Chapter 14 -- PLOTTING and REPORTING

Processed map data may be viewed in two primary formats--the **plot** and the **report**. In the plotting department, there are four commands which generate a wide range of plot types: **plot, area_plot and pers_plot, plot_ascii**. The **p_create** command provides additional plotting control. The **report** command provides the user with an extremely flexible report generator which can output to the screen, printer and/or an ascii file.

CREATING A PEN FILE

The power of set operations can be experienced (feels good) with the plotting operations via a *pen* file. This file may be generated by the user with the **p_create** function which permits (or prompts for) assignment of pen number(s) to set(s). With a multi-pen plotter, a user may utilize colors and/or tip sizes to represent various sets of information. The **p_create** command creates the specified file and writes to that file a 32-digit number. Each digit of that number contains a value in the range of 0-8. That value represents the pen number assigned to the set number which is defined by the position of the digit within the argument (increasing left to right, from 0 to 31). If there are less than 32 digits specified in the argument, then sets not shown are assumed to be assigned to pen 0 (no plot). The user is also required to supply a pen file name as the first argument associated with this command. Unless a full path name is included with the file name argument, the specified file name will be created under the **/u[sr]/ltp/pens** directory.

AREA PLOT

The **area_plot** command generates a multiple-map plot. It relies upon a map list file to supply the names of the maps to be displayed. The full list is evaluated and a geodetic window is determined from the registration values stored for the maps. The user must specify the plotter device and the type of labeling which will occur. Optional parameters include the label character size (in mils), and, if the **-s (set)** option is included, a **pen** file name. The **area_plot** is an excellent means of determining that a particular layer is complete and that all of the maps have been registered properly. The user must also specify the output device; choices include:

0 = screen
1 = plotter1
2 = plotter2

Map objects may be labeled with the record number, serial number or attribute text string (first attribute). Note that labeling of any of these items occurs only when the output device is a plotter; labels will not appear on the screen display. If a label type other than 0 (none) is selected, the user may also specify the label character size (in mils). The label type codes include:

0 = none
1 = record number
2 = serial number
3 = attribute

PERSPECTIVE PLOT

Typically used with contour layer processing, the **pers_plot** command will produce a false perspective plot which is useful in editing contour data. The user must supply a label type (see **area_plot**, earlier in this chapter) code, a code representing the cardinal direction from which the map will be viewed, a depth ratio (ratio of z coordinate, elevation, to x coordinate), a minimum elevation and an elevation ratio (ratio of x coordinate to y coordinate). The map view codes include:

n = north
s = south
e = east
w = west

PLOTTING

Similar to the **area_plot** command, the **plot** function generates a **plot** of the current, active map. The user may designate the plotter, label type, label size and optional pen:set assignments. If the **-s** selective plot parameter is included, the user must also include a pen file name. If the user selects an ascii file for plotter output, she/he must also enter a plot file name.

Similar to the **area_plot** command, the **plot** function generates a **plot** of the current, active map. The user may designate the plotter, label type and size and optional pen:set assignments. No option defaults to plotting all objects in pen 1. When creating an ascii plot file (**dev = 3**), the plotter origin is assumed to be the center of the media unless the **-L** argument is specified which indicates a lower left origin. In all other cases (**dev != 3**), **plot** views the **config** file entry for the designated plotter type (**plt1_type** or **plt2_type**); if the equivalency string begins with the letter **L**, then the origin will be assumed to be the lower left of the plotting media. If the string value begins with any other character, or has no entry at all, then the plot origin will be assumed to be the center. The available plotting device options include:

0 = screen
1 = plotter1
2 = plotter2
3 = ascii file

The label type codes include:

0 = none
1 = record number
2 = serial number
3 = first attribute only
4 = all attributes (concatenated)

PLOTTING AN ASCII PLOT FILE

Similar to the **area_plot** command, the **plot_ascii** function generates a **plot** of an existing HP-GL *ascii* file created by a previous **plot** command, where the plotting device for that command was **3** (an *ascii* file). The user must include the device code and file name in this command. If the file name is a relative pathname, it is assumed to be in the **/u[sr]/tmp** directory. The available plotting device codes are:

0 = plotter1
1 = plotter2

GENERATING A REPORT

The **report** function allows the user to specify the output device (screen, printer or an ascii file), the units of length and area, the object type for both primary and secondary ordering of information and a set number (0 indicates all objects in the file). The user must supply a device code, a length units code, an area units code, primary and secondary ordering codes, a set number and, if the device code is **2** (ascii file), a file name. The device codes include:

0 = screen
1 = printer1
2 = ascii file (requires a file name)

The **length** and **area units** codes are:

Length Units	**Area Units**
0 = pixels	**0** = pixels
1 = map inches	**1** = map sq. inches
2 = ground feet	**2** = acres
3 = ground miles	**3** = square miles
4 = map centimeters	**4** = map sq. cm.
5 = ground meters	**5** = square meters
6 = ground kilometers	**6** = square km

The primary and secondary ordering codes are:

0 = no sort
1 = object type
2 = record number
3 = serial number
4 = object length/perimeter
5 = area

The available set numbers include:

1 - 24 = specific set number
0 = all objects

More detailed information about the plotting and reporting functions may be found in the *Command Language Reference* section of this manual.