

Introduction

GEOPAK is a comprehensive software package that covers every project phase from conceptualization to final quantities and construction stake-out. The software works within the MicroStation graphic environment providing *true interactive design*. For example, a horizontal alignment can be created graphically, it can be calculated with the coordinate geometry component of GEOPAK or some interactive combination of the two. Dynamic on-screen design provides immediate interpretation of plan view geometrics for making design choices through visualization.

Using GEOPAK will help ensure consistency and accuracy of design work and generate a significant time savings in the overall effort of producing construction plans.

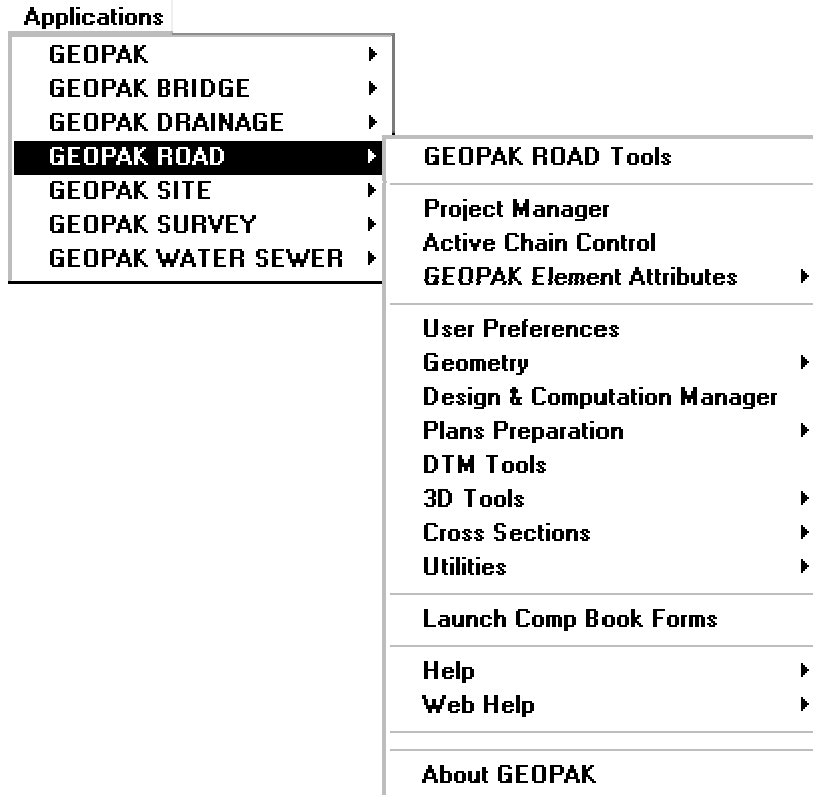
1.1 File Names

GEOPAK uses and/or creates files during the design process. Several of the more common files are detailed in the table below.

job###.gpk	This binary file is created when the user starts a coordinate geometry (COGO) session for the first time or created through Project Manager. The file may be appended to during the design process. All coordinate geometry elements are stored in this file. Multiple users can access this file at the same time, and only one file should be created for each project. The "###" is the only variable in this filename. It represents a job number (up to 3 alphanumeric characters) unique to a project and is defined by the user upon creation.
fname###.ioc Example: align999.ijd	ASCII input file for loading data during a COGO session. "###" represents the job number and "oc" is the operator code (users initials). Filename characters are limited to 5 characters plus the 3 job number character designation as indicated with the example.
fname###.ooc Example: align999.ojd	ASCII output file created by GEOPAK during a COGO session. Variables are the same as defined above. Filename characters are limited to 5 characters plus the 3 job number character designation as indicated with the example.
fname.inp Example: desxs.inp	Any ASCII input file for running GEOPAK processes. Name is user defined with a .INP extension.
fname.dat	A binary file that contains string and point information to be used for digital terrain model construction.
fname.tin	A binary file containing triangular surfaces also known as the digital terrain model (DTM).
Project-name.prj	Binary file resulting from the creation of a new project.

1.2 Accessing GEOPAK

GEOPAK is started upon entering a MicroStation File. To verify that GEOPAK is active, scan the MicroStation menu bar where the **Applications** menu appears. Simply select **Applications > GEOPAK Road**. When each GEOPAK tool is selected, the corresponding dialog box(es) will appear.



To close a dialog box, the following options are available:

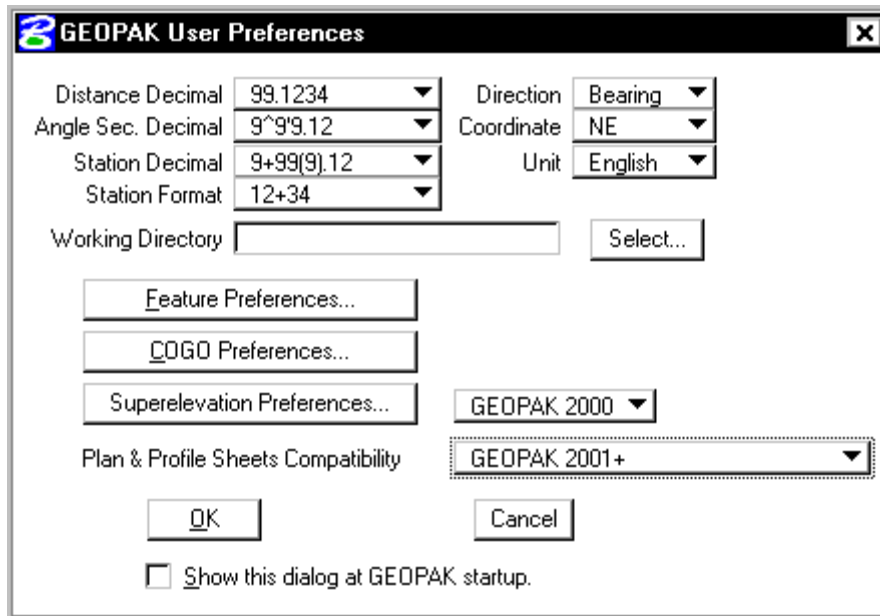
- Click the **X** in the upper right corner of the dialog box
- Select the **File > Exit** option
- Or click **Cancel** on the dialog box

Use one of the above options that appear in the dialog box.

Exiting the MicroStation file automatically closes all GEOPAK dialog boxes.

1.3 User Preferences

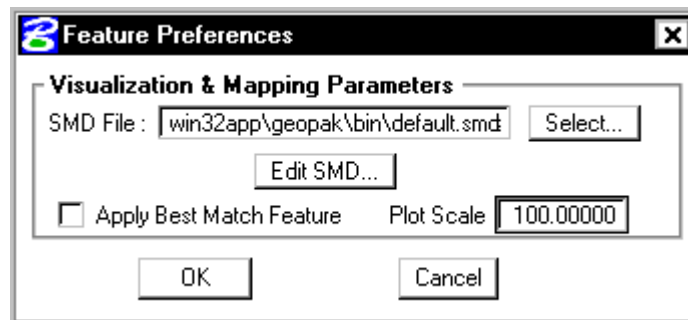
When a user begins Geopak for the first time or after Geopak has been reloaded, there are certain **User Preferences** the user needs to set. The **User Preferences** dialog box can be accessed from **Applications > Geopak Road > User Preferences**. The following dialog box appears.



Most of the settings in this dialog box can be defined when a project is created within Project Manager (See Chapter 2).

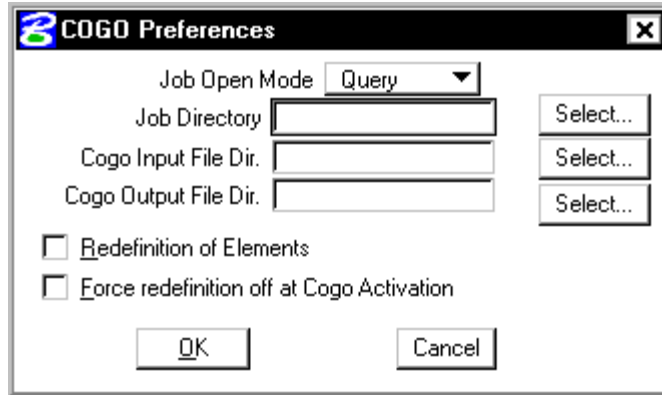
The **Working Directory** identifies where the data files for a particular project can be found. If a user does not want to work within a specific project, the field may be left blank, and Geopak uses the directory wherein the open MicroStation file is located.

By clicking the **Feature Preferences** button, the following dialog box is invoked.



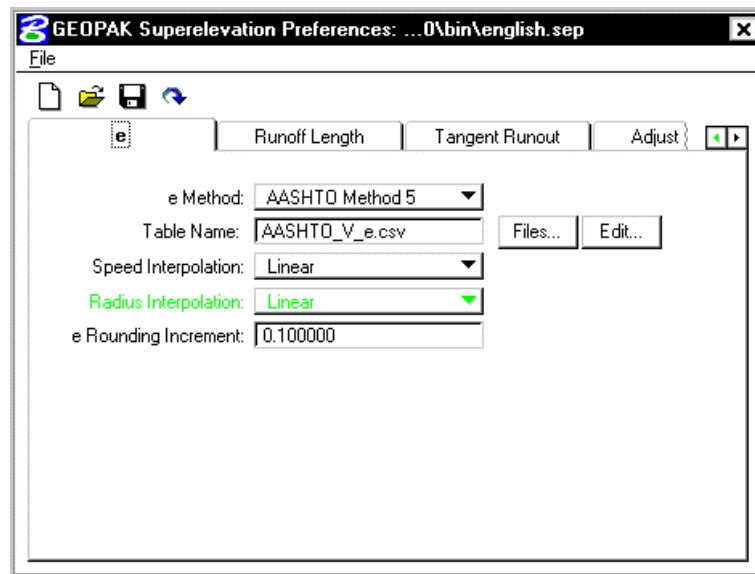
This defines the default file utilized for representation of coordinate geometry and survey elements when visualization is utilized during an active coordinate geometry session as well as the scale in which these elements will be displayed.

By pressing the **COGO Preferences** button, the following dialog box is invoked.



The **Job Directory** field specifies the location of the GPK file. Since multiple people can read and write the GPK file simultaneously, it is possible to have this file on a server or in a shared folder. If any of the above directory fields are blank, they will default to the **Working Directory** set in the GEOPAK User preferences dialog box.

By pressing the **Superelevation Preferences** button, the following dialog box is invoked if your preferences are set to GEOPAK 2000.



This dialog box allows either a standard superelevation preference file to be opened for the active GEOPAK session or user defined settings to be supplied for the current session.

The **Plan & Profile Sheet Compatibility** option menu can be set to **Classic**, **GEOPAK 2001+ or GEOPAK 2001+ with Raster Manager**. Classic enables the original GEOPAK Plan & Profile clip sheet tool, whereas the 2001+ option utilizes a new tool for Plan and Profile sheet generation.

LAB 1: User Preferences

Review of Steps to Define Design Preferences

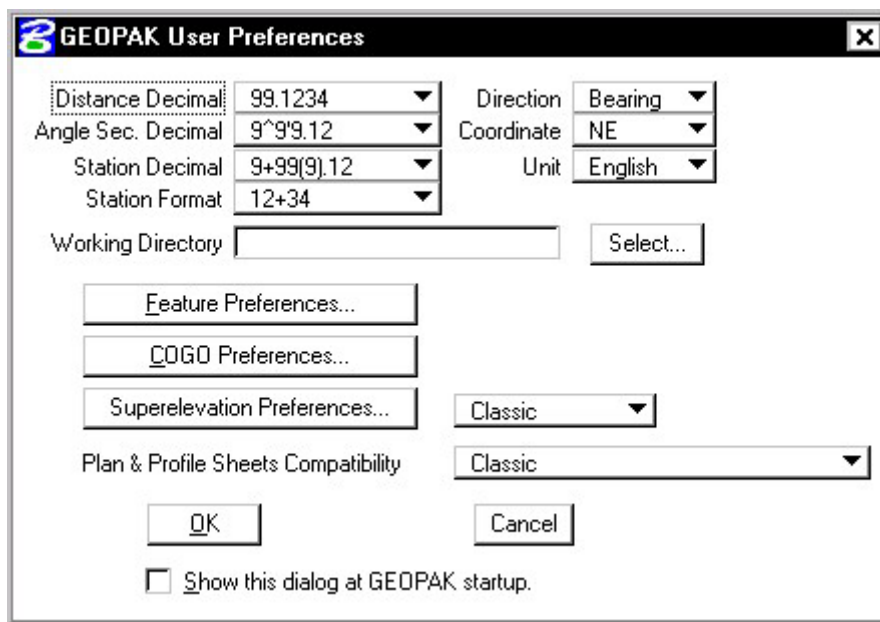
Step 1. Execute **C:\data\geo\vdot\road1\LAB1.EXE**.

Note: Make sure you accept the path and unzip the files to C:\.

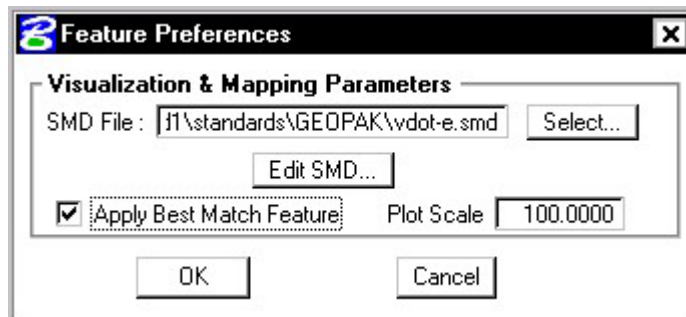
Step 2. Open the MicroStation file **C:\data\geo\vdot\road1\d17682des.dgn**

Step 3. Access the GEOPAK User Preferences dialog box from the Applications pulldown. **Applications > GEOPAK Road > User Preferences.**

The **User Preferences** dialog box appears as shown.

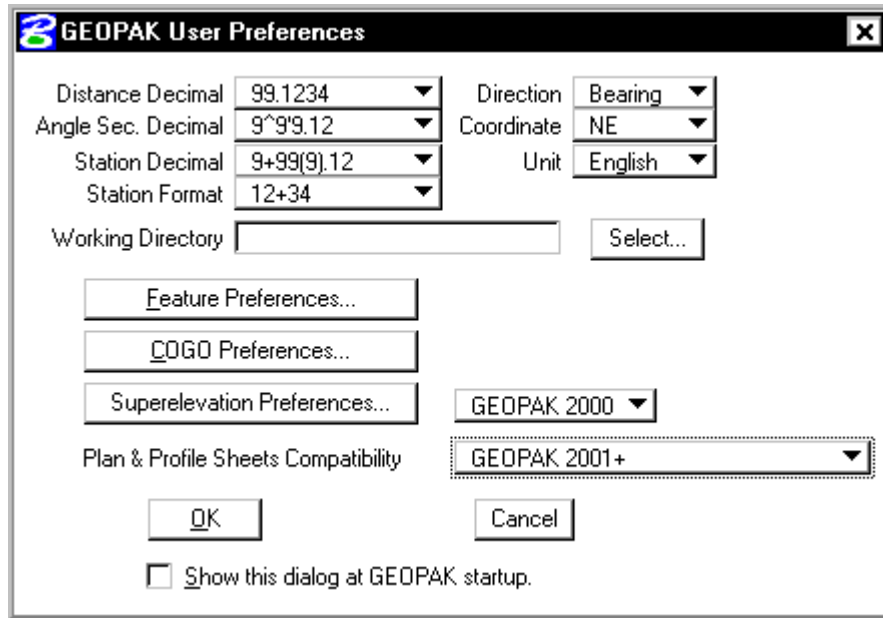


Step 4. Click the **Feature Preferences** button and set the Plot Scale to **100** as shown and toggle on **Apply Best Match Feature**.



Click **OK**.

- Step 5.** Make sure that the Superelevation Preferences option is set to **GEOPAK 2000**.
 Also, set the Plan & Profile Sheet Compatibility option to **GEOPAK2001+**.



- Step 6.** On the GEOPAK User Preferences dialog box, click **OK**.

- Step 7.** **Exit** Microstation.