Grade Files (Creation and Usage)

NCWedge allows for the application of multiple grades within one project file. The program also provides tools to automate the design of resurfacing profiles as well as creation and application of grade files.

The NCWedge Profile Generator is used to design or set a profile grade to the previously computed station control elevations. The resulting profile is stored in a grade file (default extension .grd).

Creation of a grade file does not automatically write station grade elevations into the project file. This is done by the NCWedge Grade File Manager.

Profiles

The **NCWedge Profile Generator** (accessed thru the Grade File Manager), operates from a single large dialog box. Items on this dialog include:

A list box that displays the dg chain stations and control elevations in the project file, referred to as the *Stations ListBox*. Also listed here, grade elevations and the tolerance. The grade elevations are computed dynamically by the program as you lay in your resurfacing grade. The tolerance is the difference between the control and grade elevations. A negative tolerance indicates that the grade you have set is undercutting the control elevation, (but not necessarily undercutting the existing pavement).

A *PI's ListBox* that displays the profile PI stations, elevations and vertical curved lengths.

A *Profile Graph* that dynamically displays the proposed profile overlaid on the control elevations.

A set of text items and pushbuttons that offer input and manipulation of station/region, elevation and parabolic length for the 'current PI'.

An assortment of pushbutton tools.

Typical Procedure

Generally, you should start by using the Auto Grade function, accessed by the **Auto Grade** pushbutton. This function automatically sets a resurfacing grade for the entire range of the control elevations. The program attempts to set the grade as close as possible to the control elevations while maintaining a minimum design level. The only control on design (in the current beta version) is a minimum parabolic length of 100 feet or 20 meters. Future versions will allow user input of minimum curve lengths and design speed. After the preliminary profile is computed, you can adjust, revise or fine-tune it using the editing tools and functions.

Editing is accomplished on one PI at a time. Point/click in the PI's listbox on the PI you wish to edit. The text items in the top center of the dialog are updated with the data related to the PI you select. This is the *Current PI*. You may enter new station/region, elevation and length values. (Remember that the region is on the 'virtual' dg chain!) Any changes to the current PI are immediately reflected in the *Profile Graph* and the *Stations ListBox*. There are also a set of pushbuttons for station, elevation and length; labeled with '+' and '-'. These buttons adjust the values by specified increments. You can change the increment value using the *Preferences* button on the right side of the dialog.

Other editing functions include **Insert** and **Delete** pushbuttons. The **Insert** button opens the *Insert PI* dialog box, which offers three methods of inserting a new PI. Only the first of these methods is discussed in this document; **Insert by DP**. (This dialog will probably be omitted in future versions, offering only the first method of PI insertion via the Insert button.). Press this button and then click in the *Profile Graph* where you want a new PI. The new PI is inserted with a zero length and becomes the *Current PI*.

The **Delete** button will delete the *Current PI*. All deleted PI's are saved in a buffer and can be undeleted at any time using the **Undelete PI** button.

Be sure to save your profile before quitting the Profile Generator. The program will use a default grade file extension .grd.