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## Chapter 21: Reports

### Introduction

GEOPAK uses the cross section files to produce staking reports in EFLHD format. The creation of these will be required on all EFLHD projects that have cross sections. These reports include staking details, slope stake reports, and red and blue top reports. The following sections will describe the processes used to create each of the reports.

GEOPAK progresses from left to right across each cross section while preparing each report. To do this, the user will need to provide the level symbology of the existing ground and all the proposed elements required to progress through the points and lines, to be reported on, completely across the cross section.

These reports will be placed in ASCII files for ease of printing and electronic transfer.

### Workflow 1: Access Cross Section Reports

- 1. While in the cross section file, open the Project Manager Dialog Box.*
- 2. The Reports & XS Quantities button is located at the bottom right.*

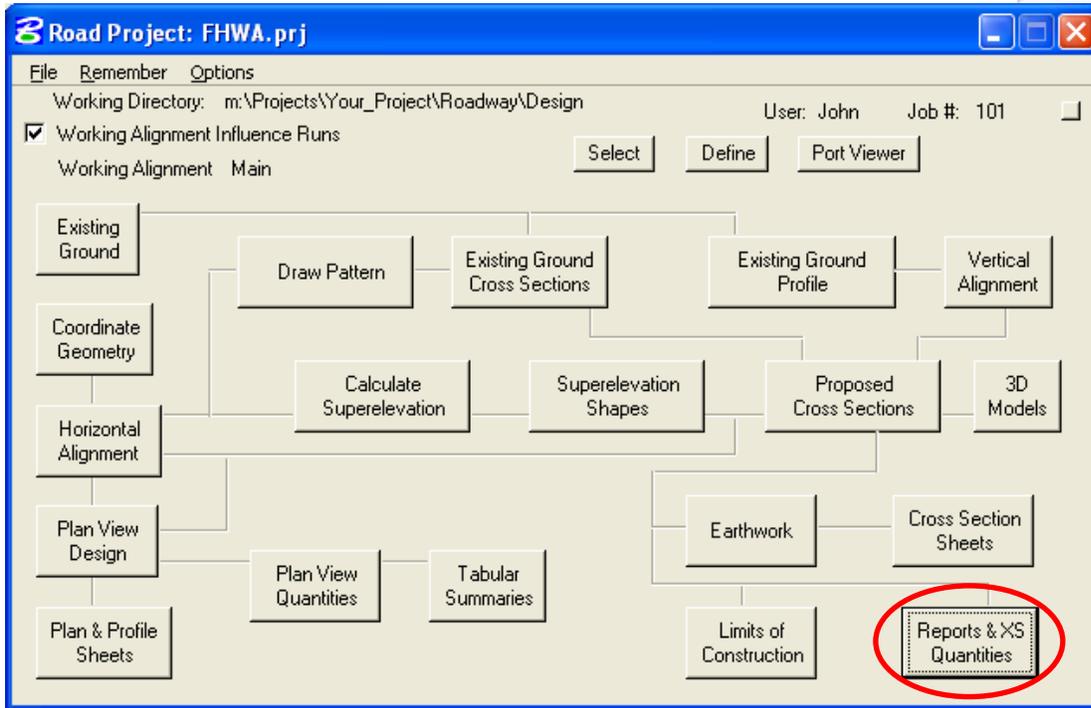


Figure 21-1: Accessing Reports from Project Manager



3. *The XS Reports dialog box will appear.*

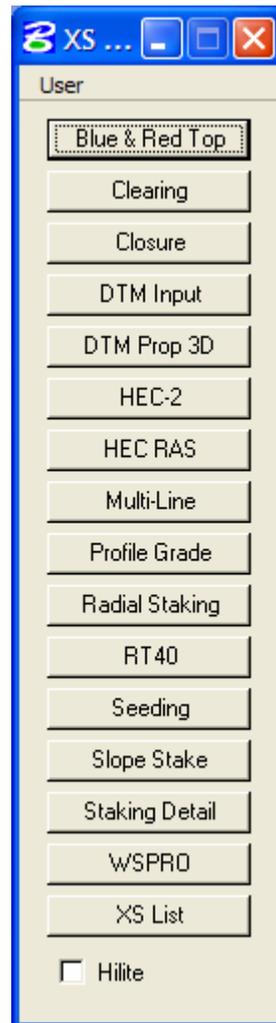


Figure 21-2: Reports Menu

Alternatively, reports may be accessed outside of Project Manager by selecting **Applications>GEOPAK ROAD>Cross Sections>Reports**, as shown below.

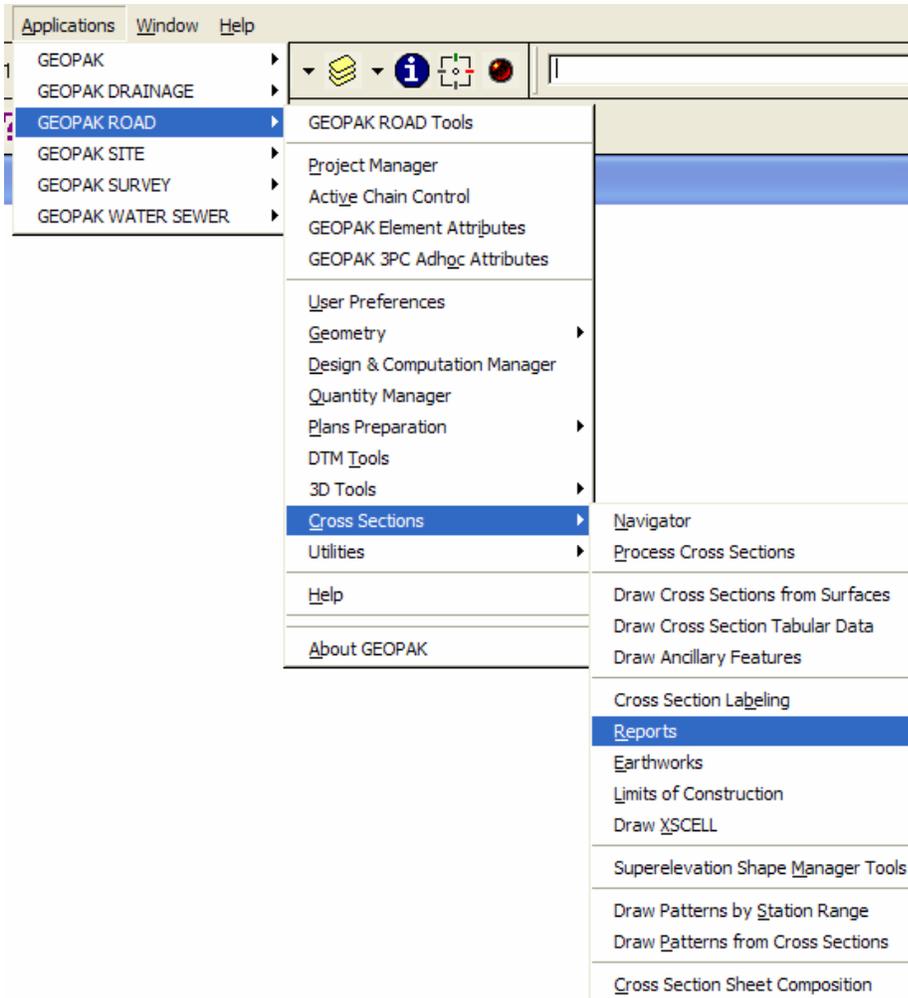


Figure 21-3: Accessing Reports

## Report Headers

All reports will require a header to describe the project and report type. The header can be modified by picking the **User>Preferences** button at the top of the XS Report dialog box. This will bring up the Report Header dialog box.



Figure 21-4: Reports Settings

The date, first two master headers and page number should be marked. The first master header should have the complete project name and number, i.e. **Nevada Forest Highway Project FH 24-1(1)**.

The second master header should have the name of the road. The tolerance should be around the values shown. If GEOPAK stops at many cross sections these values can be adjusted.



*The File pull down menu will allow you to save this information to a text file. If you are working on more than one project, you can easily import the correct information on subsequent runs.*



*Keep in mind that the Radius of Display Circle needs to be less than the smallest line segment on the proposed cross section. If the smallest line segment is the top of curb and it is .15 m (6 in.) then the Radius of Display Circle needs to be .1 (.25 ft.).*



## Staking Detail Report

The Staking Detail Report is used to locate the catch points at each section. The Staking Detail button is located third from the bottom on the XS Report dialog box. When selected, you will get the following dialog box.



Figure 21-5: Staking Report Dialog

To set the symbology values for the Existing Ground Line and Proposed Finish Grade, pick the symbology button  to get the following dialog boxes:

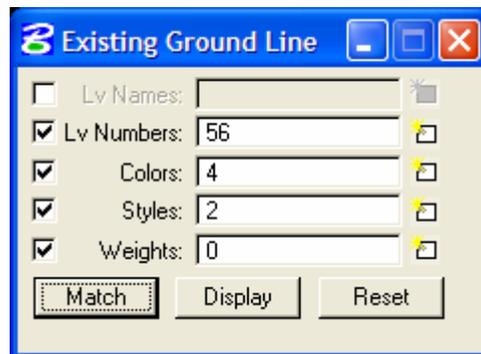


Figure 21-6: Existing Ground Line

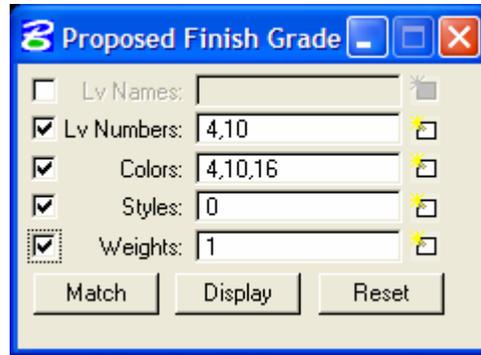


Figure 21-7: Proposed Finish Grade

The buttons to the right of the data field allow the user to select the values to populate the data field. The Reset button clears the values that populate the fields, Display highlights the elements that meet the criteria, and Match allows the user to pick the elements to include in the selection set. The values shown in the Existing Ground Line and Proposed Finish Grade sections will allow GEOPAK to progress through the top of subgrade. This is the path needed to get the correct report.



*The values shown in the Proposed Finish Grade are only for a standard ditch or fill section. There will need to be additional symbology added to the Proposed Finish Grade section if retaining walls and other elements are added to the cross sections.*

## Slope Stake Report

The Slope Stake button is located above the Staking Detail button. When selected, the following dialog box will appear.

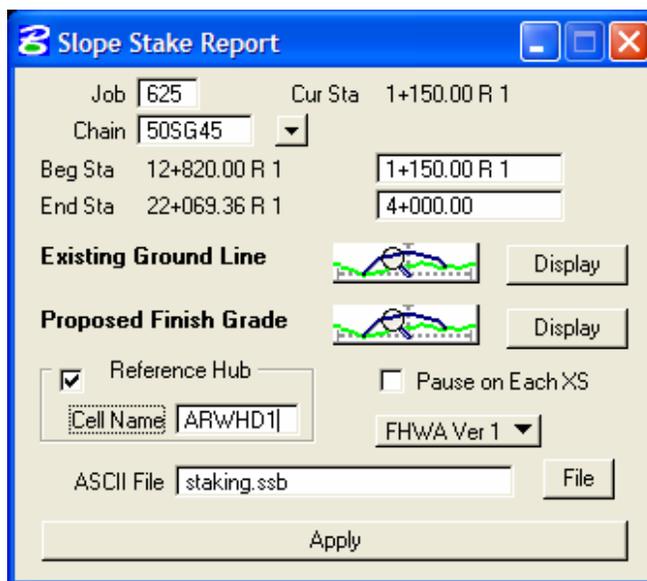


Figure 21-8: Slope Stake Report Dialog

**STANDARDS FOR USE WITH X30 CRITERIA**



The values in the Existing Ground Line and Proposed Finish Grade sections will be the same as used in the Staking detail Report. The only difference is the addition of the Reference Hub. This is the cell used to indicate the location of the reference hubs on the cross section.



*Make sure you use FHWA Ver 1. Not FHWA Ver 2.*

## Red Tops Reports

Red Tops reports indicate all breakpoints at the top of subgrade between the hinge points. There are two reports that are needed; the standard Red Top Report and the XYZ Red Top Report. The Blue & Red Top button is at the top of the XS Report dialog box.

Figure 21-9: Blue and Red Top Report Dialog

Again for the Red Tops, use the same level symbology as for the Staking and Slope Stake reports. The only information that is needed is in the Text button. That will bring up the following dialog box:

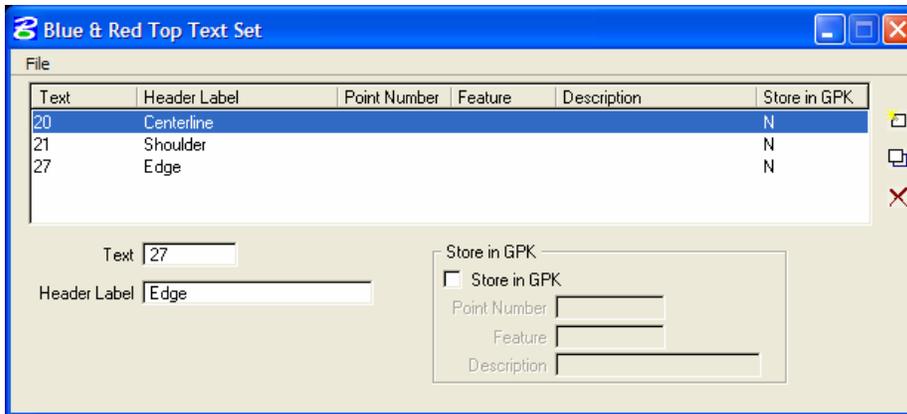


Figure 21-10: Report Text Set

The text is in the cross section at the point that you want reported. The Header label is how the report will label that point. To add a point to the list simply type in the text you want reported on and the label for that text and hit the add button . If you want to change the header or text, highlight the line you want changed and GEOPAK will put the information in the Text and Header Label spaces, make your modifications and hit the modify button . To delete a label, highlight the line to delete and pick the Delete button .



*You can save this information for future use by picking the file button at the top of the dialog box.*

Make sure the Red button is shown in the Blue & Red Top report dialog box and hit Apply.

The XYZ Red Top Report is the same as the Red Top Report, just change the button that says Red to XYZ.



*To differentiate the XYZ Red Top Report from the XYZ Blue Top Report, go back to the user button on the XS Report dialog box and add Red Top XYZ Report to Master Header 3.*

## Blue Tops Reports

Blue Tops reports indicate all breakpoints at the top of base course. There are two reports that are needed, the standard Blue Top Report and the XYZ Blue Top Report. The Blue & Red Top button is at the top of the XS Report dialog box.



Blue & Red Top Report

Job 625 Cur Sta 1+150.00 R 1

Chain 50SG45

Beg Sta 12+820.00 R 1 1+150.00 R 1

End Sta 22+069.36 R 1 4+000.00

Existing Ground Line [Graph] Display

Proposed Finish Grade [Graph] Display

Span Top

Text  Pause on Each XS

Reference Chain 15DT1

Blue [File] Blue Top.btb [File]

Apply

Figure 21-11: Blue and Red Top Report Dialog

For the Blue Tops, use the level symbology for the top of Base course. You may need to include the top of pavement symbology if the foreslope has the same symbology along the base course as the pavement section. The only information that is needed is in the Text button. That will bring up the following dialog box:

Blue & Red Top Text Set

Text	Header Label	Point Number	Feature	Description	Store in GPK
10	Centerline				N
11	Shoulder				N
17	Edge				N

Text 17

Header Label Edge

Store in GPK

Store in GPK

Point Number

Feature

Description

Figure 21-12: Report Text Set

The text is in the cross section at the point that you want reported. The Header label is how the report will label that point. To add a point to the list simply type in the text you want reported on and the label for that text and hit the add button. If you want to change the header or text, highlight the line you want changed and GEOPAK will put the information in the Text and Header Label spaces, make your modifications and hit modify. To delete a label, highlight the line to delete and pick the Delete button.



Make sure the Blue button is shown in the Blue & Red Top report dialog box and hit Apply.

The XYZ Blue Top Report is the same as the Blue Top Report, just change the button that says Red to XYZ.



*To differentiate the XYZ Red Top Report from the XYZ Blue Top Report, go back to the user button on the XS Report dialog box and add Blue Top XYZ Report to Master Header 3.*



*There may need to be an occasion when yellow top reports are needed. There is a button for yellow tops and the process is the same as both the red and blue tops.*