**D&C Manager: Obtaining Automated Quantities**

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**Tool Palletes**

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The RD_DDB tool box is used to open the D&C Manager with the proper DDB.
- A- Alignments
- P- Payitems
- D- Drafting Tools
- H- Hearing Map

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**Pay Item Element Placement**

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After starting the Payitem DDB in D&C, select the Design Mode.



Select the pay item you wish to place. Make sure the place influence toggle is on to ensure attachment of the Geopak attribute. In order for the element to be accounted for in quantities, the Geopak PayItem attribute must be present.



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Most pay items have an underlying MDL app that is launched by double clicking the item. These apps are designed to automate the placement of the item by performing the setup required for various element types.

Some examples:

- Double clicking on the 1'-6" and 2'-6" curbing items launches an MDL app that will queue the Copy Parallel command.
- Double clicking Guardrail Anchor Units or Pipe Collar items launches apps that set the active cell, sets the terminator scale then queues the Place Line Terminator command.

Many of these apps also provide extra functionality such as dynamic rotation of the placement cell after it's location has been anchored; and automatic label text placement. When elements are being used that do not require any rotation use the Accudraw tool while the MDL app is in the dynamic rotate mode.

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Before placing payitems represented by shapes, you should read Recommended Settings and Methods of Calculations

It is recommended that the payitems under the Misc.Areas category be placed in a separate file (estimate_areas.dsn, for example). This file and all other files containing payitems will then be referenced to the file from which the quantities are to be computed.

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**Sidewalks and Islands**

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Sidewalks and Islands will be placed in the roadway *.dsn file. These items will plot outlined and shaded a light gray.
To place Sidewalks and Islands:

- -Place the elements that will compose the sidewalk or island by your prefered method without D&C manager.
- -Toggle on Place Influence
- -Double clicking the appropriate item on D&C launches starts the MicroStation command Create Complex Shape.

- -Select the individual elements to create the shape for your island or sidewalk

**Do not** break Curb&Gutter lines at driveways! Let the Curb&Gutter run through the driveways. D&C manager is set up to automatically deduct the width of the drives (and the radii) from the Curb&Gutte values.

### Adding Item Attributes to Existing Elements

The D&C manager has a SET feature that allows you to place the Geopak Attributes on an element that already exists in the design file.
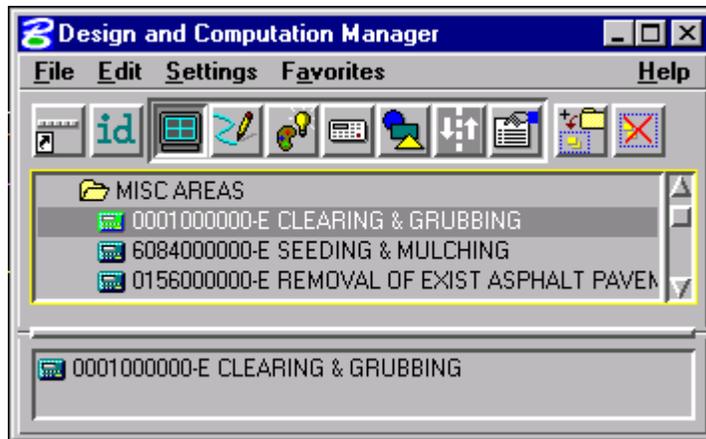
To SET an element:

- Select the payitem category that you need to set.

- Switch the D&C to Set Mode by depressing the SET tool on the D&C dialog.

- Press the SET button on the auxiliary window that appears.

- Select the element(s) in the design file that you wish to SET.

Geopak Attributes have now been placed on that element.

### Display Mode

Pressing the Display button shown above activates the Display mode. This dynamically changes the D&C dialog:



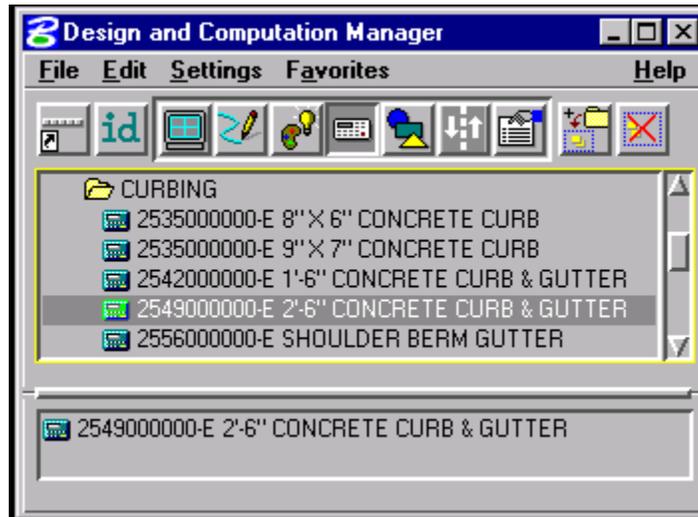An auxiliary box is also invoked:



The four icons are (from left to right):

- Normal Display (default that displays all elements)
- Highlight Selection (uses MicroStation highlight color to highlight payitem selected from list in D&C manager)
- Hide Selection (displays all elements except payitem selected)
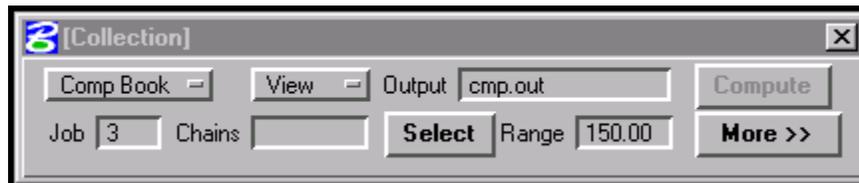- Display Only Selection (displays only payitem selected)

You can display a collection of selected payitems (See below on how to create collections). Display mode can be utilized as a quick check to see if elements have been placed through the D&C manager. If they do not have Geopak attributes, they will not highlight or display except in Normal Display.

**Computing Quantities**

Automated quantities can be ran from any file you choose, but make sure that you have the other files that contain payitems referenced to the working file. Place the Design and Computation Manager in Compute mode so the dialog changes dynamically to reflect the compute operation.
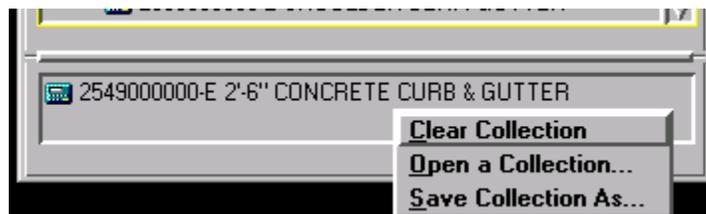


The dialog is resizable with the sash between list boxes that enables the adjustment of the partition. In addition to the main dialog, an auxiliary dialog is also invoked.
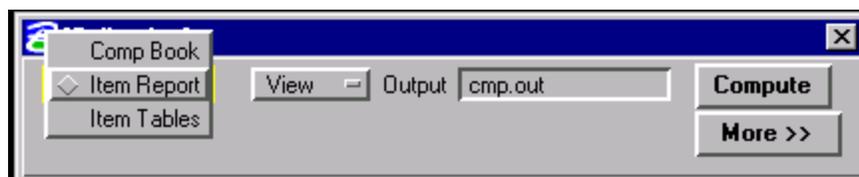


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**Collection Box**

In order for the D&C Manager to compute a quantity, a Category or an Item needs to be selected from the database and placed in the Collection list box.
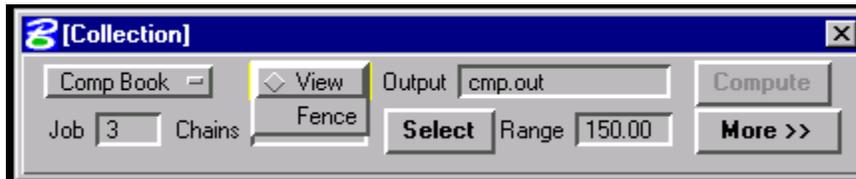
This can be accomplished by double clicking the Category/Item, single clicking onto the desired Category/Item and press the Add to Collection button or right mouse and a small pop-up menu is invoked. Previously saved collection files may be selected from this menu and placed in the Collection list box. The default file extension for saved collections is .col.



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Once the Collection list box is set, the auxiliary box can define various computation options.
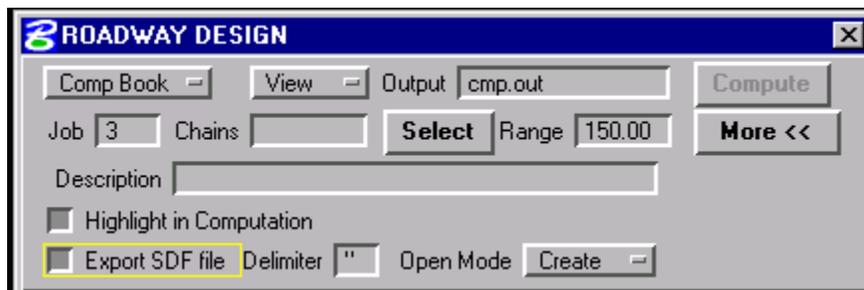
- Item Report: Quantities Summary listing pay items, descriptions, units and quantities totals.
- Item Table: Tabular form of Item Report (This is Transport format).
- Comp Book: Quantity summaries and geometric properties such as coordinates and station/offsets. (Format required to go to Roadway's CompBook.)



View/Fence: If View includes area outside of Range – Range overrides. If a Fence is placed with a Range, the area inside both Fence and Range will be computed. Fence is sensitive to the MicroStation Inside, Overlap, and Clip modes. The Clip mode applies only to non-shape elements.
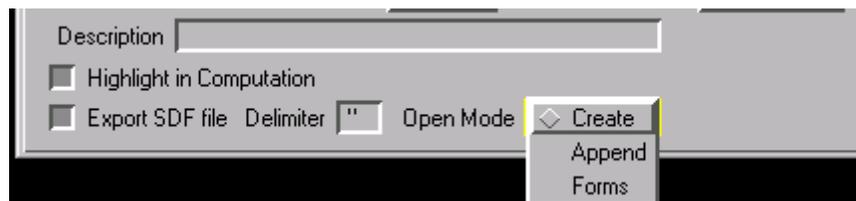
Range: Feet/meters used to search left and right of the chain.

More >>: Expands dialog to display the Description field and option to Export an SDF File.



Description: Any description keyed within this field, up to 48 characters, will be printed at the top of the report.

Export SDF File: The standard output created from the Design and Computation Manager's compute mode is an ASCII text report. However, if the computed results need to be reformatted, or imported into another database this option is recommended. You must use the SDF format to export quantities into Roadway's CompBook.



When activated, a keyin field for Delimiter opens and an Open Mode button appears. The delimiter character should be defined as ("). Create and Append >settings in the Open Mode either create or append the file in the output field. Roadway Design will not use the Forms setting at this time.

**Recommended Settings and Method of Computing Quantities**

It is probably a good idea to visit Roadway's Updates WebPage for any new info and also update your workspace to insure that you have the most updated version of the D&C.ddb before beginning calculations.

A little bit of setup will save you grief later. In order to have quantities stationed off of different alignments (-L-, -Y- etc.), it is recommended that you run quantities using the fence method with the Fence mode set to Clip.

To accomplish this:

- Place a shape, on a non-plotting level, around each alignment. This shape should encompass all payitems surrounding each alignment. It is important that these shapes do not overlap!
- Place a fence on the shape for the -L- alignment.
- On the auxiliary window, select Comp Book, Fence, name the output file,
- Enter job number, Chain, Range (wide enough to get all payitems along
- L- left and right)
- Be sure you have selected Export SDF file, and set Open Mode to Create
- Press Compute
- Place fence on first -Y- alignment
- Change Chain name, and switch Open Mode to Append, all other setting will remain the same.
- Continue this process for each of your remaining -Y- lines.

**NOTE**: Unfortunately, the Clip mode will not calculate most shapes, especially the payitems that cross the fence shapes. So until GEOPAK fixes this or gives us a better method, you will have to intersect your payitem shapes with your calculation shapes.

**Verifying correct payitem placement**

There are several ways to check.

1. Applications>GEOPAK ROAD>GEOPAK Element Attributes, Press the ID element button, then select the element in your design file. The Geopak Element Attribute will display the label (Payitem Attribute) and Value (usually the payitem number). 'No Geopak Attribute' will display in the GEOPAK Element Attribute window if there is not a Geopak Attribute attached to the element.
2. On the D&C Manager, press the ID button. Select the element in your design file. If it has a Geopak Attribute, it will highlight that payitem in the hierarchy. If there is not a Geopak Attribute, you will hear a beep and "No matching database item" will appear in the lower left-hand corner of your MicroStation window.
3. On the D&C Manager, select *Display Mode.* Select the display method that you prefer and then select the payitem in the hierarchy you wish to 'display'.