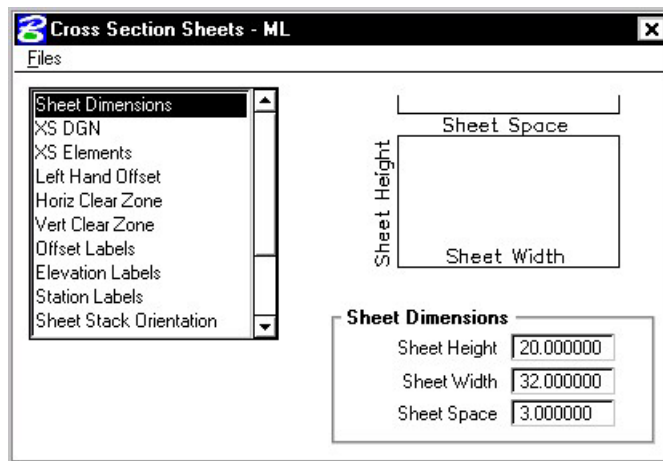# Cross Section Sheets

15.1 Introduction

| Objectives	Learn the procedures for laying out cross section sheets.
Project Manager	Cross Section Sheets
Menu Bar Application	None, except batch processing of an input file.

To access the necessary dialog boxes needed to process the cross section sheet layout, select **Project Manager > Cross Section Sheets**. Once the run is chosen, the dialog box shown below appears.


15.2 Cross Section Sheets Dialog Box

The left side of the dialog box contains the list of parameters required to define the geometry of the cross section sheets and its contents. When each parameter is selected, the dialog box changes as do the key-in fields to reflect the selected parameter.

Sheet Dimensions – The Sheet Height and Sheet Width define the size of the sheet. The Sheet Space defines the spacing between sheets.
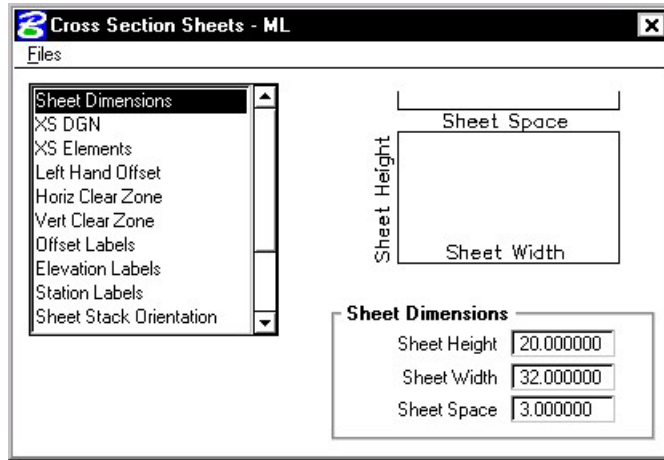

XS DGN – Tells the software where to locate the cross sections. The Chain and stationing will be filled out automatically if defined via the project manager. By default, the software will find all elements within the confines of the cross section cell. If you need to look farther than that (i.e. outside of the cell), you can set these values to extend beyond the cell limits.
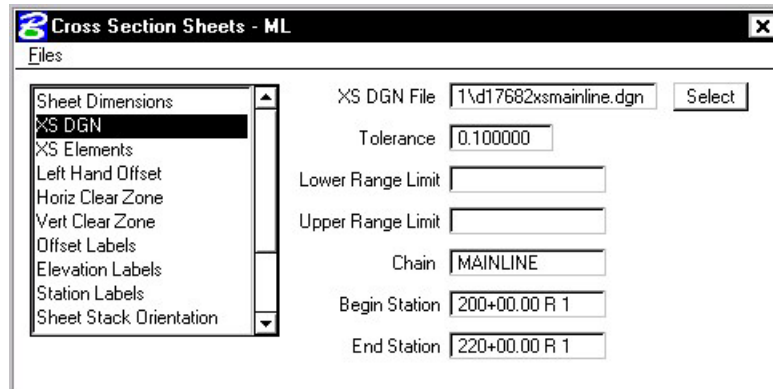
XS Elements – Indicates the search criteria (symbology) for the data to be used as input to the sheet layout software.
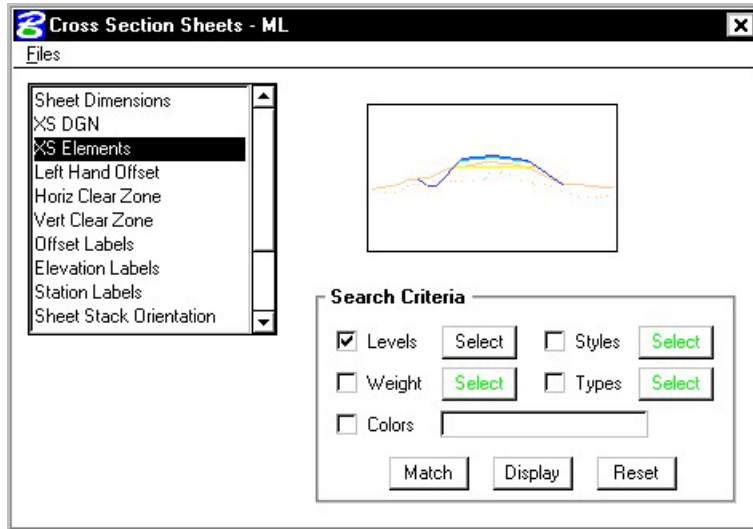

Left Hand Offset – Defines the distance from the left-hand edge of the sheet to the zero offset position (i.e. baseline) of the cross sections.
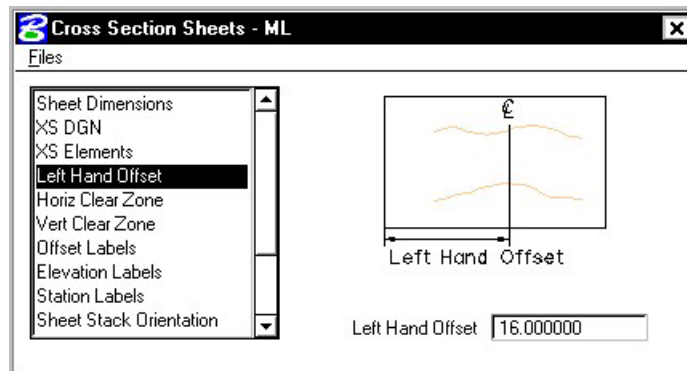

Horiz Clear Zone – defines the clipping limits from the left hand edge of the sheet. To the left of the Clip Lt remains clear space and to the right of the Clip Rt remains clear space.
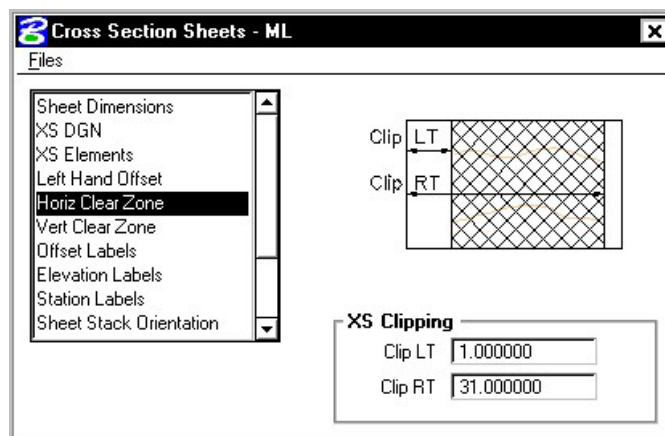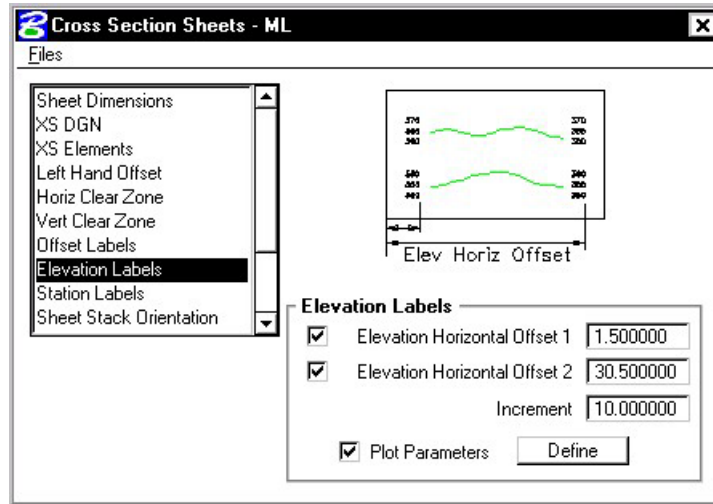
Vert Clear Zone – defines all minimum spacing requirements as well as the maximum allowable vertical size of any cross section.
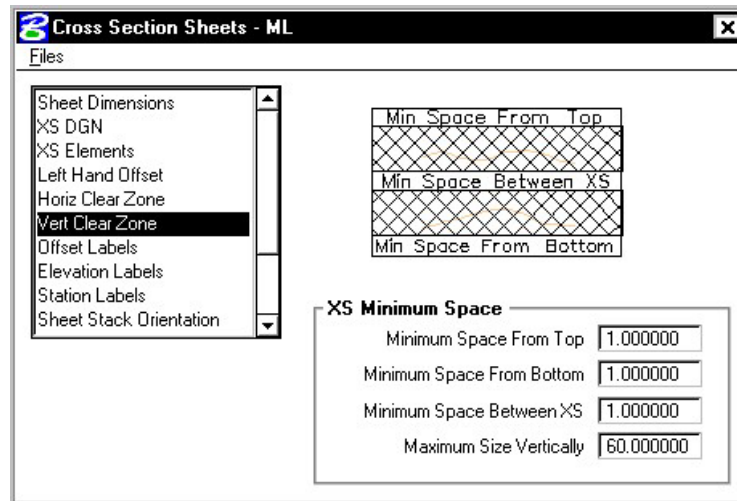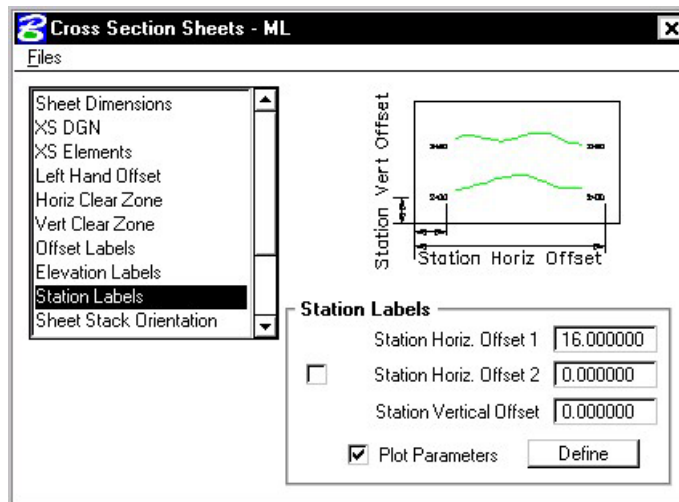

Offset Labels – allows you to define your offset label positions, increments and plot parameters.
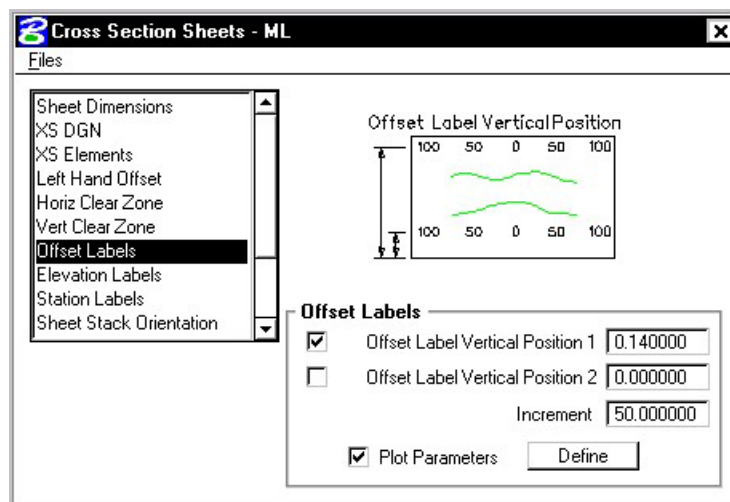
Elevation Labels – allows you to control the elevation label locations, increment and plot parameters.


**Station Labels** – allows you to control the station label locations and plot parameters.

Sheet Stack Orientation – determines whether you want the sheets to be stacked vertically or horizontally. Also allows you to set the maximum number of sheets you want placed per file.
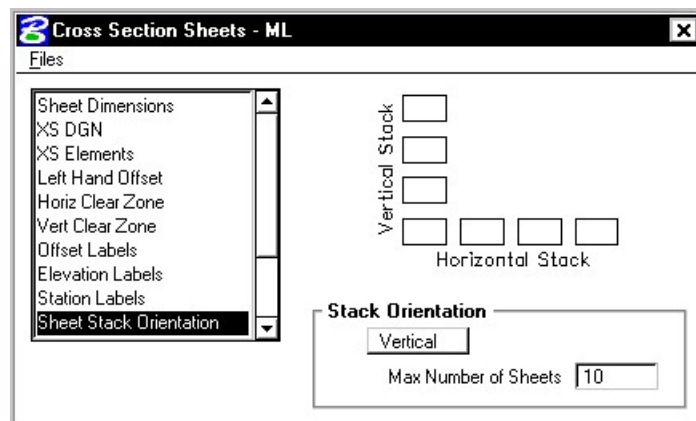
Sheet Stack Single/Double – determines whether you want a single stack or a double stack of cross sections per sheet. If you select double, you can give an offset value which is the distance of the second stack from the left hand edge of the sheet.
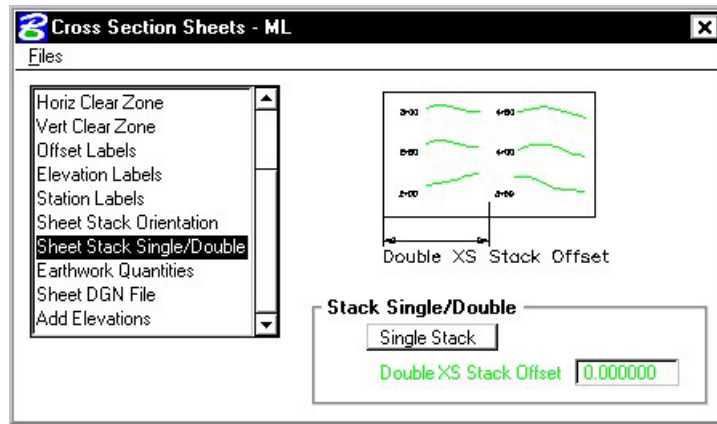
Earthwork Quantities – the user can define the ASCII file that contains the earthwork quantity information, as well as toggle on/off the plotting of the earthwork quantities. This will use the information gathered during the earthwork run to place the quantities onto the cross section sheet.
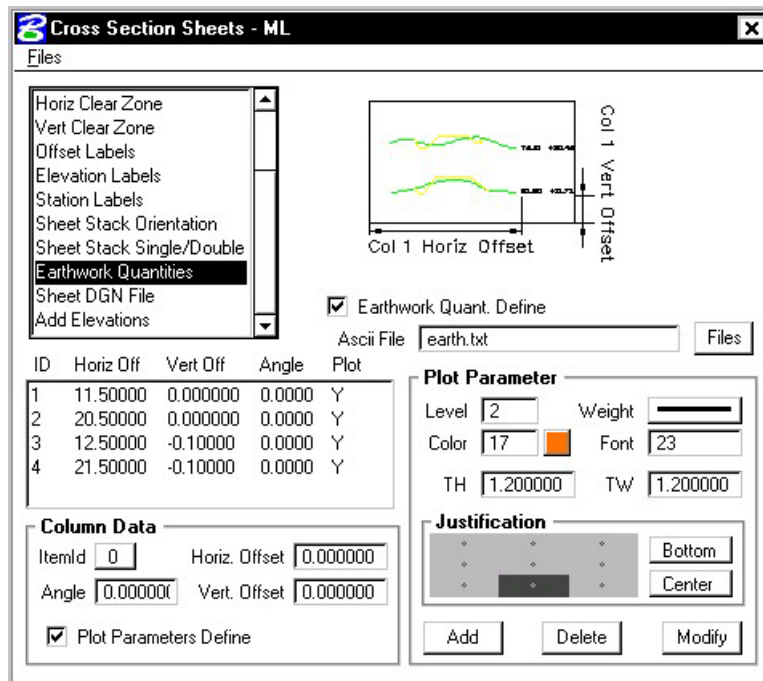
Sheet DGN File - specifies which file the cross section sheets will be placed in. Also allows you to set the horizontal and vertical scale at which they are to be laid out and the coordinate location in the dgn file at which the sheets will be placed.
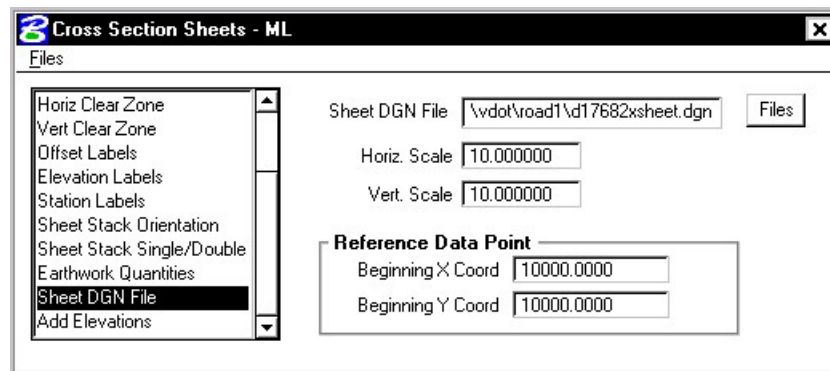
Add Top Elevation - Activating this toggle adds another elevation label above the current labels placed within the elevation labels parameters. If two sets of elevations labels are placed (one on each side of the section), the top elevation is added to both.

Add Bottom Elevation - Activating this toggle adds another elevation label below the single label placed within the elevation labels parameters. If two sets of elevations labels are placed (one on each side of the section), the bottom elevation is added to both.
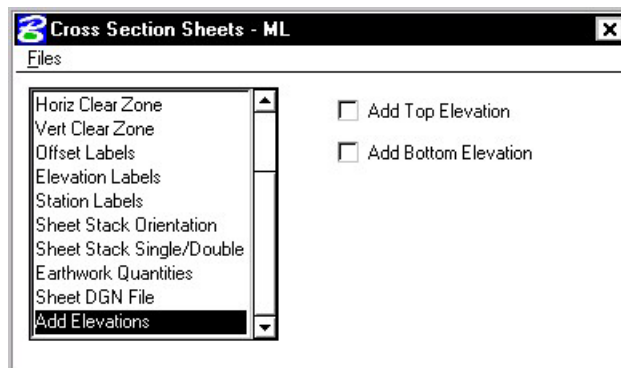
15.3 Generating Sheets

From the **Files** menu, the **Run** option will process all parameters that have been set in the **Cross Section Sheets** dialog box. The **Save Settings** option will save all information in the **Cross Sections Sheets** dialog box. The **Export** option will allow the user to save the parameters in the **Cross Section Sheets** dialog box as an ASCII input file. The **Exit** option will exit the **Cross Sections Sheets** dialog box.

Once the dialog box is complete, the user can select **File > Run** and the following dialog box will appear.
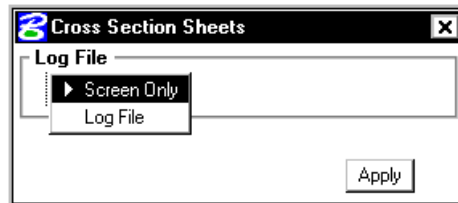
The user can display the results to the screen only, or write them to a log file. Once the **Apply** button is selected, the cross sections will be plotted in sheet format.

LAB 15:   Cross Section Sheets

15.1   Cross Section Sheet Layout

Step 1.   Execute **C:\data\geo\VDOT\road1\LAB15.EXE**.

Step 2.   Open the MicroStation file **c:\data\geo\VDOT\road1\d17682xsheet.dgn**

Access **Project Manager**. It should automatically access the Road workflow dialog box since we "remembered" the options in Exercise 2.

Step 3.   Select the **Cross Section Sheets** button from the **Road Project: 17682.prj** workflow dialog box.

Step 4.   Create a new run called **ML**.

Step 5.   Fill in the **Sheet Dimensions** as shown.
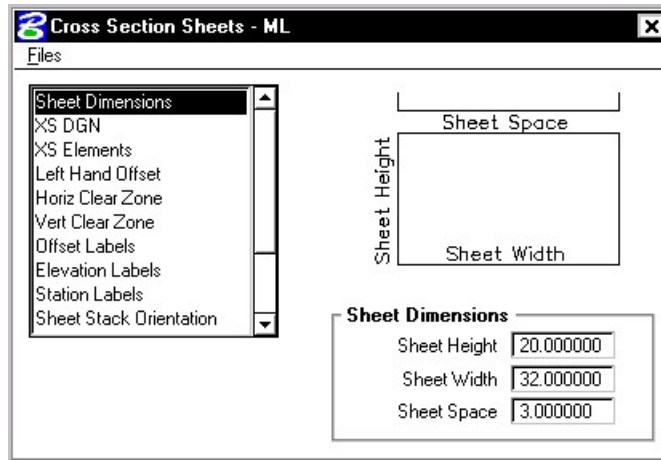
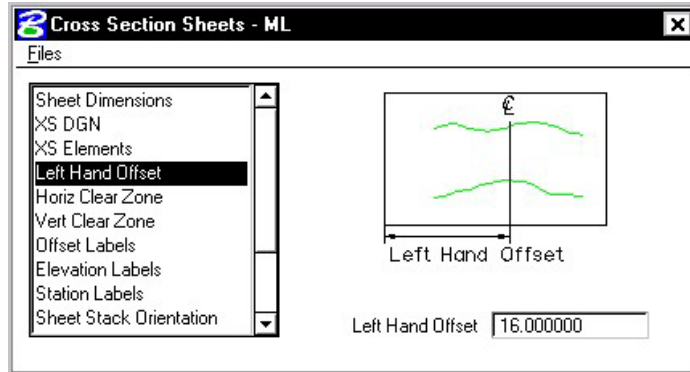**Step 6.**   Make sure that the **XS DGN** portion is filled out correctly.
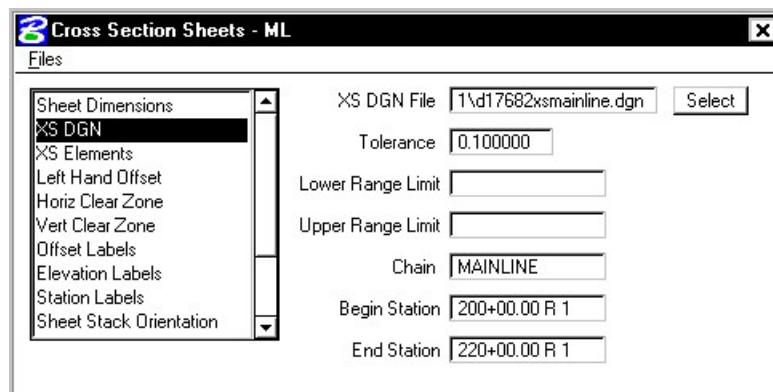
Step 7. Using the **XS Elements** item, enable the toggle for Levels.
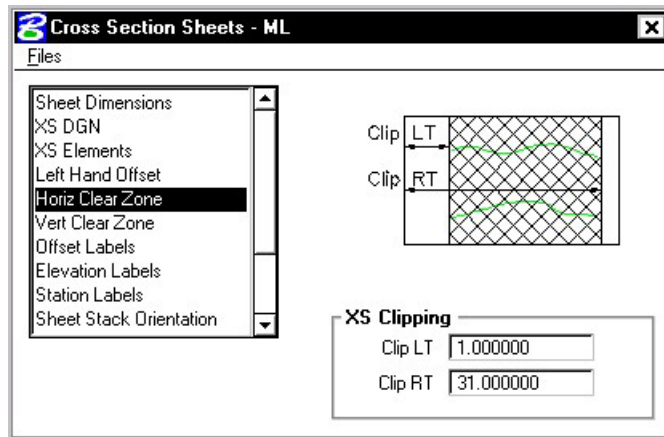
Access the **Level Mask** dialog box using the **Select** button and set the levels as shown:
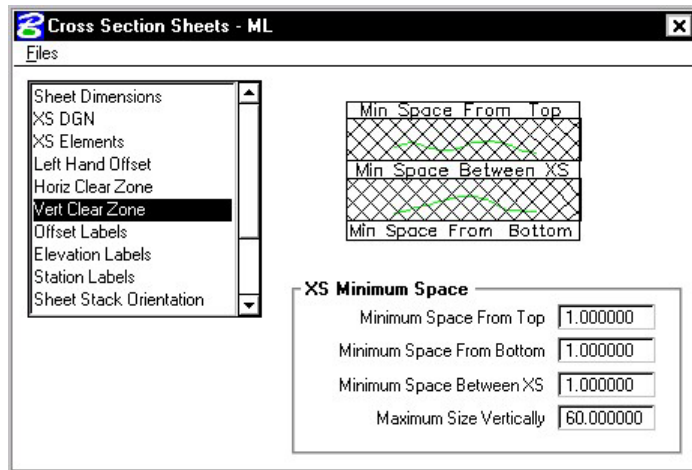

Step 8. Fill out the **Left Hand Offset** as shown.
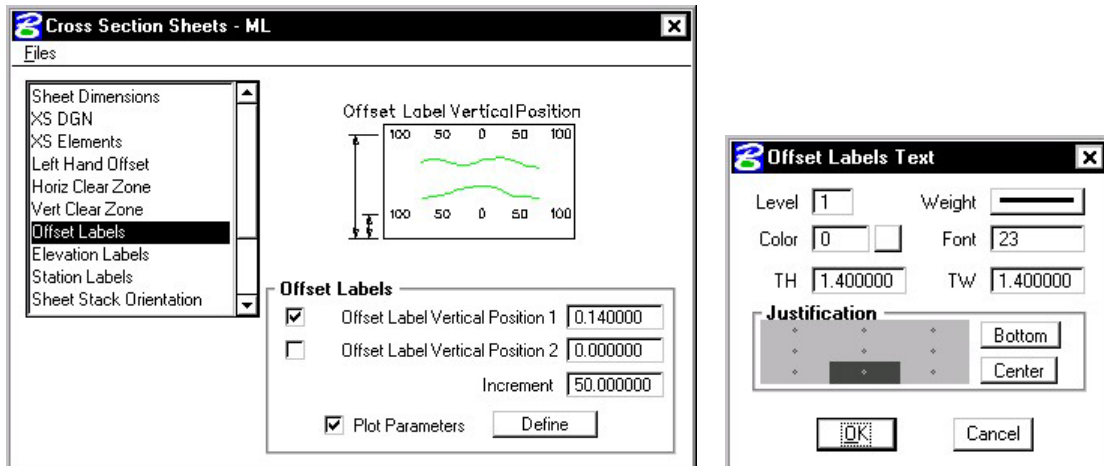

Step 9. Set the **Horizontal Clear Zone** as shown.
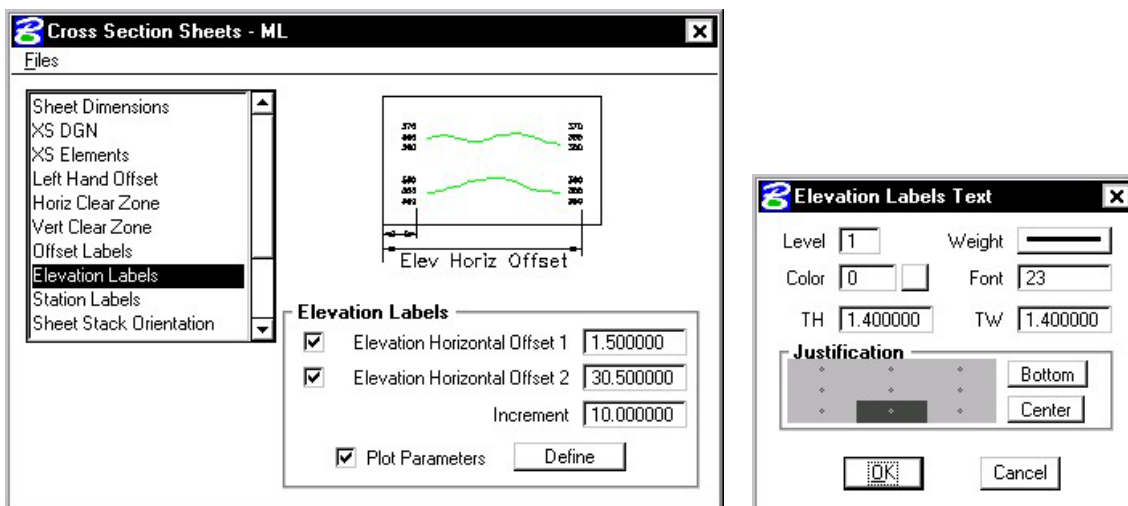
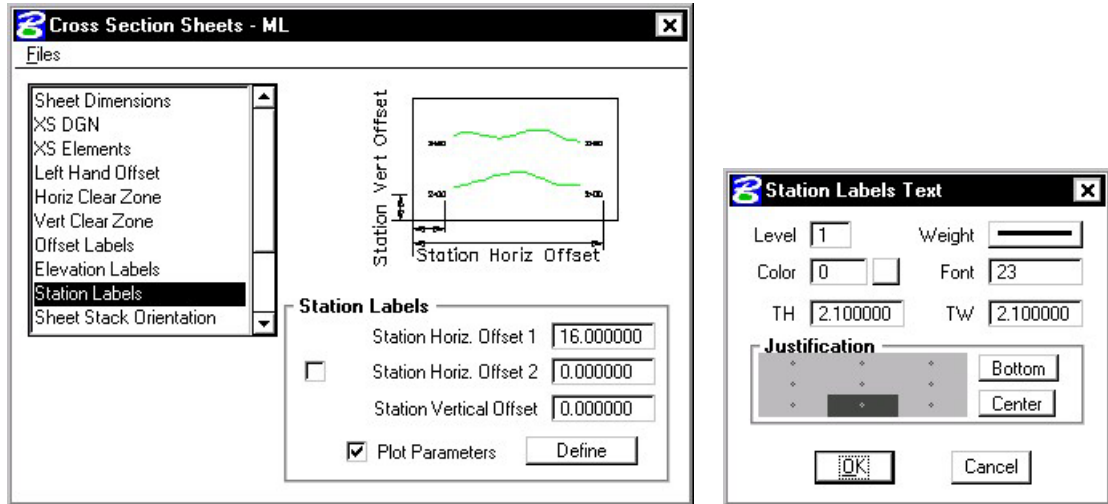**Step 10.** Set the **Vertical Clear Zone** as shown.

Step 11. Set the **Offset Labels** as shown, using the **Define** button to set the text Plot Parameters **(wt=4)**.
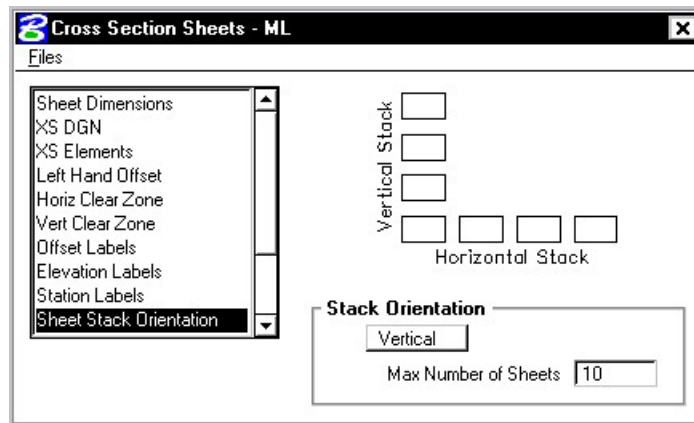

Step 12. Set the **Elevation Labels** as shown, using the **Define** button to set the text Plot Parameters **(wt=4)**.
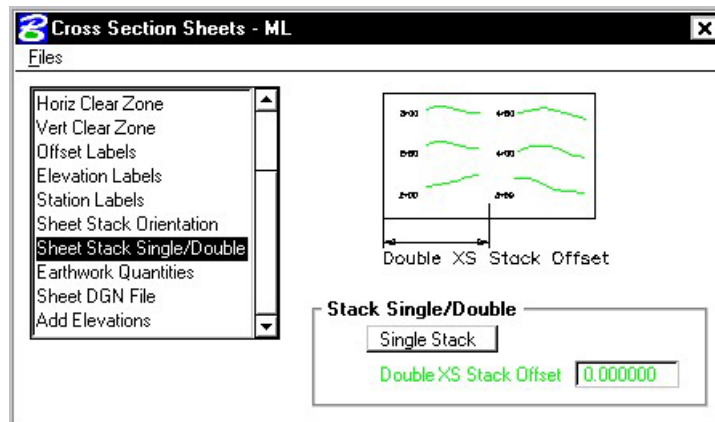
Step 13. Set the **Station Labels** as shown, using the **Define** button to set the text Plot Parameters **(wt=4)**.
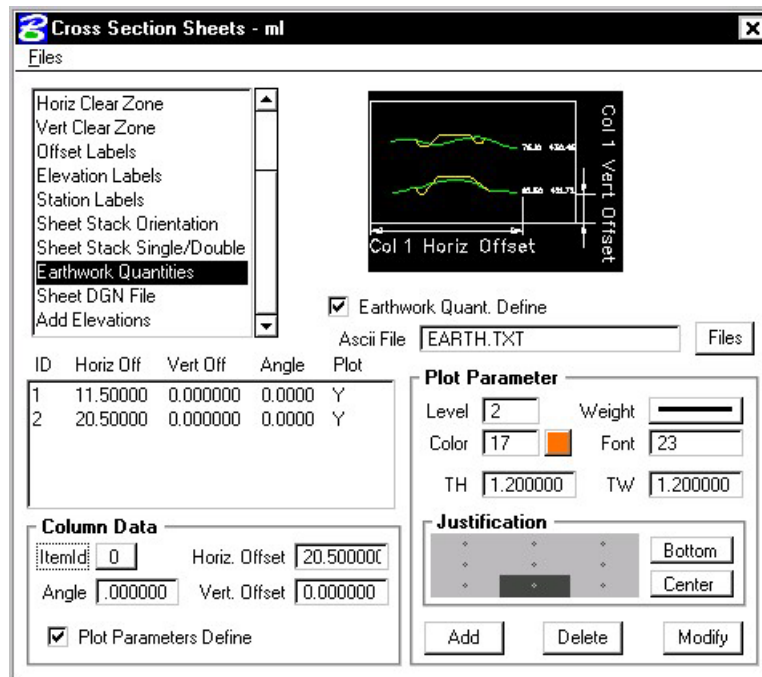

Step 14. Set the **Sheet Stack Orientation** to Vertical with the Max Number of Sheets (per stack) set to **10**.
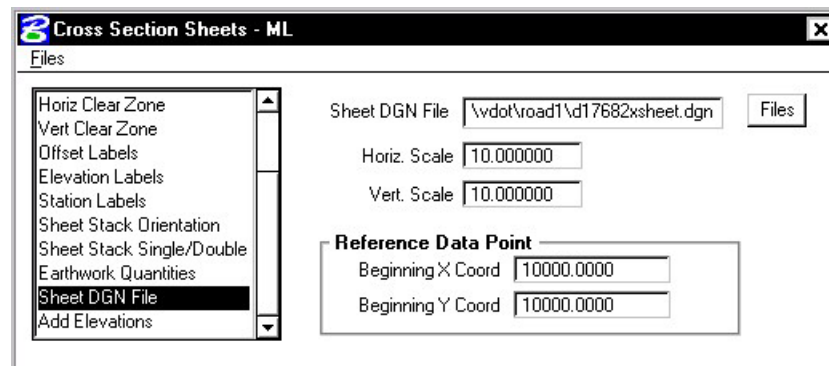

Step 15. Set the **Sheet Stack Single/Double** to **Single Stack**.

Step 16. Set up the **Earthwork Quantities** as shown **(wt=5)**.

Step 17. Set up the **Sheet DGN File** section as shown.

Step 18. Process the cross sections onto the sheets using the **File > Run** pulldown. Create a log file called **xssheets.log**.

Step 19. Exit Cross Section Sheets dialog box and save your run. Review the results.

15.2 Cross Section Sheet Numbering

Step 1. Zoom in on the lower right corner of the lower left sheet to see the title block more clearly.

Step 2. Open Design and Computation Manager. Double click item **Road Design > Special Applications > XS Sheet Number**.

Step 3. Populate the dialog box as show below. Note that your **Total Sheets** may be different. The **Begin Station Prefix** is followed by a space, and the **End Station Prefix** has a space at the beginning and end. Click **OK**.

Step 4. Use the **File** button to select the **xssheets.log** file created previously then push **OK**.

Step 5. Snap to the existing text in the Sheet Number box when the prompt below appears.

Step 6. Snap to the existing text in the Project Number box when the prompt below appears.
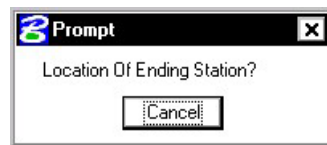
Prompt ✕

Location Of Project Number?

Cancel
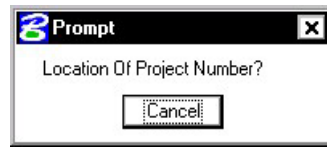
Step 7. Place a data point at any location you desire when the prompt below appears. This will be **Right Justified**.

Prompt ✕

Location Of Beginning Station?

Cancel

Step 8. Place a data point at any location you desire when the prompt below appears. This will be **Left Justified**.

Prompt ✕

Location Of Ending Station?

Cancel

Step 9. Push **OK** when the prompt below appears.

Prompt

Complete! Use Graphic Group To Move Labels.

OK   Cancel

NOTE: The Sheet number, Project Number, From Station and To Station text strings are in their own graphic groups. If necessary, each can be relocated on all sheets by turning on the Graphic Group Lock and using the MicroStation Move element command.

Step 10. **Exit** MicroStation.