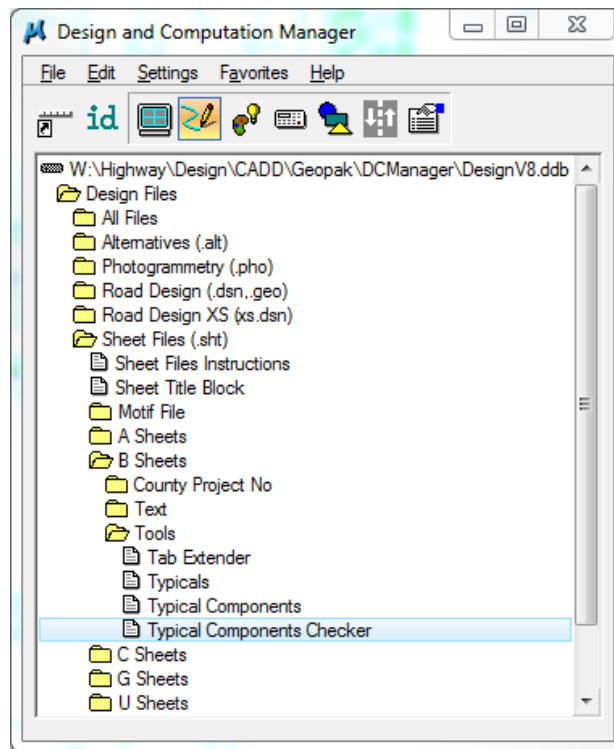

Figure 6: Accessing the Typical Components Checker tool in Geopak D&C Manager.

Tabulations

Tabulations are associated and placed with each component. The designer should refer to Section 1F-3a for additional information on filling out tabulations.

Tab Text Parameters

Tab text parameters can be set using Geopak D&C Manager. Tab text parameters can be set by the selection shown in Figure 7.
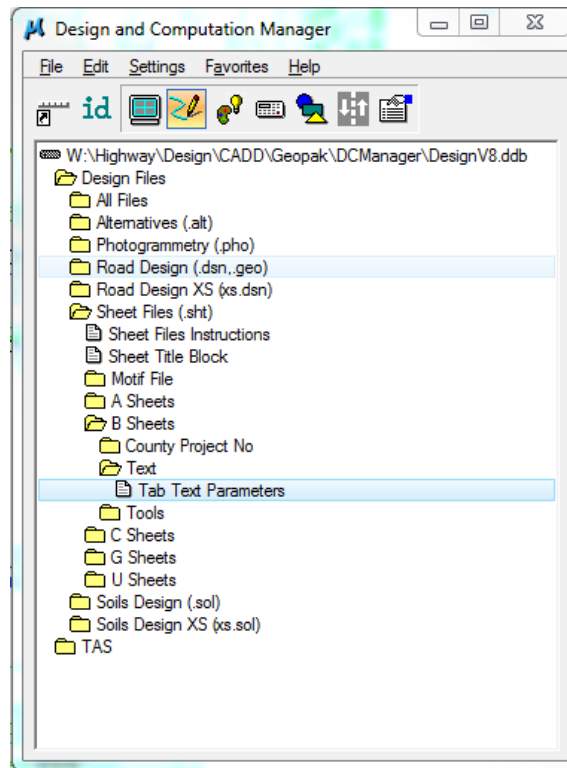
Figure 7: Accessing the Tab Text Parameters tool in Geopak D&C Manager.

Tab Extender

The tab extender tool is used to add rows to tabulations. Once the tool is selected from D&C, rows can be added by choosing the number of rows to add and then selecting the tab.

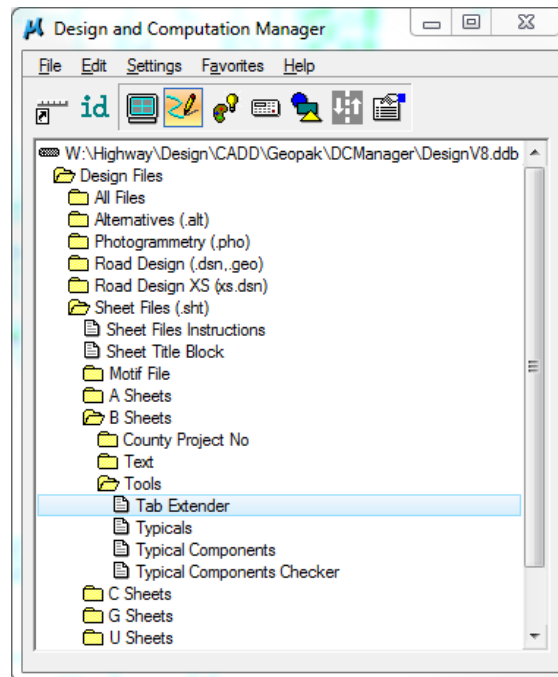This tool can be accessed from Geopak D&C Manager as shown in Figure 8.

Figure 8: Accessing the Tab Extender tool in Geopack D&C Manager.

Chronology of Changes to Design Manual Section:

021B-155   Typical Component Tools

5/15/2014

Revised to add in all of the tools available for typical components.

9/30/2011   Revised

Updated hyperlinks from incorrect Section 1F-5 to Section 1F-3a.

5/12/2010   NEW

Section was created to guidance on using typical componenet tool.