

Section 3

**INTRODUCTION TO GEOPAK
CLASSICAL COGO**

Geopak COGO

Geopak Coordinate Geometry

COGO is a method of using XYZ coordinates to store geometric elements such as points, lines, curves, spirals, chains, parcels and profiles.

The Geopak COGO tools are dialog and key-in driven.

The file in which Geopak stores all the geometry is called a “GPK file” and it is a binary database can only be viewed through Geopak.

Storing Elements in COGO

The Coordinate System

The coordinate system is defined with XYZ coordinates. The X and Y coordinates define a horizontal plane, while the Z coordinate defines the vertical dimension. The XYZ coordinates can also be referred to as Northing (N), Easting (E), and Elevations (Z) coordinates.

Northing = Y; Easting = X, and Elevation = Z

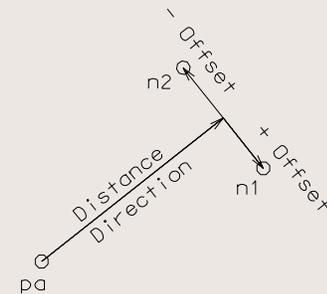
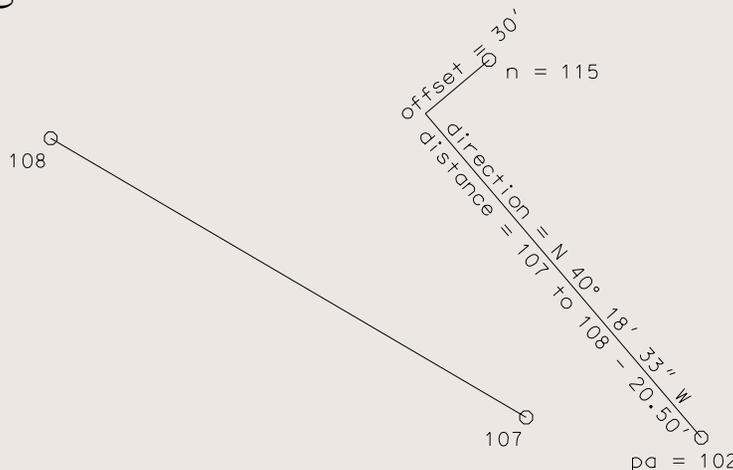
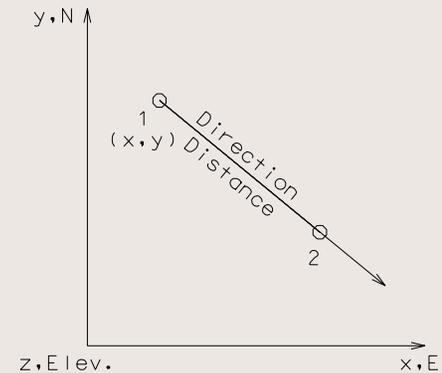
Storing Elements

- All element names can be alpha-numeric. Alphabetic characters must be used before the numeric characters.
- Names can be up to 9 characters in length. Recommend up to 8
- Can use a number of tools to store elements

Storing Elements in COGO

Points

- Defined by single set of coordinates (X, Y).
- May have a Z coordinate if an elevation is defined.
- Names must contain at least 1 numeric character at the end of name.
- Stored from a set of coordinates, or located from existing elements.



loc 115 trav 102 dis 107 to 108 m 20.50 n 40 18 33 w off 30

Storing Elements in COGO

Curves and Spirals:

There are several ways to store curves, spirals and curve-spiral combination in Geopak.

The user must know some of the parameters prior to invoking any dialog boxes.

Depending on what parameters are available, the user may need to store points prior to selecting the most appropriate tool in Geopak.

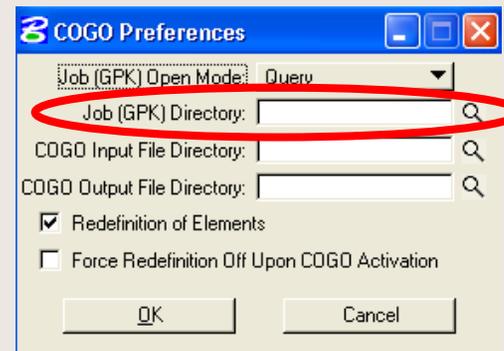
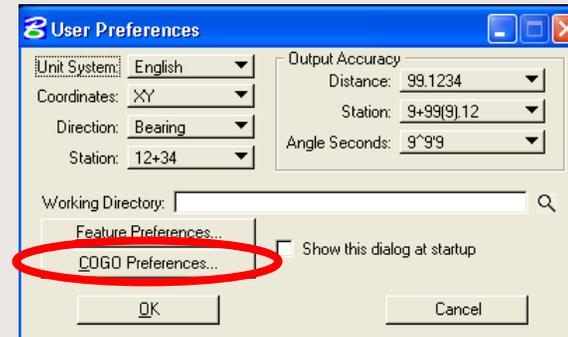
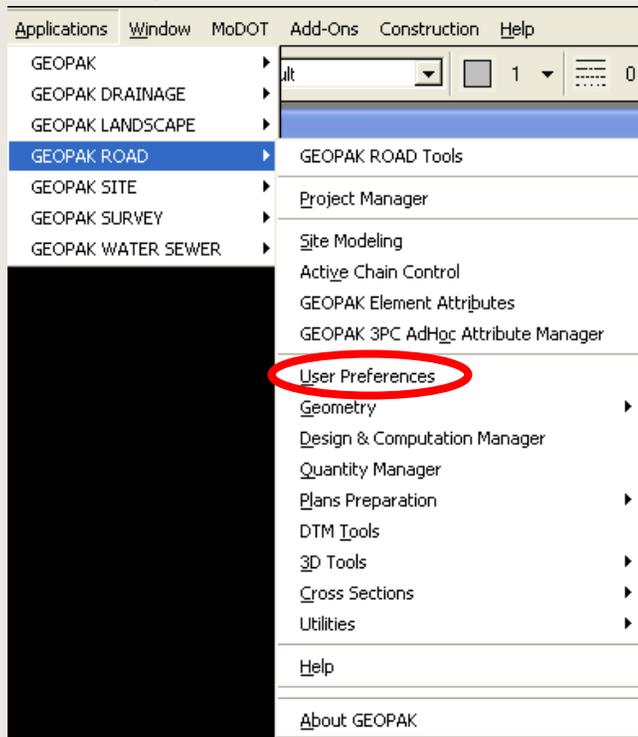
Chains and Profiles:

Chains can be stored once the individual elements are stored in COGO.

The only kind of profile that can be stored directly from COGO is an “offset” profile. Existing and proposed profiles must be stored using another tool in Geopak.

Accessing COGO

Clearing User Preferences



Working Directory: Folder in ProjectWise where your Microstation files reside

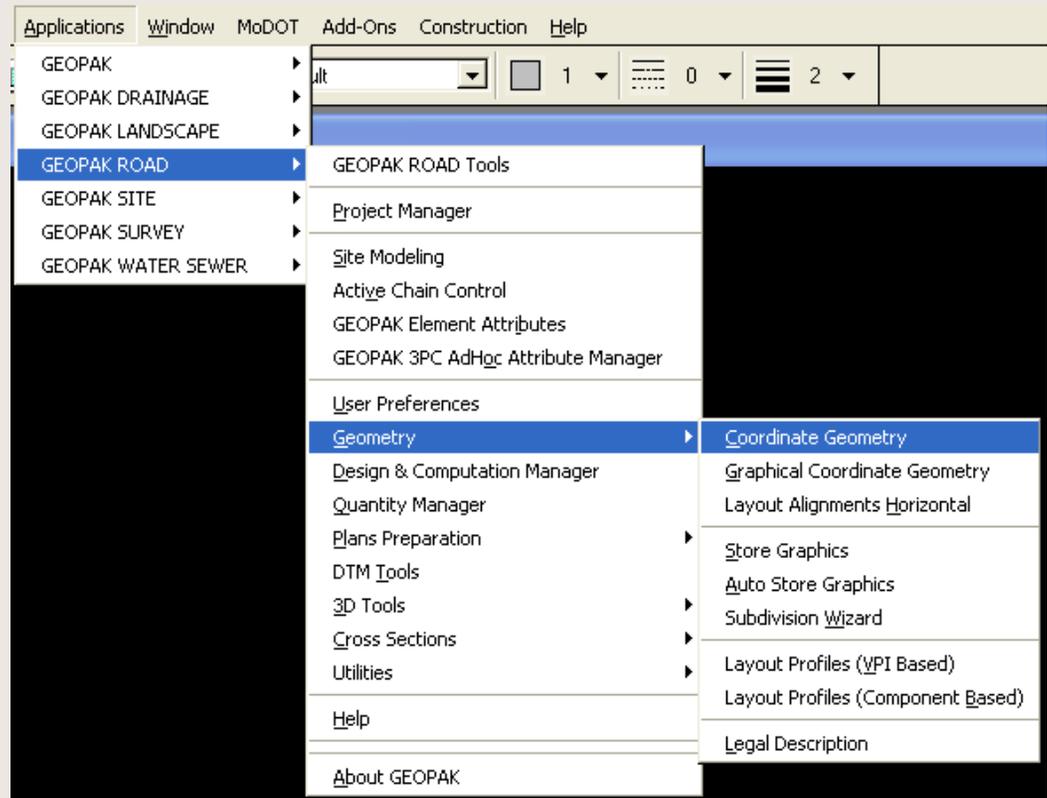
Job (GPK) Directory: Folder in the t-drive where your GPK file is stored

Accessing COGO

From Geopak Road Tools:



From Geopak Road Pull Down Menu:



Accessing COGO

Cogo Dialog Boxes

Coordinate Geometry

Project Name:

Job:

Operator Code:

Subject:

Coordinate Geometry Job: 323 Operator: am

File Edit Element View Tools

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COGO Key-in:

