# Flowcharts Hands On: Plotting Contours in HYPLOT

By Judy Bragg

This article continues our series of *Flowcharts Hands On* articles based on the Flowcharts found in the HYPACK® Help menu, and in the Appendix of the HYPACK® User Manual. The flowcharts are provided to guide you in processing your data.

In previous articles, we've looked at preparing tide and sound velocity corrections files that you can use to apply such corrections in the editing process, cleaning your single beam data in the 32-bit SINGLE BEAM EDITOR, and thinning your data with sounding selection programs. We can now look at the Final Product modules.

The following flowchart shows the same processing steps described in earlier articles followed by the TIN MODEL module from which you can export a DXF contour chart file. TIN MODEL is the only HYPACK® module that generates contours from your edited data.

FIGURE 1. *Plotting DXF Contour Charts from Single Beam Data*
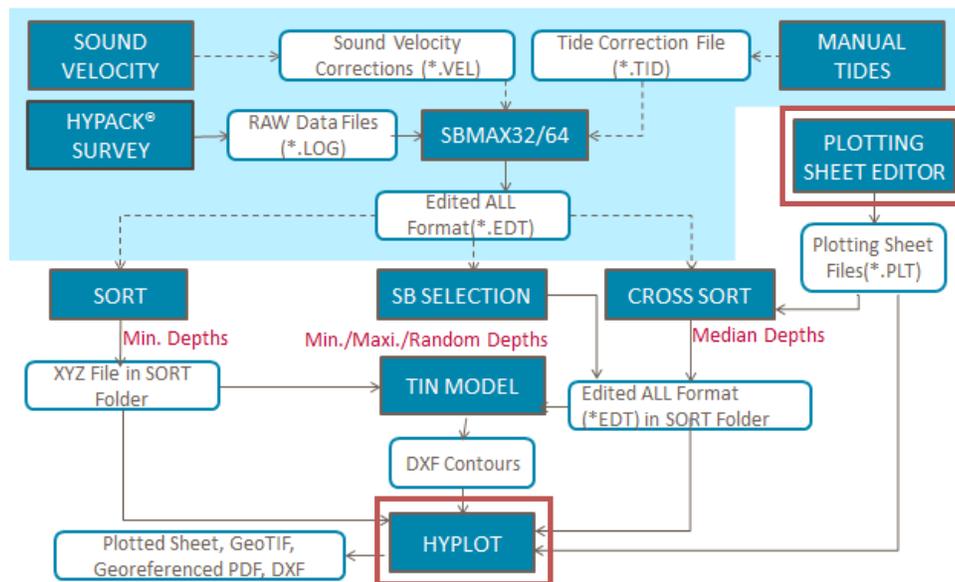
HYPLOT defines the features to be plotted and sends the information to the printer or plotter. Before we can do that, however, we need to define the dimensions, scale and rotation of your plotting sheet. We do this by creating a plotting sheet file (*.PLT) in the PLOTTING SHEET EDITOR.

CREATING A PLOTTING SHEET FILE

1. **Enable the files in your project that you plan to include in your plot.** They are helpful to visualize what your finished plot will look like so you can properly size and position your plotting sheet relative to your data.

2. **Open the PLOTTING SHEET EDITOR**. Select PREPARATION-EDITORS-PLOTTING SHEET EDITOR. The editor appears with a green, preliminary plotting sheet "suggestion" in the Map window.

3. **Set your finished plotting sheet size**. You can enter your own height and width or one of the standard sheet sizes from the EDIT-PREDEFINED menu.

   For this example, we'll use a simple 8.5 x 11 sheet of paper. The Height and Width fields are the size of your plot, *not the paper*, so if you manually enter the plot dimensions, remember to allow for a margin around the outside of your plot. Selecting EDIT-PREDEFINED-ANSI-A (8.5X11) does just that.

   In either case, the green outline in the Map window updates accordingly.

Tip: Additionally, make allowances for any borders that may be required when you send it to print. For example, if you need a double-border with a Title Area around your plot, the plotting sheet size must be small enough to fit them on the paper.

FIGURE 2. *Preliminary Plotting Sheet*
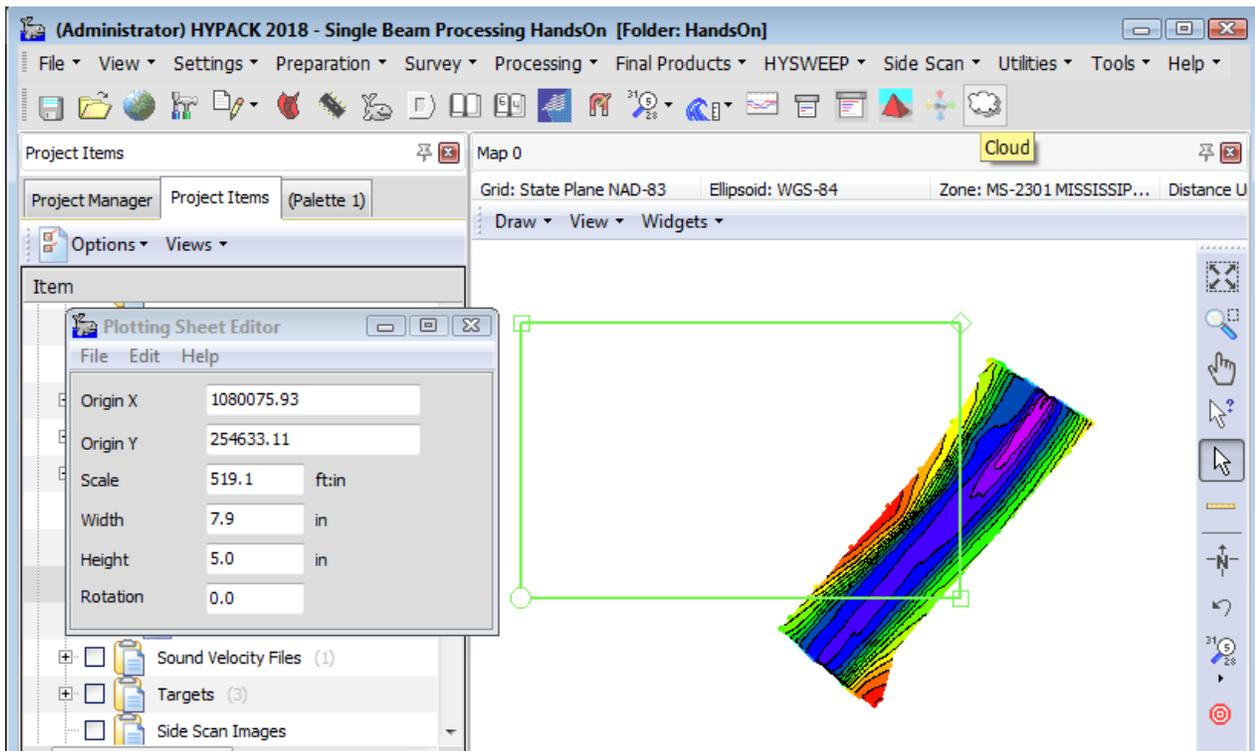
4. **Adjust the plotting sheet for optimal fit to your data**.

- **To adjust the position**, click and drag the corners with your cursor.

Task	Click and drag...
To **translate** the plotting sheet	circled corner
To **rotate** the plotting sheet	square corner opposite the circled corner

- **To adjust the scale.** There are two ways you can do this fairly easily. (Remember we have to maintain the aspect ratio for the required height and width.)
    - **Manually enter and apply new Scale values** in the dialog until you get the fit you need.
    - **Select EDIT-SIZING-SCALE then click and drag the corners adjacent to the circled corner** to adjust the length and width to fit your data. The Scale sizing method maintains the aspect ratio during this process.

5. **Save your plotting sheet**. Select FILE-SAVE, name your plotting sheet and click [Save]. The file is saved, by default, to the project folder.

PLOTTING YOUR DATA IN HYPLOT

HYPLOT defines the features to be plotted and sends the information to any Windows® driven plotter or printer.

The HYPLOT interface is much like the HYPACK® window. HYPLOT automatically loads all of the files that are loaded to the project and draws all that are enabled in the HYPACK® area map and are located within the area defined by your plotting sheet file. From there, you can add and remove them from the plot, and define display settings through the HYPLOT Control Panel.

Items that may be included in your plotting sheet, but have no fixed position; such as the north arrow, compass rose, imported text and graphics; are initially positioned in your plotting sheet using the corresponding settings tab. You can easily relocate them by dragging them with your cursor in the HYPLOT display (or by entering coordinates in the control panel). The status bar displays the current cursor position with the current zoom scale relative to the plotting sheet size.

1. **Start the HYPLOT program** by selecting FINAL PRODUCTS-HYPLOT.
2. **Load the Plotting Sheet File**.
    - **If you have only one in your project,** it will be automatically loaded.
    - **If you have more than one PLT**, the program will ask which you want to use.

    The HYPLOT screen displays all of the enabled files in your project.

3. **Define your** display settings. Each type of chart feature has a corresponding tab in the Control Panel where you can choose how and where in the plotting sheet they will be displayed.

Tip: Don't be too worried about the exact positioning of features such as added text, title blocks, the north arrow, etc. You can use the cursor to drag them to the exact position with your cursor when you return to HYPLOT.

4. **Choose your plotting method.** Select FILE-PRINT and select to plot a composite of raster and vector drawings or plot pure vector data directly. When you click [OK], the Windows® Page Setup dialog automatically appears.

5. **Select your printer, enter your Page Setup information and click [Print].**

IMPORTANT: The corner of your PLT with the circle is plotted at the bottom left corner of your finished plot. Choose portrait or landscape orientation accordingly.

You may also generate DXF or DWG charts, or georeferenced PDF and TIF files through the FILE-EXPORT menu.

DISPLAY SETTINGS

The Control Panel is where you set all of the display options for your project files, as well as for additional chart features you may want to add such as title blocks, north arrow, text, and added graphics.

The **Control Panel** (F9) defines your plotting settings for each type of file. Select a feature from the tree view of categories on the left and the related display options become available for viewing and modification on the right.

Tip: Don't be too worried about exactly positioning features such as added text, title blocks, the north arrow, etc. You can use the cursor to drag them to the exact position with your cursor in the HYPLOT display.

BORDER OPTIONS

The Borders Tab in the Control Panel describes the border of your plot. Select the **Border Style** from the list. The **Line Weight** can be set for the generic styles by typing the number of pixels in the Inner and Outer fields. Set the color by clicking **[Color]** and selecting the one you want from the colors dialog.

If you select the "Double Line with Title Area" option, the Title Area options are enabled.
- **Fixed** sets the width of the title area to fit the Agency Title Block.
- **Width** creates a title area with user-defined width.

These options are not available for the IHO border style. The IHO border also requires the rotation of your plotting sheet to be 0 or divisible by 90 degrees.

FIGURE 3. *Border Display Settings in HYPLOT*

The custom border styles have additional display options which are accessed by clicking the corresponding button ([…]).

Tip: Alternatively, you can quickly change the Border Style and any related display options through the Border Style menu.

IMPORTANT: Remember you need room on your page around the specified plotting sheet.
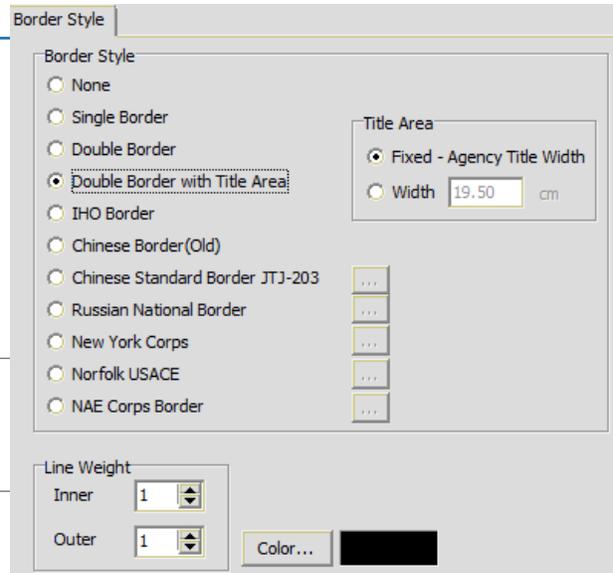
TITLE BLOCKS, GRAPHICS AND TEXT FEATURES

You can select one or more different each of the Title Block, Graphic and Text feature types.

Some feature types, such as Title Blocks, Graphics and Text features, may occur multiple times in the same plotting sheet.

In the tabs for these feature types, you must first create a list of the objects you may want to include in your plotting sheet. You can then enable and disable them in your plot using the checkboxes in the list. Additionally, you can customize each file selected for the plotting sheet by modifying their properties.

Properties of each object always include the following:
- **X and Y Offsets** to position its lower left corner in the plotting sheet.
- **Opaque**: Clearing this option allows you to see any data behind the object.
- **Plot**: Enables and disables the object in the plot. It is synchronized with the checkbox in the tab.

They typically also include properties specific to the selected feature type.

1. **Select the item in the list on the left.** Objects of this type for this plotting sheet appear on the right. The first time you use this plotting sheet, this area is blank and you must add one or more you may want to plot.

FIGURE 4.   *Graphics Options in HYPLOT*

2. **Click [Add] ([Browse] in the Graphics tab), select your feature file and click [Open].**
   - **Title Blocks:** You can select a template from the \HYPACK 2018\Templates\Hyplot Title Blocks folder, or another existing title block. If you choose a title block outside of the project, HYPLOT makes a local copy of the selected title block, renaming it by appending the plotting sheet name to the beginning of the title block file name. The new file then appears in the list in the Title Blocks dialog.
   - **Graphics**: Include your company logo, a plotting sheet layout graphic or any other graphic in your plot.
   - **Text**: Define the size and content of each text object.
3. **Plot one or more objects listed** by checking only the boxes for the blocks you want to print.
4. **Customize the object for the current plotting sheet as necessary**.
   a. **Select the object to be modified** in its tab.
   b. **Click [Properties] ([Edit] for Title Boxes).** The selected object will appear in an editor window.
   c. **Modify the object properties**. Please refer to the full HYPACK® Manual for detailed descriptions of each option. (If I tried to include them all here, this document would be *quite* lengthy!)
   d. **When you are satisfied, click [OK]** to return to the Control Panel.
5. **Click [OK]** to return to the HYPLOT screen.
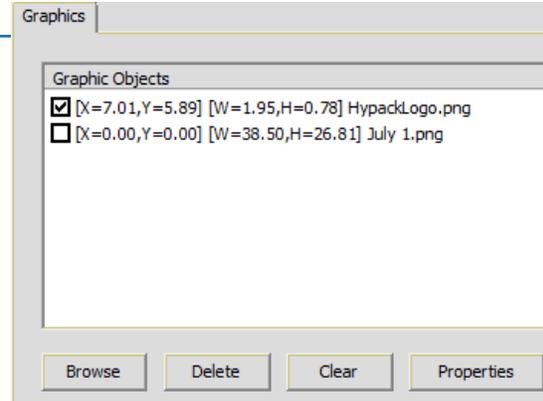
OTHER CHART ITEMS

In addition to your data and project files, there are some plot features that you may include, but logically only once: a north arrow, compass rose, color bar, etc.

For these objects, no listing is involved. For each object you want to plot, open its tab in the control panel, check the Plot checkbox, and configure the display options for the object.

HANDS ON EXPERIENCE

Hands On!

Download the Single Beam Processing project (http://bit.ly/2wl7X7C) and follow along. In this example, we'll load the 2D DXF Contour files from TIN MODEL into HYPLOT then configure

and print a plot of your chart.

In addition to your survey data, HYPLOT provides a variety of objects you can include in your plot to enhance or supplement your data. Experiment with configuring each object type to familiarize yourself with them and to understand the power and versatility of the program.

(Please refer to the full HYPACK® Manual or the Help system for detailed descriptions of each option. The section about the PLOTTING SHEET EDITOR may be found under Preparation section, and HYPLOT under Final Products.)

The following figures show a sample plot and its display options.

FIGURE 5. *Sample Plot of the DXF Contours*
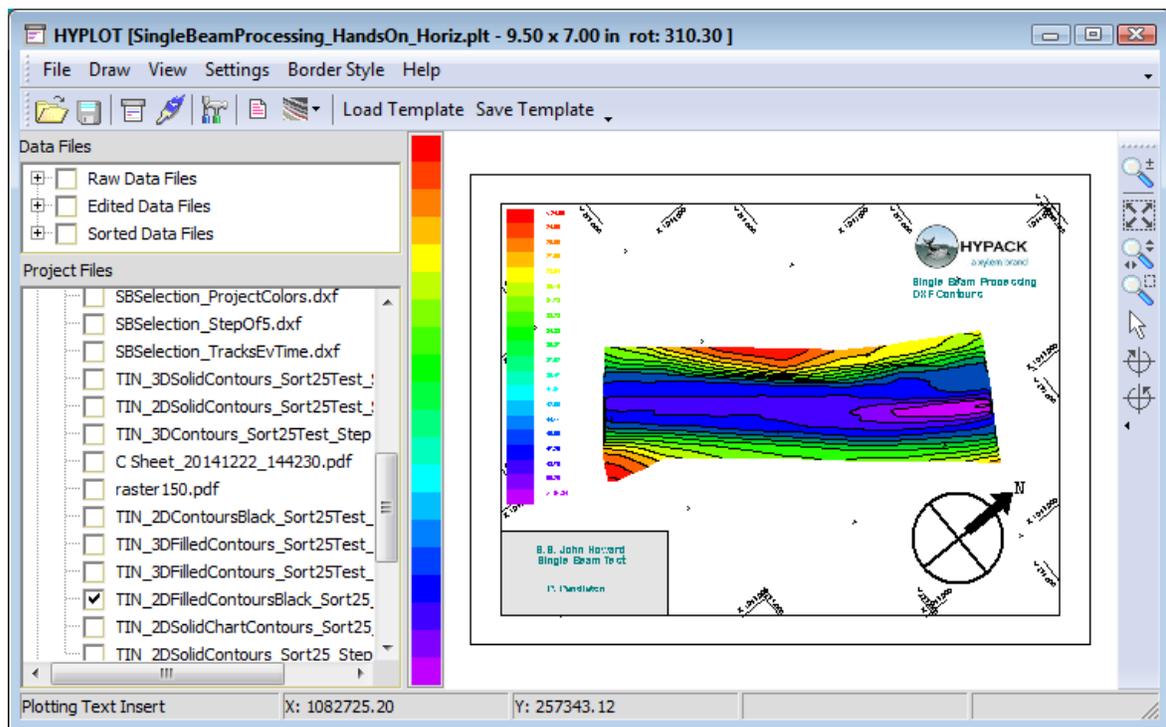
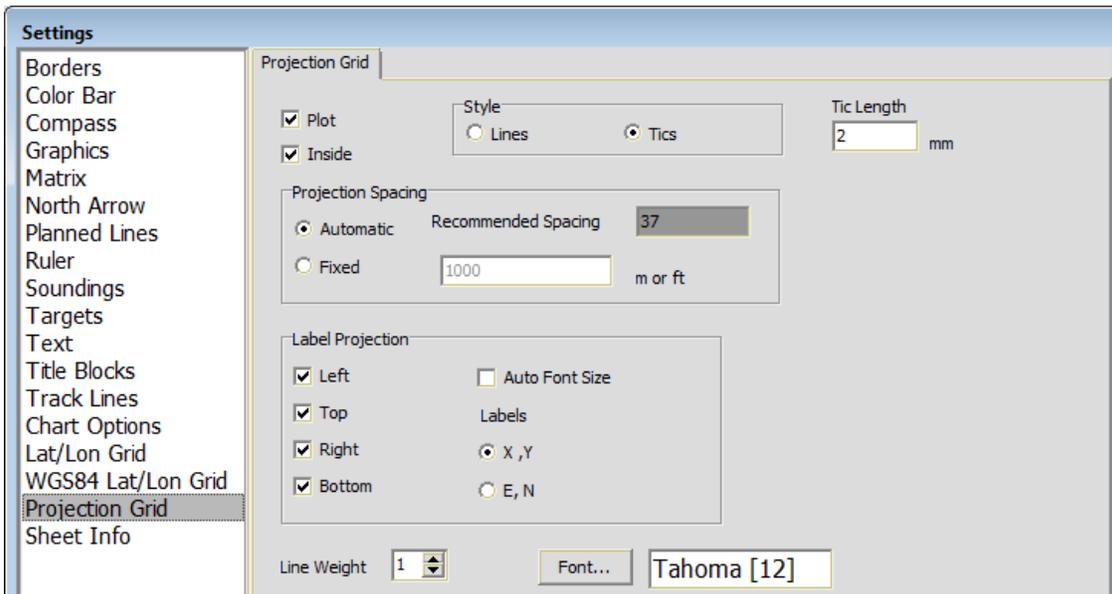**FIGURE 6.** *Control Panel—Projection Grid Options*

FIGURE 7. *Control Panel—Color Bar Options*
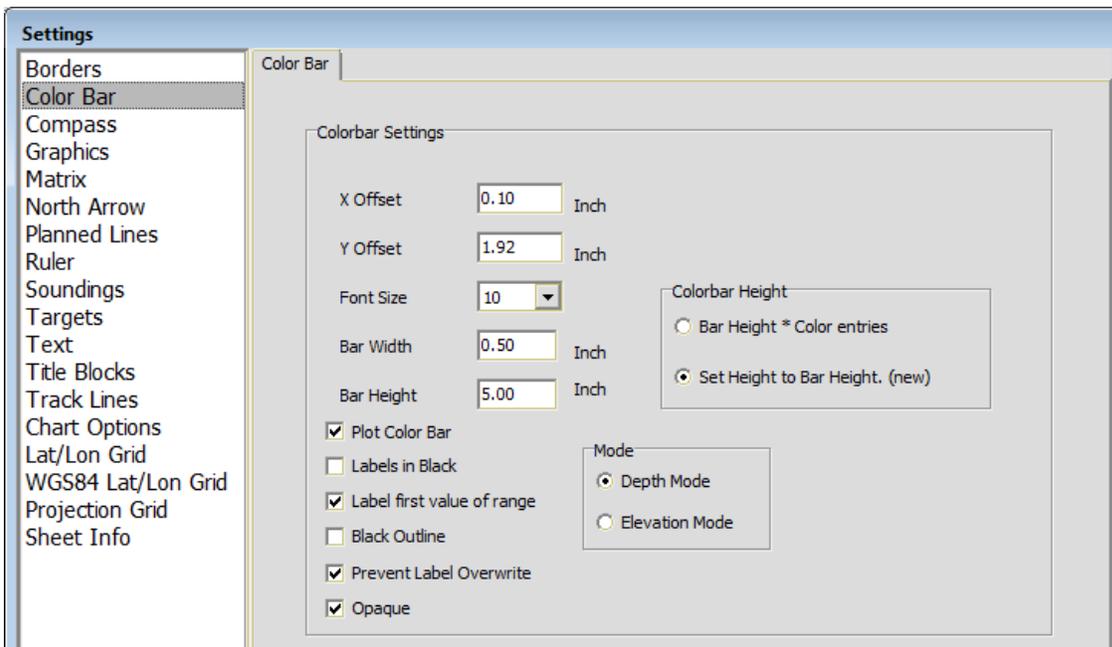
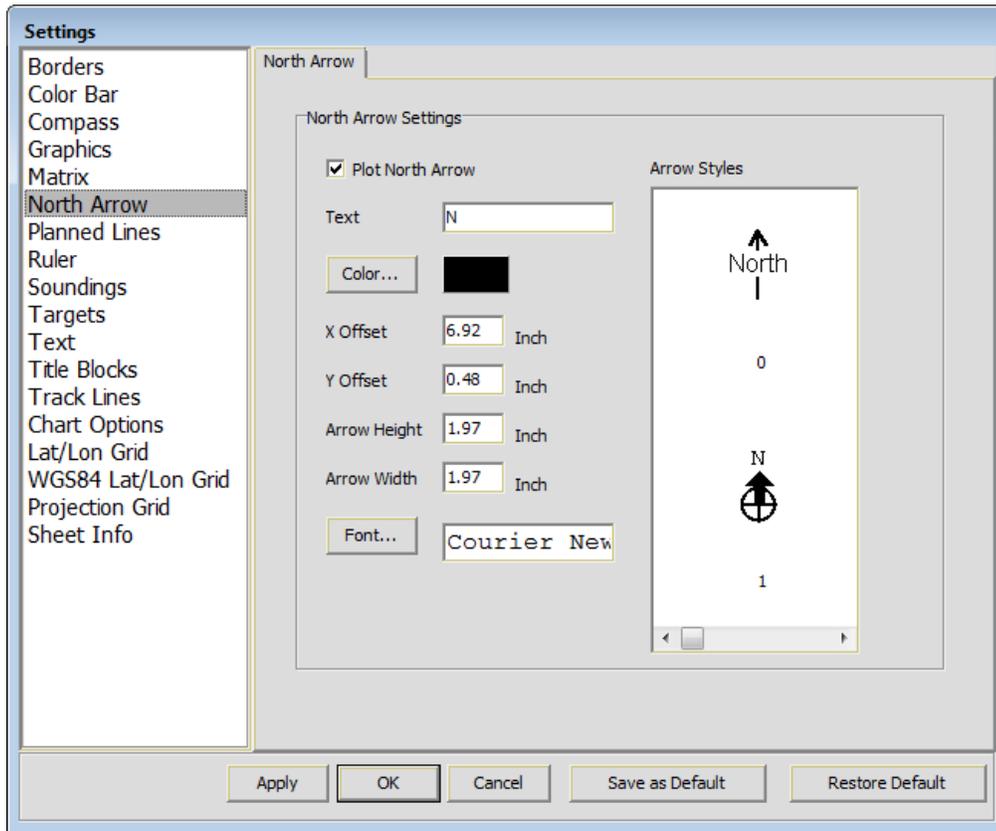**FIGURE 8.** *Control Panel—North Arrow Options*

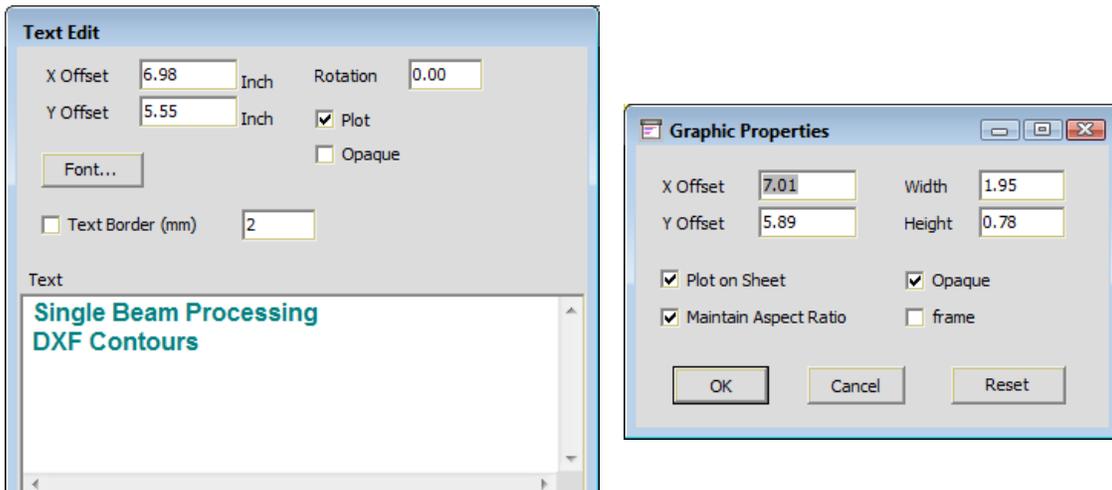**FIGURE 9.** *Control Panel—Text Options (left), Graphics Options (right)*

FIGURE 10. *Control Panel—Title Box Options*